FINAL
ENVIRONMENTAL IMPACT STATEMENT
(VOLUME II – APPENDICES)
Highwood Generating Station

Southern Montana Electric Generation
& Transmission Cooperative, Inc.

United States Department of Agriculture – Rural Utilities Service

USDA Rural Development

Montana Department of Environmental Quality

Montana Department of Environmental Quality

January 2007

PLAINTIFFS' EXHIBIT
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FINAL ENVIRONMENTAL IMPACT STATEMENT (FEIS)
HIGHWOOD GENERATING STATION
Great Falls, Montana

USDA Rural Utilities Service
Washington, D.C.

Montana Department of Environmental Quality
Helena, Montana

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Abstract

Southern Montana Electric Generation and Transmission Cooperative, Inc. (SME) proposes to build a 250-megawatt (MW) coal-fired power plant – the Highwood Generating Station (HGS) – and 6 MW of wind generation at a site near Great Falls, Montana. SME has applied for a loan guarantee to construct the HGS from the Rural Development Utilities Program (RD) of the U.S. Department of Agriculture (USDA). SME has also applied for an air quality permit and other environmental permits and licenses from the Montana Department of Environmental Quality (DEQ). In order to fulfill their respective obligations under the National Environmental Policy Act (NEPA) and the Montana Environmental Policy Act (MEPA), RD and DEQ have jointly prepared an Environmental Impact Statement (EIS). The Proposed Action includes the construction and operation of a 250-MW (net), circulating fluidized bed (CFB), coal-fired generating plant and four 1.5-MW wind turbines. The EIS analyzes the potential environmental effects of SME's Proposed Action and alternatives to that action.

The draft EIS was released in June 2006 and public hearings were held at two locations in July and August; the comment period on the draft EIS closed on August 30, 2006. In response to public and agency comments, a number of changes were made to the EIS text itself – including new alternatives and revised significance findings – and the location of the preferred alternative was shifted to reduce cultural and visual impacts on the Great Falls Portage National Historic Landmark.

More than 20 alternatives are evaluated in Chapter Two of the FEIS but eliminated from more detailed consideration because they fail to meet the purpose and need of the Proposed Action – providing 250 MW of base load generation – on the grounds of cost, reliability, or other technical or environmental shortcomings. Alternatives eliminated include: power purchase agreements; energy conservation and efficiency; renewable non-combustible energy sources (wind energy, solar energy, hydroelectricity, geothermal energy); renewable combustible energy sources (biomass, biogas, municipal solid waste); non-renewable combustible energy sources (natural gas combined cycle, microturbines, pulverized coal, integrated gasification combined cycle coal, oil); nuclear power; two alternatives consisting of combinations of renewable resources; and three alternative sites. Several alternative site-specific components also eliminated include: different railroad spur alignments, alternate methods of obtaining potable water, discharging wastewater into the Missouri River, and disposing ash at local landfills. In the FEIS, USDA and DEQ have selected the Proposed Action as their preferred alternative.

Alternatives assessed in detail include the: 1) No Action Alternative; 2) Proposed Action (construction/operation of the HGS and wind turbines at the Salem site eight miles from Great Falls), and 3) Industrial Park Site (construction/ operation of the power plant, but no wind generation, at an alternate site in a designated industrial park just north of Great Falls). The No Action Alternative avoids most direct adverse environmental effects, but potentially entails a number of indirect and cumulative impacts associated with other generation sources from which SME would have to purchase power if unable to generate its own. In most respects, with the exception of cultural resources, impacts from the Proposed Action (2) and Alternative Site (3) are similar, though the proximity of the Alternative Site to greater numbers of residents intensifies some of these impacts, such as traffic, noise, and air quality; nonetheless, impacts would not likely be significant. Potential air quality impacts at both locations would be reduced to non-significant levels through the application of CFB technology and other pollution controls. SME's plant would be subject to Montana air quality permit limits as well as any Montana mercury rule that may be adopted, and EPA's new federal mercury rule. The main potentially significant adverse impacts would be on cultural and visual resources, because constructing the HGS at the Salem site would adversely affect the Great Falls Portage National Historic Landmark (NHL) commemorating the 1805 portage the Lewis and Clark Expedition made around the Great Falls of the Missouri River. Repositioning the HGS and wind turbines reduces but does not eliminate significant impacts on the NHL. Other impacts rated as significant in the final, but not the draft EIS, are temporary impacts on traffic and Level of Service, and long-term impacts to the acoustical environment of the NHL.

To comment on this final EIS, please contact:

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Comments must be received by March 12, 2007.

HIGHWOOD GENERATING STATION
Final Environmental Impact Statement

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APPENDIX A

ACRONYMS AND ABBREVIATIONS

AADT	Average Annual Daily Traffic
ADT	Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
ACEC	Areas of Critical Environmental Concern
ACHP	Advisory Council on Historic Preservation
AFB	Air Force Base
APE	Area of Potential Effect
APW	Anaconda Pintler Wilderness Area
AQRV	Air Quality Related Values
ARM	Administrative Rules of Montana
ASTM	American Society for Testing and Materials
ATSDR	Agency for Toxic Substances and Disease Registry
AWEA	American Wind Energy Association
BACT	Best Available Control Technology
b_{ext}	Light extinction coefficient
BLM	Bureau of Land Management
BMP	Best Management Practices
BMW	Bob Marshall Wilderness
BNSF	Burlington Northern and Santa Fe Railroad
BPA	Bonneville Power Administration
Btu	British thermal unit
CECRA	Comprehensive Environmental Cleanup and Responsibility Act
CEQ	Council on Environmental Quality
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CFB	Circulating Fluidized Bed (boiler coal technology)
CFR	Code of Federal Regulations
cfs	Cubic feet per second
CH_4	Methane
CLRD	Chronic Lower Respiratory Disease
CO	Carbon Monoxide
CRIS	Cultural Resource Inventory System
CRP	Conservation Reserve Program
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted Decibel
DEIS	Draft Environmental Impact Statement
DEQ	Department of Environmental Quality (Montana)
DNRC	Department of Natural Resources and Conservation (Montana)
DOE	Department of Energy (U.S.)
DOT	Department of Transportation (Montana)
DSM	Demand Side Management
EA	Environmental Assessment
EERE	Energy Efficiency and Renewable Energy (U.S. DOE)
EIA	Energy Information Administration (U.S. DOE)
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency (U.S.)

EPP	Environmentally Preferred Product
ESA	Environmental Site Assessment
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FEIS	Final Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
FGD	Flue Gas Desulfurization
FLAG	Federal Land Manager's Air Quality Related Values Work Group
FLM	Federal Land Managers
FPPA	Farmland Protection Policy Act
fps	Feet per second
FRPP	Farm and Ranch Land Protection Program
FWP	Department of Fish, Wildlife and Parks (Montana)
G&T	Generation and Transmission
GAO	Government Accountability Office (U.S.) [formerly the General Accounting Office]
GE	General Electric
GHG	Greenhouse Gas
GMW	Gates of the Mountains Wilderness area
GNP	Glacier National Park
gpm	Gallons per minute
H_2O	Water
H_2S	Hydrogen sulfide
H_2SO_4	Sulfuric Acid
ha	hectare
HAP	Hazardous Air Pollutant
HAR	Hydrated Ash Reinjection
HC	Hydrocarbons
Hg	Mercury
HGS	Highwood Generating Station
HNO_3	Nitric Acid
HPSL	High Plains Sanitary Landfill
ICBM	Intercontinental Ballistic Missile
IGCC	Integrated Gasification Combined Cycle
IMC	International Malting Company
INEEL	Idaho National Engineering and Environmental Laboratory (U.S. DOE)
IWAQM	Interagency Workgroup of Air Quality Modeling
kCM	kiloCircularMil (phase conductors)
kV	Kilovolt
kWh	Kilowatt-Hour
L90	90th Percentile-Exceeded Noise Level,
lb	Pound
Ldn	Day-Night Average Noise Level
Leq	Equivalent Noise Levels
LESA	Land Evaluation and Site Assessment
LF	Linear (or lineal) feet
LFG	Landfill Gas

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LMA	Labor Market Area
LOS	Level-of-Service
LUST	Leaking Underground Storage Tank
MAAQS	Montana Ambient Air Quality Standards
MCA	Montana Code Annotated
Mcf	Thousand cubic feet
MDEQ	Montana Department of Environmental Quality
MDFWP	Montana Department of Fish, Wildlife, and Parks
MDOT	Montana Department of Transportation
MEPA	Montana Environmental Policy Act
MFISH	Montana Fisheries Information System
mgd	Million gallons per day
mi^2	Miles squared (or square miles)
MMBtu	Million British Thermal Units
MMW	Mission Mountain Wilderness area
MNHP	Montana Natural Heritage Program
MPC	Montana Power Company
MPDES	Montana Pollutant Discharge Elimination System
MSA	Metropolitan Statistical Area
MSL	Mean Sea Level
MSW	Municipal Solid Waste
MT	Montana
MW	Megawatt
MWh	Megawatt-hour
NAAQS	National Ambient Air Quality Standards
NEMS	National Energy Modeling System
NEPA	National Environmental Policy Act
NGCC	Natural Gas Combined Cycle
NGO	Non-Governmental Organization
NH_3	Ammonia
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NOx	Nitrogen oxides
NO	Nitric Oxide
NOI	Notice of Intent
NPL	National Priorities List
NPS	National Park Service
NRC	Nuclear Regulatory Commission
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSR	New Source Review
NWPP	Northwest Power Pool
O&M	Operations and Maintenance
O_2	Oxygen
O_3	Ozone
Pb	Lead
PC	Pulverized Coal

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PM	Particulate Matter
PM_{10}	Particulate Matter smaller than 10 microns in diameter
PPL	Pennsylvania Power & Light
ppm	Parts per million
PRB	Powder River Basin
PSD	Prevention of Significant Deterioration
PV	Photovoltaic
RCRIS	Resource Conservation Recovery Information System
RDF	Refuse Derived Fuel
REC	Recognized Environmental Condition
RFP	Request for Proposal
RTI	Research Technologies, Inc.
RUS	Rural Utilities Service
SAC	Strategic Air Command
SCR	Selective Catalytic Reduction
SGW	Scapegoat Wilderness area
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SME	Southern Montana Electric (SME Generation and Transmission Cooperative, Inc.)
SNCR	Selective Non-Catalytic Reduction
SO_2	Sulfur Dioxide
SO_4	Sulfate
Tcf	Trillion cubic feet
TCP	Traditional Cultural Properties
TES	Threatened and Endangered Species
TMDL	Total Maximum Daily Load
U.S.	United States
USC	United States Code
ULBW	UL Bend Wilderness Area
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	Volatile Organic Compound
VRM	Visual Resource Management
WAPA	Western Area Power Administration
WECC	Western Electricity Coordinating Council
WGA	Western Governors Association
WSCC	Western System Coordination Council

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APPENDIX B

GLOSSARY

Abiotic: Non-living or non-biological; includes chemical and physical environments and processes.

Acoustic environment: The totality of noise within a given area.

ACHP: See Advisory Council on Historic Preservation.

Advisory Council on Historic Preservation: An independent federal agency that promotes the preservation, enhancement, and productive use of our nation's historic resources, and advises the President and Congress on national historic preservation policy.

Aesthetic resources: See "Visual resources."

Agency for Toxic Substances and Disease Registry (ATSDR): Based in Atlanta, Georgia, ATSDR is a federal public health agency of the U.S. Department of Health and Human Services. It serves the public by using science, taking public health actions, and providing health information to prevent harmful exposures and diseases related to toxic substances.

Airshed: A geographic area where air pollutants from sources "upstream," or within a discrete atmospheric area of flow, are present in the air. While watersheds are actual physical features of the landscape, airsheds are determined using mathematical models of atmospheric deposition.

Air quality: The characteristics of the ambient air (all locations accessible to the general public) as indicated by concentrations of the six air pollutants for which national standards have been established, and by measurement of visibility in mandatory Federal Class I areas.

Alluvium: Material transported and deposited on land by flowing water, such as clay, silt, and sand.

Alternatives analysis: What CEQ calls the "heart of the EIS;" the evaluation of the proposed action compared to all of the alternatives used to define the issues and provide a clear basis for choice among the options.

Ambient air: Any unconfined portion of the atmosphere: open air, surrounding air.

American Society for Testing and Materials (ASTM): ASTM develops technical standards for industry worldwide.

Anhydrous ammonia: Synthetic ammonia used as a nitrogen fertilizer, it is the basis for the production of all nitrogen fertilizers as well as being a direct application material. It is made through a reaction between gas and nitrogen.

Anthropogenic: Of or caused by humans.

APE: See Area of Potential Effect.

Aquifer: An underground layer of rock and sand that contains water.

Archeology: The scientific study, interpretation, and reconstruction of past human cultures from an anthropological perspective based on the investigation of surviving physical evidence of human activity and the reconstruction of related past environments.

Archeological resources: Any material of human life or activities that is at least 100 years old, and that is of archaeological interest.

Area of Potential Effect: Geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if such properties exist. The area of potential effects is influenced by the scale and nature of the undertaking and may be different for different kinds of effects caused by the undertaking.

Attainment area: An area considered to have air quality as good as or better than the National Ambient Air Quality Standards as defined in the Clean Air Act. An area may be an attainment area for one pollutant and a non-attainment area for others.

Autism: A brain disorder that begins in early childhood and persists throughout adulthood; it affects three crucial areas of development: communication, social interaction, and creative or imaginative play.

Average Annual Daily Traffic (AADT): Daily number of vehicular movements (e.g., passenger vehicles, buses, and trucks) in both directions on a segment of roadway, averaged over a full calendar year.

Average Daily Traffic (ADT): Daily number of vehicular movements (e.g., passenger vehicles, buses, and trucks) in both directions on a segment of roadway, averaged over a period less than a year.

Background zone: A term used in the Bureau of Land Management VRM; includes seen areas beyond the foreground-middleground zone but usually less than 15 miles (24 km) away.

Baghouse: An enclosed structure that uses filter bags to help remove sulfur dioxide, fly ash, and other particulates from flue and other exhaust gases.

Barker-Hughesville (BH) District: An historic mining district located in both Cascade and Judith Basin Counties, in the Little Belt Mountains southeast of Great Falls; due to the impacts of mining activities, area groundwater, soils and surface water are now contaminated with heavy metals and arsenic.

Base load: The minimum demands of electricity on a power station over a given period of time; the amount of electricity required to operate a plant continuously, day and night, all year long.

Base Realignment and Closure (BRAC): The process the Department of Defense uses to reorganize its installation infrastructure to more efficiently and effectively support its forces, increase operational readiness and facilitate new ways of doing business.

Berm: A curb, ledge, wall or mound used to contain water, separate materials, and/or prevent the spread of contaminants.

Best management practices (BMPs): Methods that have been determined to be the most effective, practical means of preventing or reducing pollution from non-point sources, including construction sites.

Binary cycle power plant: A system where the water or steam from the geothermal reservoir never comes into contact with the turbine or generator unit.

Bioaccumulation/ biomagnification: The collection or amplification of a substance in a biological system; the increase in tissue concentration of bioaccumulated chemical as the chemical passes up through two or more trophic levels.

Biogas: Gas, typically rich in methane, that is produced by the fermentation of organic matter such as manure under anaerobic conditions.

Blowdown: Removal of liquids or solids from a process, a storage vessel, or an evaporative system by the use of pressure to reduce mineral concentration that can cause scaling.

Burlington Northern and Santa Fe (BNSF) Railway: Headquartered in Fort Worth, Texas, BNSF is one of the largest railroad networks in North America. It was formed in 1996 when the Atchison, Topeka and Santa Fe Railway was merged into the Burlington Northern Railroad.

Busbar cost: The wholesale cost to generate power at a plant.

Carboxyhemoglobin: Compound that is formed when inhaled carbon monoxide combines with hemoglobin, binding more tightly than oxygen and rendering the hemoglobin incapable of transporting oxygen.

Cerebrovascular disease: Disease involving blood vessels supplying the brain, such as a stroke.

Chronic lower respiratory disease (CLRD): Includes asthma, chronic obstructive pulmonary disease and bronchiectasis.

Coal Combustion Product (CCP): Large-volume, non-hazardous waste products resulting from combustion of coal at power plants; CCPs that are disposed of in landfills, surface impoundments, or used as mine backfill, are regulated under subtitle D of the Resource Conservation and Recovery Act, and are thus subject to significantly stricter federal regulation than reused CCPs.

Coalbed methane gas: Methane produced from seams of coal in the same way that natural gas is produced from other strata; coalbed methane is generated either from a biological process as a result of microbial action, or from a thermal process as a result of increasing heat with depth of coal. Often a coal seam is saturated with water, with methane held in the coal by water pressure.

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Co-firing: The practice of introducing biomass in high-efficiency, coal-fired boilers as a supplemental energy source.

Combustion: Burning. Many important pollutants, such as sulfur dioxide, nitrogen oxides, and particulates (PM-10) are combustion products, often products of the burning of fuels such as coal, oil, gas and wood

Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS): Contains information on hazardous waste sites, potentially hazardous waste sites, and remedial activities across the nation, including existing and potential NPL sites.

Contamination: Introduction into water, air, and soil of microorganisms, chemicals, toxic substances, wastes, or wastewater in a concentration that makes the medium unfit for its next intended use.

Continental divide: The line of high ground that separates the oceanic drainage basins of a continent; the river systems of a continent on opposite sides of a continent divide flow toward different oceans.

Criteria air pollutants: A group of y common air pollutants regulated by EPA on the basis of criteria (information on health and/or environmental effects of pollution) and for which NAAQS have been established. In general, criteria air pollutants are widely distributed over the country. They are: particulate matter (PM), carbon monoxide (CO), sulfur dioxide (SO_2), ozone (O_3), and lead (Pb).

Cultural resources: Any building, site, district, structure, object, data, or other material significant in history, architecture, archeology, or culture. Cultural resources include: historic properties as defined in the National Historic Preservation Act (NHPA), cultural items as defined in the Native American Graves Protection and Repatriation Act (NAGPRA), archeological resources as defined in the Archeological Resources Protection Act (ARPA), sacred sites as defined in Executive Order 13007, *Protection and Accommodation of Access To "Indian Sacred Sites,"* to which access is provided under the American Indian Religious Freedom Act (AIRFA), and collections.

Cumulative impacts: Impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Effects resulting from individually minor but collectively significant actions taking place over a period of time.

Decibel (dB): The unit of measurement of sound level calculated by taking ten times the common logarithm of the ratio of the magnitude of the particular sound pressure to the standard reference sound pressure of 20 micropascals and its derivatives.

dBA (A-weighted Decibel): The A-scale sound level is a quantity, in decibels, read from a standard sound-level meter with A-weighting circuitry. The A-scale weighting discriminates against the lower frequencies according to a relationship approximating the auditory sensitivity of the human ear. The A-scale sound level measures approximately the relative "noisiness" or "annoyance" of many common sounds.

Dendritic Drainage: A river or stream tributary pattern resembling the branching of certain hardwood trees.

Discharge: The volume of fluid plus suspended sediment that passes a given point within a given period of time.

Dissolved Oxygen: An amount of oxygen dispersed in water, usually expressed as mg/L; DO sustains the lives of fish and other aquatic organisms; cold and flowing water usually contains more DO than warm, stagnant water.

Electric load: The combined electrical needs of all units in a system.

Emplanements: Number of passenger boardings in a given period of time (day, year, etc.) at an airport.

Endangered species: A species that is threatened with extinction throughout all or a significant portion of its range.

Environment: The total surroundings of an organism, including both non-living (abiotic) and living (biotic) components, that is, other plants and animals as well as those of its own kind.

Environmental Assessment: A concise public document which serves to briefly provide sufficient evidence and analysis for determining whether to prepare an EIS or a Finding of No Significant Impact (FONSI) in compliance with NEPA.

Environmental Site Assessment (ESA): Provides a good general indication of the past and existing conditions on a site that could indicate a recognized environment condition (i.e. contamination).

Evapotranspiration (ET) Cap: Cap commonly used at Class II landfills and other waste repositories in Montana. As each waste cell is filled, a final cover is placed on it. The final cover is designed to retain the precipitation that falls on the final cover and maximize evaporation and transpiration by the plants grown on the cover. The cap is constructed with a gravel layer immediately on top of the waste material (like ash) to serve as a capillary break. The gravel is covered with 48 inches of materials that function as subsoil. The capillary break prevents the subsoil from losing water into the waste. Six inches of topsoil are applied and planted with suitable vegetation to minimize erosion and transpire the moisture retained in the cap. The ET cap is easier to construct and maintain than a compacted clay cap and mimics the natural soil conditions while preventing infiltration.

Farmland Protection Policy Act (FPPA): A federal law that aims to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to non-agricultural uses. It assures that, to the extent possible, federal programs are administered to be compatible with state, local, and private programs and policies to protect farmland.

Federal Aviation Administration (FAA): Federal agency primarily responsible for the advancement, safety and regulation of civil aviation in the United States.

Footprint (ecological): A measure of how much land and water is needed to produce the resources that humans consume and to dispose of the waste that humans produce.

Foreground-middleground zone: A term used in the Bureau of Land Management VRM; includes areas seen from highways, rivers, or other viewing locations which are less than 3-5 miles (5-8 km) away.

Flue gas: The air coming out of a chimney after combustion; it can include nitrogen oxides, carbon oxides, water vapor, sulfur oxides, particles and many chemical pollutants.

Flue gas desulfurization: Removes PM and SO_2 by producing contact between the exhaust gas and a scrubbing slurry (generally limestone). Mounted horizontal plates facilitate the transport of the slurry, whose contact with the exhaust gas forms a wet mixture of calcium sulfite and sulfate.

Fugitive dust: Particles lifted into the ambient air due to man-made and natural activities such as the movement of soil, vehicles, equipment, blasting, and wind. This excludes particulate matter emitted directly from the exhaust of motor vehicles and other internal combustion engines.

Fly ash: Non-combustible residual particles expelled by flue gas.

Gasification: A method for exploiting poor-quality coal and thin coal seams by burning the coal in place to produce combustible gas that can be collected and burned to generate power or processed into chemicals and fuels.

Generating capacity: The total amount of electrical power that a utility can produce at any one time, usually measured in megawatts; three types generating capacity include a base load, an intermediate load, and a peaking capacity.

Geothermal resources: Internal heat of the earth when used as a source of energy, it is usually contained in underground reservoirs of steam, hot water, and hot dry rocks.

Groundwater: Water in the porous rocks and soils of the earth's crust; a gratuitous proportion of the total supply of fresh water.

Habitat: A place where particular plants or animals occur or could occur.

Hazardous substances: Solid or liquid materials, which may cause or contribute to mortality or serious illness by virtue of physical and chemical characteristics, or pose a hazard to human health or the environment when improperly managed, disposed of, treated, stored, or transported.

Hazardous waste: A waste or combination of wastes which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either cause, or significantly contribute to an increase in mortality or an increase in serious, irreversible illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Haze: An atmospheric aerosol of sufficient concentration to be visible. The particles are too small to see individually, but reduce visual range by scattering light.

Heat: The transfer of energy from one object at a higher temperature to another object at a lower temperature.

Heavy metals: Metallic elements like mercury, lead, cadmium, arsenic, copper and zinc that can be harmful pollutants when they enter air, soil, and water.

Hemoglobin: Oxygen-carrying pigment and protein in red blood cells of vertebrates.

High Plains Sanitary Landfill and Recycle Center (HPSL): A licensed landfill located within Cascade County, approximately nine miles (14 km) north of the City of Great Falls and one mile (1.6 km) east of US Route 87.

Historic Landmark: Significant historic places designated by federal, state, or local officials because they possess exceptional value or quality in illustrating or interpreting the heritage of the United States.

Historic Property: As defined by the NHPA, a historic property or historic resource is any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP), including any artifacts, records, and remains that are related to and located in such properties. The term also includes properties of traditional religious and cultural importance (traditional cultural properties), which are eligible for inclusion in the NRHP as a result of their association with the cultural practices or beliefs of an Indian tribe or Native Hawaiian organization.

Hydroelectric: Related to electric energy produced by moving water (i.e. through a dam on a river that stores water in a reservoir).

Impairment: An adverse impact on a resource or a value (i.e. when a significant adverse impact reaches the level of impairing a national park, it is prohibited under the Organic Act of 1916).

Intercontinental Ballistic Missile (ICBM): A very long-ranged, ballistic missile typically designed for nuclear weapons delivery, delivering one or more nuclear warheads to a pre-designated target.

Labor Market Area: An economically integrated geographic area within which individuals can reside and find employment within a reasonable distance or can readily change employment without changing their place of residence.

Lacustrine: Pertaining to lakes. According to the U.S. Fish and Wildlife Service's classification system, these wetlands are characterized by the following: (1) situated in a topographic depression or a dammed river channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30 percent areal coverage; and (3) a total area exceeding 20 acres (8 ha).

Lacustrine limnetic wetland: All deep waters within the lacustrine system.

Lacustrine littoral wetland: Wetlands along lake edges and shorelines, typically shallow wetlands (less than 2 meter water depth) which extend from the shore to the non-persistent emergent deep waters.

Land Evaluation and Site Assessment (LESA): The Natural Resources Conservation Service (NRCS) in Montana uses the LESA system to rank and prioritize proposals for the Farm and Ranch Lands Protection Program (FRPP), and to systematically assess and identify prime agricultural lands through the use of a consistent rating scheme. Factors are used to label a group of attributes such as soil potential, agricultural productivity, or environmental benefit. Factor scale refers to the way points are assigned to a factor, i.e. 0 to 100 points. A factor rating is the value assigned to a particular parcel. Weight refers to the relative importance of the factor in the LESA system, i.e. a multiplier applied to a factor rating (for example, 0.0 to 1.0). Score is used to denote the total of all weighted factor ratings, i.e. a LESA score.

L_{dn}: Day-night average noise level; a single number descriptor that represents the constantly varying sound level during a continuous 24-hour period. The L_{dn} is typically calculated using 24 consecutive one-hour L_{eq} noise levels. The L_{dn} includes a 10 dBA penalty that is added to noises which occur during the nighttime hours between 10:00 p.m. and 7:00 a.m. to account for people's higher sensitivity to noise at night when the background noise level is typically low.

Leq: A-weighted, equivalent noise level; uses a single number to describe the constantly fluctuating instantaneous ambient noise levels at a receptor location during a period of time, and accounts for all of the noises and quiet periods that occur during that time period.

L_{90}: 90th percentile-exceeded noise level; this is a metric that indicates the single noise level that is exceeded during 90 percent of a measurement period, although the actual instantaneous noise levels fluctuate continuously. The L_{90} noise level is typically considered the ambient noise level, and is often near the low end of the instantaneous noise levels during a measurement period.

Level-of-Service (LOS): Performance of a roadway segment. The LOS scale ranges from A to F, with each level defined by a range of traffic volume to capacity ratios. LOS criteria A, B, and C are considered good operating conditions, where motorists experience minor to tolerable delays. LOS criterion D represents below average conditions. LOS criterion E corresponds to the maximum capacity of the roadway. LOS criterion F represents a gridlock situation.

Levelized cost: The present value of the total cost of building and operating a generating plant over its economic life, converted to equal annual payments; costs are levelized (adjusted to remove the impact of inflation) in real dollars.

LMA: See "Labor Market Area."

Market based: Using an economic system in which goods and services are traded at an agreed upon price to improve the cost-effectiveness of a policy.

Mesic: Refers to sites or habitats characterized by intermediate moisture conditions.

Methylation: Conversion of mercury (Hg) into methylmercury (CH_3Hg) through biotic (living) or abiotic (non-living) processes in the environment.

Metropolitan Statistical Area: As defined by the federal Office of Management and Budget, an MSA is an urban area that meets specified size criteria: either it has a core city of at least 50,000 inhabitants within its corporate limits, or it contains an urbanized area of at least 50,000 inhabitants and has a total population of at least 100,000. The Great Falls MSA is coincident with Cascade County.

Millirem: One thousand (10^{-3}) of a rem. A rem is a unit of absorbed radiation. One rem is equal to *n* times the number of rads, where the factor *n* is dependent on the type of radiation which is being absorbed.

Mitigation: A method or action to reduce or eliminate adverse program impacts.

Monitoring (monitor): Systematically observing, recording, or measuring some environmental attribute, such as air quality or water quality, or ascertaining compliance with a given law, regulation, or standard. For example, measurement of air pollution is referred to as monitoring. EPA, state and local agencies measure the types and amounts of pollutants in the ambient air. The 1990 Clean Air Act requires certain large polluters to perform enhanced monitoring to provide an accurate picture of how much pollution is being released into the air. The 1990 Clean Air Act requires states to monitor community air in polluted areas to check on whether the areas are being cleaned up according to schedules set out in the law.

Monofill: A landfill that contains only ash.

Montana State University: A public unit of the Montana University System founded in 1893. The main campus is located in Bozeman, with branch campuses in three other cities, including Great Falls.

MSA: See "Metropolitan Statistical Area."

National Environmental Policy Act: Establishes procedures that Federal agencies must follow in making decisions on Federal actions that may impact the environment. Procedures include evaluation of environmental effects of proposed actions, and alternatives to proposed actions, involvement of the public and cooperating agencies.

National Ambient Air Quality Standards (NAAQS): Standards established on a state or Federal level that define the limits for airborne concentrations of designated "criteria" pollutants (e.g. nitrogen dioxide, sulfur dioxide, carbon monoxide, particulate matter, ozone, and lead) to protect public health with an adequate margin of safety (primary standards) and to protect public welfare, including plant and animal life, visibility, and materials (secondary standards).

National Institute for Occupational Safety and Health (NIOSH): Federal agency responsible for conducting research and making recommendations for the prevention of work-related injury and illness. NIOSH is part of the Centers for Disease Control and Prevention (CDC) in the Department of Health and Human Services.

National Priorities List: List of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories; sites listed in the NPL also are known as Superfund sites.

National Register of Historic Places: The nation's official list of cultural resources worthy of preservation. Authorized under the National Historic Preservation Act of 1966, the National Register is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources. Properties listed in the Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. The National Register is administered by the National Park Service.

Native vegetation: Plant life that occurs naturally in an area without agriculture or cultivation efforts.

Navigable waters: The waters of the United States, including the territorial seas; all waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide, as defined by 40 CFR 110.1.

NEPA: See "National Environmental Policy Act."

Neurotoxicity: Having the capability of harming nerve tissue.

Noise: Sound that is perceived by humans as annoying and unwanted.

NPL: See "National Priorities List."
Non-attainment area: An area that has been designated by the U.S. Environmental Protection Agency and the appropriate state air quality agency as exceeding one or more National Ambient Air Quality Standards.

NPL: See "National Priorities List."

NRHP: See "National Register of Historic Places."

Palustrine emergent wetland: Classification of the U.S. Fish and Wildlife Service for non-tidal wetlands dominated by trees, shrubs, or persistent emergent vegetation. Palustrine emergent wetlands include vegetated wetlands traditionally called by such names as marsh, swamp, bog, fen, and prairie. They also include small, shallow, permanent or intermittent water bodies often called ponds.

Particulate matter: Solid or liquid matter suspended in the atmosphere.

Photochemical: Of or pertaining to chemical action of light, or produced by it.

Photovoltaic: Converting light into electricity; semiconductor devices that convert sunlight into direct current electricity (i.e. solar cells).

Plume: A continuous emission from a point source of contamination that has a starting point and a noticeable pathway.

Portage: On a river expedition using watercraft, overland transport of boats (rafts, keelboats, canoes, kayaks, etc.) and gear around insurmountable obstacles such as waterfalls, cascades, or boulders. On lakes, a portage is a land crossing between unconnected lakes. Portages often entail substantial time or effort or both.

Potable: A liquid, usually water, which is drinkable.

Powder River Basin: An area containing the world's largest single deposit of low-sulfur coal, located in southeastern Montana and northeastern Wyoming.

Power purchase agreement: The off-take contract from a large customer to buy the electricity generated by a power plant.

Pulverized coal: A coal that has been crushed to a fine dust in a grinding mill. It is blown into the combustion zone of a furnace and burns very rapidly and efficiently.

Reclamation/ remediation: The process of restoring an area to an acceptable pre-existing condition; an action to correct damage to the environment (i.e. after a power plant is decommissioned or shut down).

Recognized Environmental Condition (REC): Refers to the presence or likelihood of a hazardous substance or petroleum on a property under conditions that indicate a release or threat of a release to the environment.

Resource Conservation Recovery Information System (RCRIS): RCRIS provides selective information on sites that generate, transport, or dispose of hazardous wastes.

Riverine-lacustrine boundary: Transition zone at which a river enters a reservoir or natural lake.

Runoff: The non-infiltrating water entering a stream or other conveyance channel shortly after a rainfall.

Scenic resources (see "Visual Resources")

Scoping: Planning process that solicits people's and "stakeholders'" opinions on the value of a park, issues facing a park, and the future of a park. Also used in the NEPA process at the outset of preparing an EA or an EIS to help determine the scope of the study and the major issues that merit investigation and analysis.

Sediment: Particles derived from rock or biological sources that have been transported by water.

Seldom-seen zone: A term used in the Bureau of Land Management VRM; includes areas not seen as foreground-middleground or background (hidden from view)

Selective catalytic reduction: A non-combustion control technology that converts NOx into molecular nitrogen and water by injecting a reducing agent (i.e. ammonia) into the flue gas in the presence of a catalyst.

Sensitive receptor: Areas defined as those sensitive to noise, such as hospitals, residential areas, schools, outdoor theaters, and protected wildlife species.

SHPO: See State Historic Preservation Officer.

Siltation: Deposition of fine mineral particles (silt) on the beds of streams or lakes.

Source: Any place or object from which pollutants are released. A source can be a power plant, factory, dry cleaning business, gas station or farm. Cars, trucks and other motor vehicles are sources, and consumer products and machines used in industry can be sources too. Sources that stay in one place are referred to as stationary sources; sources that move around, such as cars or planes, are called mobile sources.

Species: All organisms of a given kind; a group of plants or animals that breed together but are not bred successfully with organisms outside their group.

State Historic Preservation Officer: Appointed under the authority of the National Historic Preservation Act of 1966, the State Historic Preservation Officer (SHPO) is the official in each state and territory charged with administering national and state historic preservation program at the state level.

Steady state: A type of equilibrium in which those variables that are not constant grow over time at a constant and common rate.

Storm water: Runoff water resulting from precipitation.

Strategic Air Command (SAC): Branch of the United States Air Force that, from 1946 to 1992, was in charge of America's bomber-based and ballistic missile-based strategic nuclear arsenal, as well as the infrastructure necessary to support their operations.

Sub-bituminous coal: A coal with a heating value between bituminous (soft; high in carbon) and lignite (young; low-grade; low in sulfur) with low-fixed carbon and high percentages of volatile matter and moisture.

Swamp gas: Biogas that is produced by the anaerobic decomposition of wetland vegetation that has settled to the bottom of a marsh, swamp, or other wetland.

TCP: See Traditional Cultural Property.

Thermoelectric: The conversion from heat differentials to electricity or vice versa (i.e. when heated water in a boiler turns into steam, and the steam spins the turbine that generates electricity; when water is used to cool steam back into water so it can be pumped back to the generator to become steam again).

Thimerosal: A mercury-containing preservative used in some vaccines and other products since the 1930's. No harmful effects were reported from thimerosal at doses used in vaccines, except for minor local reactions like redness and swelling at the injection site. The medical profession assured the public that there was specifically no scientific evidence linking thimerosal to an increased risk of developing autism or any other behavior disorder, but many parents of autism sufferers have not accepted these assurances. In 1999, in response to this unresolved controversy, it was agreed that thimerosal should be reduced or eliminated in vaccines as a precautionary measure. At present, all routinely recommended pediatric vaccines in the US contain no thimerosal or only trace amounts.

Toxicity: A measure of how toxic or poisonous something is.

Traditional Cultural Property: A property eligible for inclusion on the National Register of Historic Places because of its association with cultural practices or beliefs of a living community that are important in maintaining the continuing cultural identity of the community. Traditional Cultural Properties are essential to maintaining the cultural integrity of many Native American Indian nations and are critical to the cultural lives of many of their communities.

Turbidity: A measure of water clarity; a measure of the amount of suspended solids (usually fine clay or silt particles) in water and thus the degree of scattering or absorption of light in the water.

Vernal Pool: Seasonal, depressional wetlands. They are covered by shallow water for variable periods from winter to spring, but may be completely dry for most of the summer and fall. Vernal pools range in size from small puddles to shallow lakes and are usually found in a gently sloping plain of grassland. Although generally isolated, they are sometimes connected to each other by small drainages known as vernal swales. Beneath vernal pools lies either bedrock or a hard clay layer in the soil that helps keep water in the pool.

Viewshed: Subunits of the landscape where the scene is contained by topography, similar to a watershed.

Visual resources: The quality of the environment as perceived through the visual sense; visual resources are evaluated by comparing project features with the major features in the existing landscape; denotes an interaction between a human observer and the landscape he or she is observing.

Visual resource inventory: As part of the visual resource management system developed by the Bureau of land Management, consists of identifying the visual resources of an area and assigning them to inventory classes. The process involves rating the visual appeal of a tract of land, measuring public concern for scenic quality, and determining whether the tract of land is visible from travel routes or observation points. Based on these three factors, BLM-administered lands are placed into one of four visual resource inventory classes. These inventory classes represent the relative value of the visual resources. Classes I and II are the most valued, Class III represents a moderate value, and Class IV represents the least value.

Visual Resource Management: A system developed by the Bureau of Land Management for minimizing the visual impacts of surface-disturbing activities and maintaining scenic values for the future.

Visual resource contrast rating: The second step of the Bureau of Land Management's VRM process, used to determine the significance of aesthetic impacts. The contrast rating classifies changes in a landscape introduced by a project into one of four "dominance classes:" not noticeable, noticeable, distracting, and dominant.

Volatile Organic Compounds (VOCs): Any organic compound that participates in atmospheric photochemical reactions. Some compounds are specifically listed as exempt due to their having negligible photochemical reactivity. [See 40 CFR 51.100.] Photochemical reactions of VOCs with oxides of nitrogen and sulfur can produce O_3 and PM.

VRM: See Visual Resource Management.

Waste-to-energy: A range of processes associated with municipal or industrial waste where the waste is burned, gasified or digested at a high temperature. Energy is recovered from these processes (usually in the form of heat) and is reclaimed to produce steam and/or generate electricity.

Water rights: A body of law that determines water ownership; a legal right to take possession of water occurring in a natural waterway and to divert that water for beneficial use.

Western System Coordination Council (WSCC): The U.S. bulk power system has evolved into three major networks or power grids. The WSCC is one of these networks. The major networks consist of extra-high-voltage connections between individual utilities designed to permit the transfer of electrical energy from one part of the network to another. These transfers may be restricted by a lack of contractual arrangements or by inadequate transmission capability.

Wetlands: Areas that are inundated or saturated with surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil, including swamps, marshes, bogs, and other similar areas.

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APPENDIX C

RELEVANT FEDERAL AND STATE ENVIRONMENTAL LAWS AND REGULATIONS

Relevant Laws and Regulations	Summary	Resource/ Consideration	Compliance
Federal			
National Environmental Policy Act (NEPA)	Requires Federal agencies to evaluate the environmental impacts of their actions, and integrate such evaluations into their decision-making processes.	All	This EIS fully complies with NEPA.
Council on Environmental Quality (CEQ) Regulations	These regulations (40 CFR 1500-1508) implement NEPA and establish two different levels of environmental analysis: the environmental assessment (EA) and the environmental impact statement (EIS). An EA determines whether significant impacts may result from a Proposed Action. If significant environmental impacts are identified, and EIS is required to provide the public with a detailed analysis of alternative actions, their impacts, and mitigation measure if necessary.	All	This EIS fully complies with the CEQ Regulations for implementing NEPA.
Clean Water Act (CWA)	Regulates the discharge of pollutants into navigable waters of the U.S. through a permit system (NPDES) administered by US EPA and the states (MPDES in Montana). Non-point sources requirements control pesticide runoff, agricultural runoff, forestry operations and parking lots/motor pools. Point sources require individual or group permits and must be monitored at the point they enter public waters, storm sewers, or natural waterways. Section 311(j) requires facilities to prepare a Spill	Water Resources, Biological Resources, Human Health and Safety	Once plans and specifications are available, and prior to SME constructing facilities on the ground, it may need to perform a Jurisdictional Determination and comply with CWA, in particular, section 404 on discharges of fill into waters and wetlands. In addition, SME and/or its contractors will have to utilize BMP's and a Stormwater Management Plan to minimize erosion, runoff, and sedi-mentation. Any effluent discharges to receiving waters would require

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Relevant Laws and Regulations	Summary	Resource/ Consideration	Compliance
	Prevention Control and Countermeasure Plan, containing minimum prevention facilities, restraints against drainage, and an oil spill contingency plan, etc. Section 404 regulates discharge of dredge and fill materials into "waters of the United States."		an MPDES permit from MDEQ.
Executive Order 11514	Protection of Environment provides leadership for protecting and enhancing the quality of the Nation's environment to sustain and enrich human life.	All	RUS and this EIS comply with E.O. 11514.
The Noise Control Act of 1972, as amended, by the Quiet Communities Act of 1978	Requires compliance with State and local noise laws and ordinances.	Noise, Human Health and Safety	Construction contractors will have to comply, and modify certain practices if public complaints are received.
Clean Air Act (CAA)	The State of Montana has federal approval to administer and enforce the Clean Air Act. Among the varied provisions, it establishes standards for air quality in regard to pollutants generated by internal combustion engines in vehicles, fossil fuel-burning power plants, and other industrial emissions. These standards, known as the National Ambient Air Quality Standards (NAAQS), define the concentrations of pollutants that are allowable in the air to which the general public is exposed (the "ambient" air).	Air Quality	SME is required to comply and obtain a Construction Permit and an Operation Permit for any air contaminant source or emission unit.

Relevant Laws and Regulations	Summary	Resource/ Consideration	Compliance
Endangered Species Act (ESA)	Prohibits harming any species listed by the U.S. Fish and Wildlife Service as either being threatened or endangered. Harming such a species includes not only directly injuring or killing them, but also disrupting the habitat they depend upon.	Biological Resources	No federally listed species protected by the ESA appear to be present onsite. Offsite, the bald eagle forages and nests along the Missouri River.
Executive Order 12372	Intergovernmental Review of Federal Programs directs federal agencies to consult with and solicit comments from state and local government officials whose jurisdictions would be affected by Federal actions.	All	Consultation conducted with state and local officials.
40 CFR 423	Federal effluent limitations, performance standards, and pretreatment standards of any surface water discharged by a Steam Electric Power Generating Point Source.	Water Resources, Biological Resources, Human Health and Safety	SME will have to comply with standards during construction and operation of coal burning power plant.
40 CFR 262.11	Standards Applicable to Generators of Hazardous Waste: Hazardous Waste Determination lists the criteria defining hazardous wastes.	Waste Management	The handling and disposal of any hazardous wastes generated during the construction and operation of an SME power plant will be required to comply with all applicable standards and regulations.

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Relevant Laws and Regulations	Summary	Resource/ Consideration	Compliance
40 CFR 262.40	Standards Applicable to Generators of Hazardous Waste: Record keeping addresses the requirements of recording waste handling activities.	Waste Management	The handling and disposal of any hazardous wastes generated during the construction and operation of an SME power plant will be required to comply with all applicable standards and regulations.
Resource Conservation and Recovery Act (RCRA)	Regulates all aspects of the handling of hazardous waste through RCRA permits issued by the USEPA.	Hazardous Materials	The handling and disposal of any hazardous wastes generated during the construction and operation of an SME power plant will be required to comply with all applicable standards and regulations.
National Historic Preservation Act, Section 106	Provides the framework for Federal review and protection of cultural resources, and to ensure that they are considered during Federal project planning and execution. The implementing regulations for the Section 106 process (36 CFR Part 800) have been developed by the Advisory Council on Historic Preservation (ACHP). The Secretary of the Interior maintains a National Register of Historic Places (NRHP) and sets forth significance criteria for inclusion in the register. Cultural resources included in the NRHP, or determined eligible for inclusion, are considered "historic properties" for the purposed of consideration by Federal undertakings.	Cultural Resources	RUS, MDEQ, Montana SHPO, NPS, and ACHP will cooperate to minimize and mitigate adverse effects on Great Falls Portage National Historic Landmark and any other cultural resources yet to be discovered.

Relevant Laws and Regulations	Summary	Resource/ Consideration	Compliance
Executive Order 11593	Protection and Enhancement of the Cultural Environment provides leadership for protecting, enhancing, and maintaining the quality of the Nation's historic and cultural environment.	Cultural Resources	Cultural resources protected by MOA.
Native American Graves Protection and Repatriation Act (NAGPRA)	Protects Native American human remains, burials, and associated burial goods.	Cultural Resources	SME and its contractors will contact and cooperate closely with the relevant Tribal authorities and the Montana SHPO in the event of the unanticipated discovery of human remains at construction sites.
Executive Order 12898	Requires Federal actions to achieve Environmental Justice by identifying and addressing disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.	All	EIS complies with E.O. 12898.
Executive Order 12088	Requires the head of each executive agency to be responsible for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution, including noise pollution, with respect to Federal facilities and activities under the control of the agency.	Noise	No Federal facility or agency would generate noise or environmental pollution under the Proposed Action.

Relevant Laws and Regulations	Summary	Resource/ Consideration	Compliance
Executive Order 13045	Requires Federal actions and policies to identify and address disproportionately adverse risks to the health and safety of children.	All	Proposed Action does not entail particular risks to health and safety of children.
14 CFR Part 77	Requires compliance with the Federal Aviation Administration (FAA) to identify any potential impacts, such as emissions or height of construction, on air safety and navigable airspace.	Transportation	SME will have to comply, but distance to Great Falls airport under both alternatives means that impacts and regulatory intervention are unlikely.
Executive Order 11990: Protection of Wetlands	An overall wetlands policy for all agencies managing federal lands, sponsoring federal projects, or providing federal funds to state or local projects. It requires federal agencies to follow avoidance, mitigation and preservation procedures with public input before proposing new construction projects.	Water Resources, Biological Resources	Through the CWA Section 404 permitting process, SME will avoid or mitigate any impacts to jurisdictional wetlands.
Farmland Protection Policy Act	Requires federal agencies to use criteria to identify and take into account the adverse effects of their programs on the preservation of farmland, to consider alternative actions that could decrease adverse effects, and to ensure that their programs are compatible with State and local government and private programs and policies to protect farmland.	Farmland and Land Use	Since a loan guarantee from USDA Rural Development would assist SME to purchase farmland and permanently convert it to industrial development, RD may have to fill out Form AD 1066.

Relevant Laws and Regulations	Summary	Resource/ Consideration	Compliance
Montana			
Montana Environmental Policy Act	Provides for the adequate review of state actions in order to ensure that environmental attributes are fully considered. Encourages productive and enjoyable harmony between humans and their environment. Protects the right to use and enjoy private property free of undue government regulation. Promotes efforts that will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humans.	All	This EIS fully complies with MEPA.
Clean Air Act of Montana	Seeks to achieve and maintain levels of air quality that will protect human health and safety and, to the greatest degree practicable, prevent injury to plant and animal life and property. Supports local and regional air pollution control programs. Provides for a coordinated statewide program of air pollution prevention, abatement, and control.	Air Quality	DEQ has verified and confirmed the information in SME's Air Quality and Operating Permits application, validated the models used to predict impacts, imposed Best Available Control Technology to reduce emissions, and issued a Draft Air Quality Permit.
Montana Solid Waste Management Act	DEQ issues licenses for construction and operation of landfills to properly dispose of solid waste.	Waste Management	SME has developed a Waste Management Plan for onsite disposal of ash and submitted a No Migration Petition to DEQ to demonstrate that no leachate will migrate offsite or to aquifers.

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Relevant Laws and Regulations	Summary	Resource/ Consideration	Compliance
Montana Hazardous Waste Act	Protects the public health, safety, and welfare through cooperation with the federal government under the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 to provide for the disposal and control of such hazardous substances and contaminants in a safe and environmentally sound manner.	Waste Management	Hazardous materials will be transported off-site for disposal in an approved facility. SME is working with DEQ to develop on-site disposal of ash in a manner that protects the environment.

Relevant Laws and Regulations	Summary	Resource/ Consideration	Compliance
Environmental Control Easement Act	Protects the public health and safety, the health of living organisms, and the environment from the effects of the improper, inadequate, or unsound management of hazardous wastes and used oil; to establish a program of regulation over used oil and the generation, storage, transportation, treatment, and disposal of hazardous wastes; to ensure the safe and adequate management of hazardous wastes and used oil within this state; and to authorize the department to adopt, administer, and enforce a hazardous waste program pursuant to the federal Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6901 through 6987), as amended.	All	
The Montana Solid Waste Management Act	Protects the public health, safety, and welfare through cooperation with the federal government under the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 to provide for the disposal and control of such hazardous substances and contaminants in a safe and environmentally sound manner.	Solid waste	
Montana Hazardous Waste Act		Waste	

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Relevant Laws and Regulations	Summary	Resource/ Consideration	Compliance
Montana Major Facility Siting Act	Ensures that the location, construction, and operation of electric transmission facilities, pipeline facilities, or geothermal facilities are in compliance with state law and that an electric transmission facility, pipeline facility, or geothermal facility may not be constructed or operated within this state without a certificate of compliance. Ensures: 1) protection of the state's environmental resources, including but not limited to air, water, animals, plants, and soils; 2) consideration of socioeconomic impacts; 3) provide citizens with the opportunity to participate in facility siting decisions; and 4) establish a coordinated and efficient method for the processing of all authorizations required for regulated facilities under this chapter.	Contruction	
The Natural Streambed and Land Preservation Act of 1975	Protects and preserves rivers to be available in their natural or existing state and to prohibits unauthorized projects and, in so doing, keeps soil erosion and sedimentation to a minimum, except as may be necessary and appropriate after due consideration of all factors involved.	Water	
75-6-101 et seq.		Water	

Relevant Laws and Regulations	Summary	Resource/ Consideration	Compliance
75-5-101 et seq.	Protects, maintains, and improves the quality and potability of water for public water supplies and domestic uses	Water	
Clean Air Act of Montana	Prevent, abate, and control the pollution of state waters	Air	
85-1-101 et seq	Provides for a coordinated statewide program of air pollution prevention, abatement, and control; an appropriate distribution of responsibilities among the state and local units of government; facilitates cooperation across jurisdictional lines in dealing with problems of air pollution not confined within single jurisdictions; and provides a framework within which all values may be balanced in the public interest.	Water	
85-2-101 et seq	Governs water use	Water	
The Nongame and Endangered Species Conservation Act	Regulation of ground water and surface water and appropriation of water	Wildlife	
Territorial Integrity Act	To manage certain nongame wildlife for human enjoyment, for scientific purposes,	Construction	

Relevant Laws and Regulations	Summary	Resource/ Consideration	Compliance
Mont. Admin. R. Chapter 8 **Mont. Admin. R. Chapter 20** **Mont. Admin. R. Chapter 30** **Mont. Admin. R. Chapter 36** **Mont. Admin. R. Chapter 40** **Mont. Admin. R. Chapter 50** **Mont. Admin. R. Chapter 53**	and to ensure their perpetuation as members of ecosystems Regulated transmission territories for power transmission. Governs emissions controls, stack height, and other factors affecting air quality Governs major facility siting Regulations governing water quality Regulations governing waste water treatment Regulations governing water treatment plants and operators Solid waste management Regulation of hazardous waste.	Construction, Air Construction Water Construction, Water Construction, Water Solid waste Waste	

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APPENDIX D
LIST OF PERSONS/AGENCIES CONSULTED

Person Contacted	**Agency/ Organization**
Jeff Chaffee	Bison Engineering
Brian Clifton	Cascade County Planning Department
James Combs	MT Department of Transportation, Great Falls Office
Sean Connolly	Big Sky Acoustics
Kristin Connolly	Big Sky Acoustics
Dan Culwell	WESTECH Environmental Services
Stephen Del Sordo	Advisory Council on Historic Preservation
Ken Dickerson	Renewable Technologies, Inc.
Patrick Farmer	WESTECH Environmental Services
Tim Gregori	Southern Montana Electric G& T
Mike Jacobson	Water/Wastewater Treatment Plant, Great Falls
Larry Johnson	Stanley Consultants
Joe Lierow	Bison Engineering
Betty Mathews	Blackfeet Tribal Historic Preservation Office
Richard McCormish	Electrical Consultants, Inc.
Conn McKelvey	Cascade County Planning Department
John Nerud	Cascade County Planning Department
Mark Peterson	Cascade County Roads Department
Bill Walters	City of Great Falls Current Planning Department
Ray Walters	Stanley Consultants

APPENDIX E
FISH, WILDLIFE, AND VEGETATION RESOURCES INVENTORY

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Fish, Wildlife and Vegetation Resources Inventory
for
Proposed Highwood Generating Station

For:

Bison Engineering, Inc.
1400 11th Avenue
Helena, MT 59601

By:

WESTECH Environmental Services, Inc.
P.O. Box 6045
Helena, MT 59604

November, 2005

CONTENTS

TABLES

FIGURES

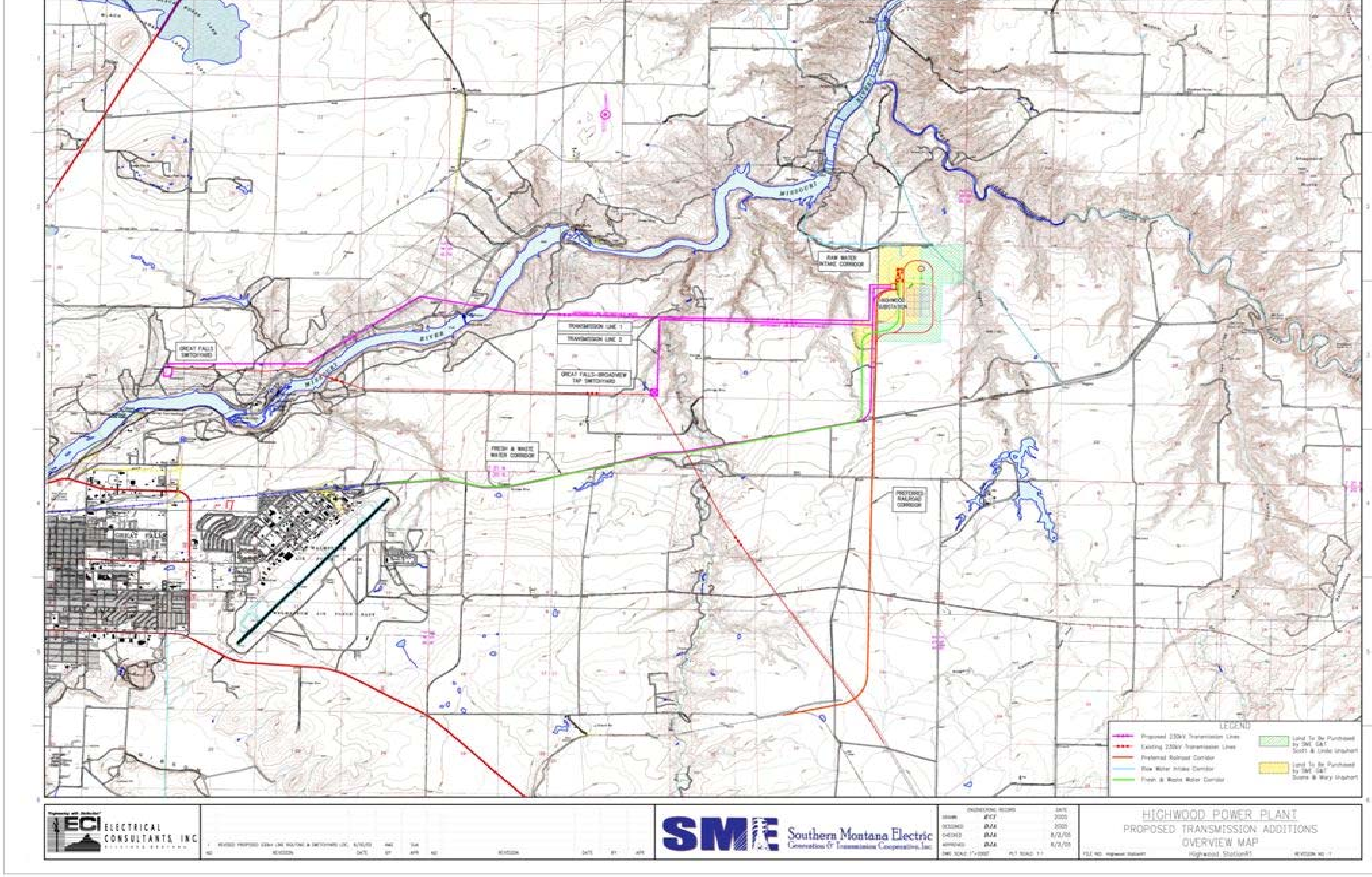
1.0 INTRODUCTION

1.1 PURPOSE AND TIME FRAME

Southern Montana Electric Generation and Transmission Cooperative, Inc. (SME) has proposed to construct and operate a 250 megawatt (MW) coal-fired power plant called the Highwood Generating Station (HGS) near the city of Great Falls in Cascade County, Montana. SME has identified two potential locations for the power plant: the preferred Salem site (Sections 24 and 25, T21N R5E) or the alternative Great Falls Industrial Park site (Section 30, T21N R4E). Development at either site would affect about 320 acres for the boilers, turbine-generator, pollution control equipment, solid waste storage facilities and associated infrastructure.

Development of the Salem site, which is SME's preferred location for the HGS, would include a raw water collection site and pump house located about 0.4 mile above Morony Dam on the Missouri River; a pipeline from the pump house about 9000 feet (1.6 miles) to the HGS; a 7.4-mile long fresh and waste water pipeline following an abandoned railroad grade from the HGS to Great Falls; a 230kV electrical interconnection line (for the purposes of this report, this line is referred to as "Transmission Line 1") from the HGS about 9.2 miles west to NorthWestern Energy's (NWE) existing Great Falls substation, crossing the Missouri River about 0.25 mile below Cochrane Dam; a second 230kV electrical interconnection line (for the purposes of this report, this line is referred to as "Transmission Line 2") about 4.1 miles southwest to a new switchyard in order to connect with the existing NWE Broadview-to-Great Falls 230kV transmission line; and a rail spur from the Salem site about 6.1 miles south to the existing Burlington Northern Santa Fe Railroad line southeast of Great Falls (Figure 1-1). More detailed descriptions of the project are included in various application documents prepared by SME.

Because the Great Falls Industrial Park site is currently considered to be an alternative to the Salem site, the specific locations and lengths of connections have not been formally


RAW WATER INTAKE CORRIDOR
HIGHWOOD SUBSTATION
GREAT FALLS SWITCHYARD
TRANSMISSION LINE 1
TRANSMISSION LINE 2
GREAT FALLS-BROADVIEW TAP SWITCHYARD
FRESH & WASTE WATER CORRIDOR
PREFERRED RAILROAD CORRIDOR
MISSOURI
RIVER
LEGEND
Proposed 230kV Transmission Lines
Existing 230kV Transmission Lines
Preferred Railroad Corridor
Raw Water Intake Corridor
Fresh & Waste Water Corridor
Land To Be Purchased by SME G&T Scott & Linda Urquhart
Land To Be Purchased by SME G&T Duane & Mary Urquhart
ECI ELECTRICAL CONSULTANTS, INC.
SME Southern Montana Electric Generation & Transmission Cooperative, Inc.
HIGHWOOD POWER PLANT
PROPOSED TRANSMISSION ADDITIONS
OVERVIEW MAP
Highwood StationR1

identified. If the Great Falls Industrial Park site is selected for development, the connections would likely be shorter than for the Salem site, due to the proximity of the Great Falls Industrial Park site to the established infrastructure.

An environmental impact analysis of the project is being conducted by the Rural Utility Service (RUS) of the U.S. Department of Agriculture and the Montana Department of Environmental Quality (MDEQ). The purpose of this report is to characterize the fish, wildlife and vegetation resources in the vicinity of the project for use in the environmental impact analysis. This report is based on a field reconnaissance of the project vicinity conducted on April 18-19 and July 6, 2005; a review of readily available (either published or electronic) literature sources concerning fish and wildlife resources of the vicinity; and contact with landowners and agencies.

1.2 ACKNOWLEDGEMENTS

This reconnaissance and report were funded by SME through a subcontract from Bison Engineering, Inc. (Bison) to WESTECH Environmental Services, Inc. (WESTECH). Tim Gregori oversaw the project for SME while Bison's Jeff Chaffee managed WESTECH's involvement, coordinated contacts with state and federal agencies, contacted landowners, and provided maps and other information. Kenneth Reich, Esq. of Wolf, Block, Scharr and Solis-Cohen participated by telephone in a meeting with the U.S. Fish and Wildlife Service (USFWS).

Ray Walters and Larry Johnson of Stanley Consultants provided the footprint of the project and maps of the various sites involved in the project. Dan March and Gary Ingman of Land and Water/PBS&J shared their knowledge of fish and wildlife resources of the area.

Mark Wilson and Sierra Harris of the USFWS provided guidance and information regarding federally listed or proposed endangered or threatened species that could occur in the project area. Graham Taylor and Kristi Dubois of the Montana Department of

Fish, Wildlife and Parks (MDFWP) provided information regarding wildlife of the project vicinity.

Red and Mary Urquhart, landowners, permitted access to their land and shared their knowledge of fish and wildlife resources in the area.

Patrick Farmer of WESTECH conducted the field reconnaissance and wrote this report. Dan Culwell prepared the habitat photographs for inclusion in the report.

2.0 METHODS

2.1 HABITATS

For use as a management tool, wildlife habitats are best identified by an integrated system based on existing vegetation, physical features and land use (Kerr 1986). For the purposes of this report, wildlife habitats in the vicinity of proposed sites for the HGS were identified using designations by WESTECH (1993). This typing method is based on Coenenberg *et al*. (1977) and has been used in numerous wildlife studies in Montana and other states, and has been accepted for use in NEPA documents. Habitat type and subtype codes are based on existing, rather than climax, vegetation and/or other features such as rock outcrops and ponds.

2.2 POTENTIAL/KNOWN SPECIES LISTS

Lists of fish, amphibians, reptiles, mammals and birds that could potentially occur in the region encompassing the HGS were developed from published and unpublished literature sources, including Montana Bird Distribution Committee (1996), Foresman (2001), Holton and Johnson (2003), Maxell *et al*. (2003), Werner *et al*. (2004) and the Montana Natural Heritage Program (MTNHP 2005a, b). For most species, the "region encompassing the HGS project study area" was defined to be a latilong. A latilong is a unit "…formed by successive lines of latitude and longitude, each at one degree intervals…the average dimension of a latilong is 47 miles wide by 69 miles long, representing an average area of 3200 square miles…" (Montana Bird Distribution Committee 1996).

A latilong is sufficiently large enough to encompass a wide variety of fish and wildlife habitats, from alpine or subalpine areas above timberline, to mesic montane forests, to rolling foothills and shortgrass prairies, to fields converted for agricultural production, to urban areas, to streams, rivers and lakes. A comparatively small area within the latilong, such as the HGS project vicinity, would not be expected to support all these habitats.

Therefore, the potential species list for the region could be refined to those species that would be expected to occur in the habitats identified during the field reconnaissance.

For the purposes of this report, "suitable habitat" was considered to be any usable habitat for fish; breeding habitat for amphibians; foraging, security and denning habitats for reptiles and mammals; and preferred breeding/nesting habitats for birds. Consequently, some migrant birds may occur seasonally and may have been recorded in the study area even though "suitable habitat" is not present.

During the field reconnaissance, all fish and wildlife species were recorded by the habitat in which they (or their evidence) were observed.

2.3 ENDANGERED, THREATENED OR SPECIES OF CONCERN

The USFWS (letter from Mark Wilson, field supervisor, Ecological Services, Montana Field Office, dated May 12, 2005) indicated that two species that are listed under the Endangered Species Act of 1973, as amended (ESA), could be present in the action area of the HGS project: bald eagle (*Haliaeetus leucocephalus*) and Canada lynx (*Lynx canadensis*). The USFWS also provided a list of Montana species of concern that could occur within a 10-mile radius of the City of Great Falls (i.e., encompassing the area potentially affected by the HGS), derived from Montana Natural Heritage Program (MTNHP) database. MTNHP (2005b) verified this list, which is presented in Table 2-1.

2.4 CONTACTS/LITERATURE REVIEW

Biologists for appropriate wildlife management agencies, including the MDFWP and USFWS, were contacted for information regarding species occurrence and other relevant information. Landowners of the project site were interviewed regarding certain fish and wildlife species. A brief literature review of biological information applicable to the HGS area was also completed.

Table 2-1. Montana species of concern recorded within 10 miles of Great Falls, Montana.[a]

Species		Suitable Habitat[b]
Common Name	Scientific Name	
Plants		
Roundleaf water hyssop	*Bacopa rotundifolia*	Muddy shores of ponds and streams; last recorded in 1891
Many-headed sedge	*Carex sychnocephala*	Moist meadows; lake shores; thickets at low elevations; last recorded in 1890
Chaffweed	*Centunculus minimus*	Drying vernal pools; last recorded in 1891
	Entosthodon rubiginosus	Moss; last recorded in 1887
	Funaria americana	Moss; last recorded in 1902
Guadalupe water-nymph	*Najas guadalupensis*	Submerged in shallow fresh water of oxbow sloughs and ponds; drying vernal pools; last recorded in 1891
Dwarf woolly heads	*Psilocarphus brevissimus*	Drying vernal pools; last recorded in 1891
California waterwort	*Elatine californica*	Shallow waters and mudflats along the edges of wetlands; last recorded in 1891
Fish		
Blue sucker	*Cycleptus elongatus*	Missouri River below Morony Dam
Amphibians		
None		
Reptiles		
Spiny softshell	*Apalone spinifera*	Missouri River below Morony Dam
Mammals		
None		
Birds		
Ferruginous hawk	*Buteo regalis*	Sagebrush steppe, grasslands with rolling to steep slopes
Bald eagle	*Haliaeetus leucocephalus*	Larger rivers, lakes and reservoirs
Burrowing owl	*Athene cunicularia*	Grasslands with rodent and badger burrows
White-faced ibis	*Plegadis chihi*	Wetlands
Black-crowned night heron	*Nycticorax nycticorax*	Wetlands
Franklin's gull	*Larus pipixcan*	Wetlands
Common tern	*Sterna hirundo*	Wetlands
Black tern	*Chlidonias niger*	Wetlands

[a]Source: MTNHP (2005b) and USFWS letter dated May 12, 2005.
[b]Suitable habitat for animals is defined in Section 2.2.

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Appendix A. Fish and wildlife species potentially occurring in the vicinity of the proposed Highwood Generating Station Project.

Species[a]			Recorded in Project Vicinity[b]	Suitable Habitat in Project Vicinity[c]
FISH				
Acipensiridae				
	Shovelnose sturgeon	*Scaphirhyconus platorynchus*		X
Esocidae				
	Northern pike	*Esox lucius*		X
Hiodontidae				
	Goldeye	*Hiodon alosoides*		X
Catostomidae				
	Shorthead redhorse	*Moxostoma macrolepidotum*		X
	White sucker	*Catostomus commersoni*	X?	X
	Longnose sucker	*Catostomus catostomus*		X
	Mountain sucker	*Catostomus platyrhynchus*		X
	Blue sucker	*Cycleptus elongatus*		X
	Bigmouth buffalo	*Ictiobus cyprinellus*		X
	Smallmouth buffalo	*Ictiobus bubalus*		X
	River carpsucker	*Carpiodes carpio*		X
Cyprinidae				
	Common carp	*Cyprinus carpio*	X	X
	Longnose dace	*Rhinichthys cataractae*		X
	Lake chub	*Couesius plumbeus*		X
	Flathead chub	*Platygobio gracilis*		X
	Fathead minnow	*Pimephales promelas*	X?	X
	Western silvery/plains minnow	*Hybognathus argyritis/placitus*		X
	Emerald shiner	*Notropis atherinodes*		X
Salmonidae				
	Rainbow trout	*Oncorhynchos mykiss*		X
	Brown trout	*Salmo trutta*		X
	Brook trout	*Salvelinus fontinalis*		X
	Mountain whitefish	*Prosopium williamsoni*		X
Ictaluridae				
	Channel catfish	*Ictalurus punctatus*		X
	Stonecat	*Noturus flavus*		X
	Burbot	*Lota lota*		X
Centrarchidae				
	Pumpkinseed	*Lepomis gibbosus*		X
Sciaenidae				
	Freshwater drum	*Aplodonotus grunniens*		X
Cottidae				
	Mottled sculpin	*Cottus bairdi*		X
Percidae				
	Yellow perch	*Perca flavescens*		X
	Walleye	*Stizostedion vitreum*		X
	Sauger	*Stizostedion canadense*		X
AMPHIBIANS				
Caudata				
	Tiger salamander	*Ambystoma tigrinum*		X
Anura				
	Plains spadefoot	*Spea bombifrons*		X
	Great Plains toad	*Bufo cognatus*		X
	Boreal chorus frog	*Pseudacris maculata*		X

Species[a]			Recorded in Project Vicinity[b]	Suitable Habitat in Project Vicinity[c]
	Northern leopard frog	*Rana pipiens*		X
REPTILES				
Testudines				
	Painted turtle	*Chrysemys picta*		X
	Spiny softshell turtle	*Apalone spinifera*		X
Squamata				
	Greater short-horned lizard	*Phrynosoma harnandesi*		X
	Rubber boa	*Charina bottae*		X
	Eastern racer	*Coluber constrictor*		X
	Western hog-nosed snake	*Heterodon nasicus*		X
	Gopher snake	*Pituophis catenifer*	X	X
	Terrestrial gartersnake	*Thamnophis elegans*		X
	Plains gartersnake	*Thamnophis radix*		X
	Common gartersnake	*Thamnophis sirtalis*		X
	Western rattlesnake	*Crotalus viridis*		X
MAMMALS				
Insectivora				
	Masked (common) shrew	*Sorex cinereus*		X
	Montane (dusky) shrew	*Sorex monticolus*		X
	Dwarf shrew	*Sorex nanus*		X
	Northern water shrew	*Sorex palustris*		
	Preble's shrew	*Sorex preblei*		X
Chiroptera[d]				
	Townsend's big-eared bat	*Corynorhinus townsendii*		X
	Big brown bat	*Eptesicus fuscus*		X
	Silver-haired bat	*Lasionycteris noctivagans*		X
	Red bat	*Lasiurus borealis*		X
	Hoary bat	*Lasiurus cinereus*		X
	Western small-footed myotis	*Myotis ciliolabrum*		X
	Long-eared myotis	*Myotis evotis*		X
	Little brown myotis	*Myotis lucifugus*		X
	Long-legged myotis	*Myotis volans*		X
	Yuma myotis	*Myotis yumanensis*		X
Lagomorpha				
	Pika	*Qchotona princeps*		
	Snowshoe hare	*Lepus americanus*		
	White-tailed jackrabbit	*Lepus townsendii*	X	X
	Desert cottontail	*Sylvilagus audubonii*	X	X
	Mountain cottontail	*Sylvilagus nuttallii*		X
Rodentia				
	Beaver	*Castor canadensis*	X	X
	Porcupine	*Erethizon dorsatum*	X	X
	Northern pocket gopher	*Thomomys talpoides*	X	X
	Southern red-backed vole	*Clethrionomys gapperi*		
	Long-tailed vole	*Microtus longicaudus*		
	Meadow vole	*Microtus pennsylvanicus*	X?	X
	Heather vole	*Phenacomys intermedius*		
	Bushy-tailed woodrat	*Neotoma cinerea*		X
	Muskrat	*Ondatra zibethicus*	X	X
	Northern grasshopper mouse	*Onychomys leucogaster*		X
	Deer mouse	*Peromyscus maniculatus*	X	X
	House mouse	*Mus musculus*		X

Species[a]			Recorded in Project Vicinity[b]	Suitable Habitat in Project Vicinity[c]
	Black-tailed prairie dog	*Cynomys ludoviscianus*		
	Yellow-bellied marmot	*Marmota flaviventris*		X
	Eastern gray squirrel	*Sciurus carolinensis*		
	Red squirrel	*Tamiasciurus hudsonicus*		
	Columbian ground squirrel	*Spermophilus columbianus*		
	Richardson's ground squirrel	*Spermophilus richardsonii*	X	X
	Thirteen-lined ground squirrel	*Spermophilus tridicemlineatus*		X
	Yellow-pine chipmunk	*Tamias amoenus*		
	Least chipmunk	*Tamias minimus*	X	X
	Western jumping mouse	*Zapus princeps*		X
Carnivora				
	Coyote	*Canis latrans*	X	X
	Gray wolf	*Canis lupus*		
	Red fox	*Vulpes vulpes*	X	X
	Mountain lion	*Puma concolor*		X
	Lynx	*Lynx canadensis*		
	Bobcat	*Lynx rufus*		X
	Striped skunk	*Mephitis mephitis*	X	X
	Wolverine	*Gulo gulo*		
	Northern river otter	*Lontra canadensis*		X
	Long-tailed weasel	*Mustela frenata*		X
	Least weasel	*Mustela nivalis*		X
	Mink	*Mustela vison*		X
	Badger	*Taxidea taxus*	X	X
	Raccoon	*Procyon lotor*	X	X
	Black bear	*Ursus americanus*		
Artiodactyla				
	Pronghorn	*Antilocapra americana*		X
	Mountain goat	*Oreamnos americanus*		
	Bighorn sheep	*Ovis canadensis*		
	Moose	*Alces alces*		
	Elk	*Cervus elaphus*		
	Mule deer	*Odocoileus hemionus*	X	X
	White-tailed deer	*Odocoileus virginianus*		X
BIRDS[e]				
Gaviiformes				
	Common loon	*Gavia immer*	X	
	Yellow-billed loon	*Gavia adamsii*		
Podicipediformes				
	Eared grebe	*Podiceps nigricollis*		
	Western grebe	*Aechmophorus occidentalis*		
Pelecaniformes				
	American white pelican	*Pelecanus erythrorhynchos*	X	
	Double-crested cormorant	*Phalacrocorax auritus*	X	
Ciconiiformes				
	Great blue heron	*Ardea herodias*	X	
Anseriformes				
	Tundra swan	*Cygnus columbianus*		
	Canada goose	*Branta canadensis*	X	X
	Wood duck	*Aix sponsa*		
	Green-winged teal	*Anas crecca*	X	
	Mallard	*Anas platyrhynchos*	X	X
	Northern pintail	*Anas acuta*		

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Species[a]			Recorded in Project Vicinity[b]	Suitable Habitat in Project Vicinity[c]
	Blue-winged teal	*Anas discors*		X
	Cinnamon teal	*Anas cyanoptera*		
	Northern shoveler	*Anas clypeata*	X	X
	Gadwall	*Anas strepera*		X
	American wigeon	*Anas americana*	X	
	Redhead	*Aythya americana*		
	Ring-necked duck	*Aythya collaris*		
	Lesser scaup	*Aythya affinis*		
	Long-tailed duck	*Clangula hyemalis*		
	Common goldeneye	*Bucephala clangul*a	X	
	Barrow's goldeneye	*Bucephala islandica*		
	Bufflehead	*Bucephala albeola*		
	Common merganser	*Mergus merganser*	X	X
	Ruddy duck	*Oxyura jamaicensis*		
Falconiformes				
	Turkey vulture	*Carthartes aura*		X
	Osprey	*Pandion haliaetus*		X
	Bald eagle	*Haliaeetus leucocephalus*	X	X
	Northern harrier	*Circus cyaneus*		X
	Sharp-shinned hawk	*Accipiter striatus*		
	Cooper's hawk	*Accipiter cooperii*		
	Northern goshawk	*Accipiter gentilis*		
	Swainson's hawk	*Buteo swainsoni*		X
	Red-tailed hawk	*Buteo jamaicensis*	X	X
	Ferruginous hawk	*Buteo regalis*		
	Rough-legged hawk	*Buteo lagopus*		
	Golden eagle	*Aquila chrysaetos*		X
	American kestrel	*Falco sparverius*	X	X
	Merlin	*Falco columbarius*		
	Peregrine falcon	*Falco peregrinus*		
	Gyrfalcon	*Falco rusticolus*		
	Prairie falcon	*Falco mexicanus*		
Galliformes				
	Gray partridge	*Perdix perdix*	X	X
	Ring-necked pheasant	*Phasianus colchicus*	X	X
	Blue grouse	*Dendragapus obscurus*		
	Ruffed grouse	*Bonasa umbellus*		
	Sharp-tailed grouse	*Tympanuchus phasianellus*		X
Gruiformes				
	Sora	*Porzana carolina*		
	American coot	*Fulica americana*		
	Sandhill crane	*Grus canadensis*		
Charadriiformes				
	Killdeer	*Charadrius vociferus*	X	X
	American avocet	*Recurvirostra americana*		
	Willet	*Catoptrophorus semipalmatus*		
	Spotted sandpiper	*Actitis macularia*		X
	Upland sandpiper	*Bartramia longicauda*		X
	Long-billed curlew	*Numenius americanus*	X	X
	Common snipe	*Gallinago gallinago*	X	X
	Franklin's gull	*Larus pipixcan*	X	
	Ring-billed gull	*Larus delawarensis*	X	
	California gull	*Larus californicus*	X	
	Forster's tern	*Sterna forsteri*		

Species[a]			Recorded in Project Vicinity[b]	Suitable Habitat in Project Vicinity[c]
Columbiformes				
	Rock dove	*Columba livia*	X	X
	Mourning dove	*Zenaida macroura*	X	X
Strigiformes				
	Great horned owl	*Bubo virginianus*		X
	Northern pygmy-owl	*Glaucidium gnoma*		
	Short-eared owl	*Asio flammeus*	X	X
	Northern saw-whet owl	*Aegolius acadicus*		X
Caprimulgiformes				
	Common nighthawk	*Chordeiles minor*	X	X
Apodiformes				
	White-throated swift	*Aeronautes saxatalis*		
	Rufous hummingbird	*Selasphorus rufus*		
Coraciiformes				
	Belted kingfisher	*Ceryle alcyon*		X
Piciformes				
	Red-naped sapsucker	*Sphyrapicus nuchalis*		
	Williamson's sapsucker	*Sphyrapicus thyroideus*		
	Downy woodpecker	*Picoides pubescens*		
	Hairy woodpecker	*Picoides villosus*		
	Three-toed woodpecker	*Picoides tridactylus*		
	Black-backed woodpecker	*Picoides arcticus*		
	Northern flicker	*Colaptes auratus*		X
Passeriformes				
	Olive-sided flycatcher	*Contopus borealis*		
	Western wood-pewee	*Contopus sordidulus*		
	Willow flycatcher	*Empidonax traillii*		X
	Least flycatcher	*Empidonax minimus*		X
	Hammond's flycatcher	*Empidonax hammondii*		
	Dusky flycatcher	*Empidonax oberholseri*		X
	Cordilleran flycatcher	*Empidonax occidentalis*		
	Western kingbird	*Tyrannus verticalis*	X	X
	Eastern kingbird	*Tyrannus tyrannus*	X	X
	Horned lark	*Eremophilia alpestris*	X	X
	Tree swallow	*Tachycineta bicolor*	X	X
	Violet-green swallow	*Tachycineta thalassina*		X
	Northern rough-winged swallow	*Steigidopteryx serripennis*		X
	Bank swallow	*Riparia riparia*		X
	Cliff swallow	*Hirundo pyrrhonota*	X	X
	Barn swallow	*Hirundo rustica*	X	X
	Gray jay	*Perisoreus canadensis*		
	Steller's jay	*Cyanocitta stelleri*		
	Blue jay	*Cyanocitta cristata*		
	Western scrub-jay	*Aphelocoma californica*		
	Clark's nutcracker	*Nucifraga columbiana*		
	Black-billed magpie	*Pica pica*	X	X
	American crow	*Corvus brachyrhynchos*	X	X
	Common raven	*Corvus corax*	X	X
	Black-capped chickadee	*Parus atricapillus*		X
	Mountain chickadee	*Parus gambeli*		
	Red-breasted nuthatch	*Sitta canadensis*		
	White-breasted nuthatch	*Sitta carolinensis*		
	Brown creeper	*Certhia americana*		
	Rock wren	*Salpinctes obsoletus*		X

Species[a]			Recorded in Project Vicinity[b]	Suitable Habitat in Project Vicinity[c]
	House wren	*Troglodytes aedon*	X	X
	American dipper	*Cinclus mexicanus*		
	Golden-crowned kinglet	*Regulus satrapa*		
	Ruby-crowned kinglet	*Regulus calendula*		
	Eastern bluebird	*Sialia sialis*		
	Mountain bluebird	*Siala currucoides*	X	X
	Townsend’s solitaire	*Myadestes townsendi*		
	Veery	*Catharus fuscescens*		
	Swainson’s thrush	*Catharus ustulatus*		
	Hermit thrush	*Catharus guttatus*		
	American robin	*Turdus migratorius*	X	X
	Varied thrush	*Ixoreus naevius*		
	Gray catbird	*Dumetella carolinensis*		X
	American pipit	*Anthus rubescens*		
	Sprague’s pipit	*Anthus spragueii*		
	Bohemian waxwing	*Bombycilla garrulus*		
	Cedar waxwing	*Bombycilla cedrorum*		
	Northern shrike	*Lanius excubitor*		
	European starling	*Sturnus vulgaris*	X	X
	Solitary vireo	*Vireo solitarius*		
	Warbling vireo	*Vireo gilvus*		
	Red-eyed vireo	*Vireo olivaceus*		
	Orange-crowned warbler	*Vermivora celata*		
	Yellow warbler	*Dendroica petechia*	X	X
	Yellow-rumped warbler	*Dendroica coronata*		
	Townsend’s warbler	*Dendroica townsendi*		
	American redstart	*Setophaga ruticilla*		
	Ovenbird	*Seiurus aurocapillus*		
	MacGillivray’s warbler	*Oporornis tolmiei*		
	Common yellowthroat	*Geothlypis trichas*	X	X
	Yellow-breasted chat	*Icteria virens*		X
	Western tanager	*Piranga ludoviciana*		
	Rose-breasted grosbeak	*Pheucticus ludovicianus*		
	Black-headed grosbeak	*Pheucticus melanocephalus*		
	Lazuli bunting	*Passerina amoena*		X
	Spotted towhee	*Pipilo maculatus*	X	X
	American tree sparrow	*Spizella arborea*		
	Chipping sparrow	*Spizella passerina*		
	Clay-colored sparrow	*Spizella pallida*	X	X
	Brewer’s sparrow	*Spizella breweri*		
	Field sparrow	*Spizella pusilla*		
	Vesper sparrow	*Pooecetes gramineus*	X	X
	Lark sparrow	*Chondestes grammacus*		X
	Black-throated sparrow	*Amphispiza bilineata*		
	Lark bunting	*Calamospiza melanocorys*		
	Savannah sparrow	*Passerculus sandwichensis*	X	X
	Song sparrow	*Melospiza melodia*		
	Lincoln’s sparrow	*Melospiza lincolnii*		
	White-crowned sparrow	*Zonotrichia leucophrys*		
	Harris’ sparrow	*Zonotrichia querula*		
	Dark-eyed junco	*Junco hyemalis*		
	Lapland longspur	*Calcarius lapponicus*		
	Snow bunting	*Plectrophenax nivalis*		
	Bobolink	*Dolichonyx oryzivorus*		X

Species[a]			Recorded in Project Vicinity[b]	Suitable Habitat in Project Vicinity[c]
	Red-winged blackbird	*Agelaius phoeniceus*	X	X
	Western meadowlark	*Sturnella neglecta*	X	X
	Yellow-headed blackbird	*Xanthocephalus xanthocephalus*		
	Brewer's blackbird	*Euphagus cyanocephalus*	X	X
	Common grackle	*Quiscalus quiscula*	X	X
	Brown-headed cowbird	*Molothrus ater*	X	X
	Northern oriole	*Icterus bullockii*		X
	Gray-crowned rosy-finch	*Leucosticte tephrocotis*		
	Pine grosbeak	*Pinicola enucleator*		
	Cassin's finch	*Carpodacus cassinii*		
	House finch	*Carpodacus mexicanus*		X
	Red crossbill	*Loxia curvirostra*		
	Pine siskin	*Carduelis pinus*		
	American goldfinch	*Carduelis tristis*	X	X
	Evening grosbeak	*Coccothraustes vespertinus*		
	House sparrow	*Passer domesticus*	X	X

[a]Distribution and nomenclature according to Holton and Johnson (2003), Werner *et al*. (2004), Foresman (2001), Montana Bird Distribution Committee (1996), Montana Natural Heritage Program (2005a).
[b]Current study.
[c]Habitat availability according to Hart *et al*. (1998). For the purposes of this report, "suitable habitat" = breeding habitat for amphibians; foraging, security and denning habitats for reptiles and mammals; and preferred breeding/nesting habitats for birds. Consequently, some migrant birds may occur seasonally, and may have been recorded in the study area even though "suitable habitat" is not present.
[d]Because of their considerable mobility, "suitable habitat" for bats (Chiroptera) included foraging habitat even if roosting habitat was not available.
[e]Project region for birds = latilong 17, quarter-latilong D and latilong 18, quarter-latilong C (Montana Bird Distribution Committee 1996, Montana Natural Heritage Program 2005a).

APPENDIX F
FINAL DRAFT BIOLOGICAL ASSESSMENT

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BIOLOGICAL ASSESSMENT*

for the proposed

Highwood Generating Station
Great Falls, Montana

United States Department of Agriculture
Rural Development, Utilities Programs
1400 Independence Ave., SW, Stop 1571
Washington, D.C. 20250

January 2007

*This Final Draft Biological Assessment has been submitted to the U.S. Fish and Wildlife Service. It is now under review by the Service and their Biological Opinion is pending.

CONTENTS

FIGURES

SUMMARY

Determination of Effects

Implementation of the proposed federal action WILL HAVE NO EFFECT on the threatened Canada lynx, and MAY AFFECT, BUT IS NOT LIKELY TO ADVERSELY AFFECT the threatened bald eagle.

Consultation Requirements

In accordance with the Endangered Species Act of 1973, as amended (ESA), and its implementation regulations, the U.S. Department of Agriculture (USDA) Rural Utilities Service (RUS) is required to request written concurrence from the United States Fish and Wildlife Service (FWS) with respect to determinations of potential effects on the threatened bald eagle and threatened Canada lynx.

Need For Reassessment Based On Changed Conditions

The Biological Assessment findings are based on the best current data and scientific information available. A revised Biological Assessment must be prepared if: (1) new information reveals effects which may impact threatened, endangered or proposed species or their habitats in a manner or to an extent not considered in this assessment; (2) the proposed action is subsequently modified in a manner that causes an effect, which was not considered in this assessment; or (3) a new species is listed or habitat identified, which may be affected by the action.

INTRODUCTION

Southern Montana Electric Generation and Transmission Cooperative, Inc. (SME) proposes to build a 250-megawatt (MW) coal-fired power plant called the Highwood Generating Station (HGS) and 6 MW of wind generation at a site near Great Falls, Montana. SME has applied for a loan guarantee to construct the HGS from the RUS. SME has also applied for an air quality permit and other applicable permits and licenses which are administered by the Montana Department of Environmental Quality (DEQ). The loan application constitutes a federal action, and the RUS is the federal action agency under the ESA. Under various provisions of the ESA, the RUS must conduct a Biological Assessment (BA) to identify whether these species are present in the area of effect, and insure that any action authorized, funded, or implemented by the RUS is not likely to: (1) adversely affect listed species or designated critical habitat; (2) jeopardize the continued existence of proposed species; or (3) adversely modify proposed critical habitat.

In accordance with Section 7(c) of the ESA, the FWS (letter from Mark Wilson, Field Supervisor, Ecological Services, Montana Field Office, dated May 12, 2005) determined

P-0019345

that two species, both listed as threatened under the ESA, could be in the area of the proposed HGS: Canada lynx (*Lynx canadensis*) and bald eagle (*Haliaeetus leucocephalus*). No species listed as endangered, proposed for listing, or candidates for listing under the ESA were identified.

In accordance with the National Environmental Policy Act (NEPA), RUS and DEQ issued a Draft Environmental Impact Statement (DEIS) for the HGS in June 2006. This Biological Assessment analyzes the potential effects of the proposed federal action identified in the DEIS to the Canada lynx and bald eagle.

PROPOSED PROJECT

Project Description

The proposed HGS would consist of a 250-MW (net) generating station utilizing Circulating Fluidized Bed (CFB) technology to burn coal, and four 1.5-MW wind turbines. The HGS would be built at a location called the Salem site, located in Sections 24 and 25, T21N R5E about eight miles east of the city of Great Falls in Cascade County, Montana (Figure 1). Elevation at the site is approximately 3320 feet above sea level.

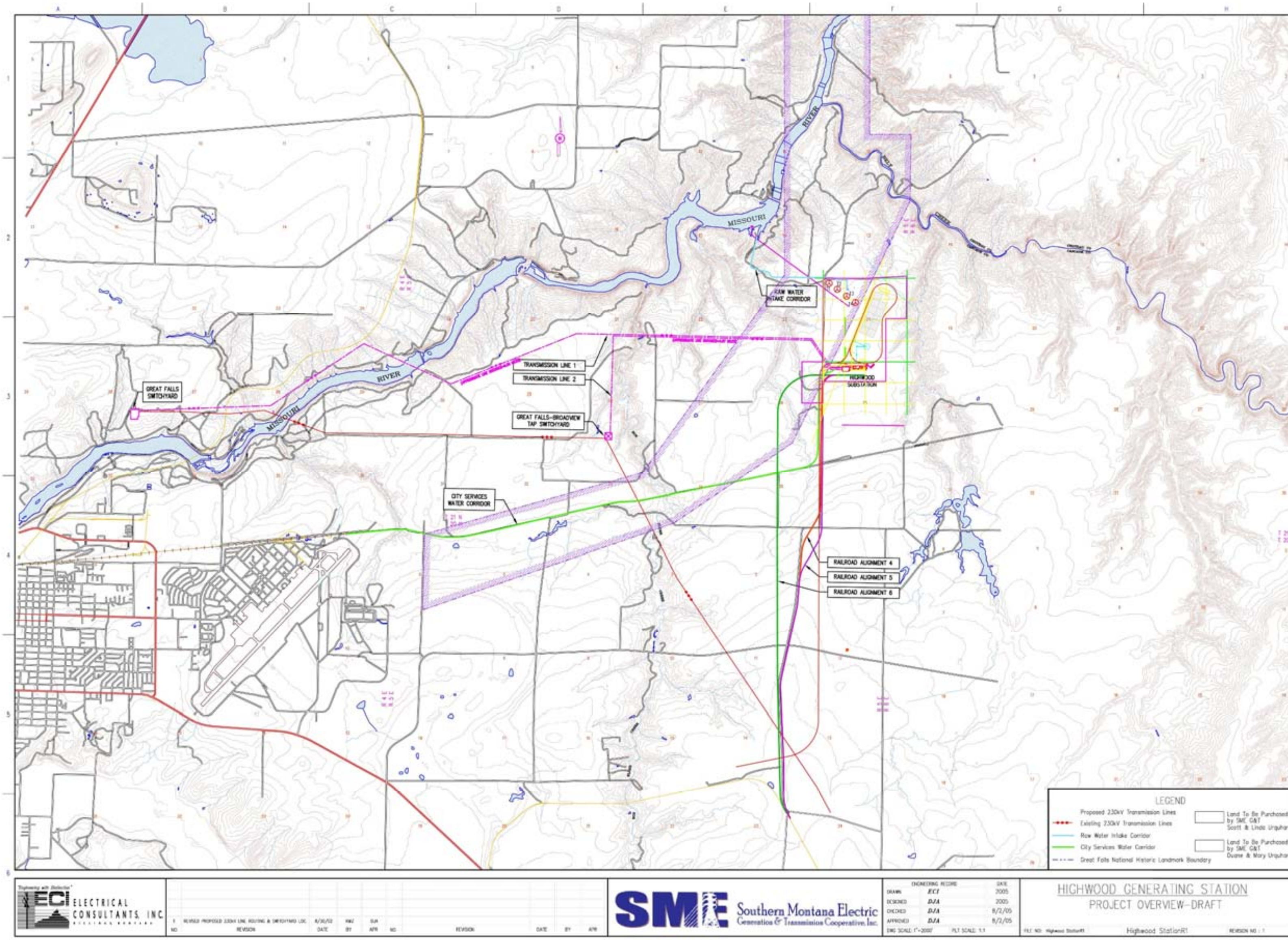
The HGS would consist of a CFB boiler, steam turbine generator, water-cooled condenser, wet cooling tower, hydrated ash reinjection or equivalent flue gas desulfurization (FGD) system, selective non-catalytic reduction process, baghouse, and material handling system. An activated carbon injection system could be installed and operated if necessary for mercury control. Ash from the coal combustion process would be handled dry and be disposed of onsite in an engineered monofill, lined with clay.

Under peak operating conditions, the plant would withdraw and use approximately 3200 gallons of water per minute from the Missouri River for cooling. Sub-bituminous coal would be purchased from existing permitted mines in southeastern Montana and would be delivered approximately twice per week in 110-car unit trains. Limestone and ammonia would be used to reduce air pollutants. Limestone would be purchased from an existing permitted mine and would be delivered to the HGS by truck or train. Anhydrous ammonia would also be delivered by truck or train.

Construction is estimated to take about 48 months from the start of preliminary engineering to commercial operation of the plant. Site grading and preparation would require about two months and would be followed by foundation construction, which would require about one year. Boiler and baghouse construction would begin about five months after foundation construction begins and would be completed in about two years. Construction of the four wind turbines would occur concurrently. The towers are anticipated to be 262 feet high at the rotor. Each wind turbine would have three blades, with an overall diameter of 250-270 feet, or a radius of 125-135 feet. Thus the total height of the structures would be approximately 400 feet.

In addition to the HGS and wind turbines on the Salem site, a rail spur, raw water intake at Morony Reservoir, raw water pipeline, two 230kV transmission lines, a switchyard, potable and wastewater lines and access roads would be built (Figure 1).

Figure 1. Vicinity map of Highwood Generating Station, Salem Site.



Project Area

The project area and its biological resources were thoroughly described in Section 3.4 and Appendix F of the DEIS. Those descriptions are hereby incorporated by reference.

SPECIES ASSESSMENT

Canada Lynx (*Lynx canadensis*)

Population and Habitat Status

Project Within Known Lynx Range	Lynx Activity In Project Area	Foraging Habitat Available in Project Area	Denning Habitat Available in Project Area
No	No	No	No

Lynx have been documented in Cascade County (Foresman 2001), but not in or near the vicinity of the proposed HGS Salem site (MTNHP 2006). Lynx have not been reported within 10 miles of the project vicinity (MTNHP 2005). The FWS has proposed a rule to designate critical habitat for the lynx; the final critical habitat designation is due in November 2006. There will be no designated critical habitat near the proposed HGS project.

The lynx is a denizen of the boreal forest (Foresman 2001). Its range and habitat is closely associated with that of its primary winter prey, the snowshoe hare (*Lepus americanus*) (Koehler and Aubrey 1994); snowshoe hare habitat does not overlay the proposed HGS site (Hart et al. 1998). In Montana east of the Continental Divide, lynx habitat is subalpine forests above 5400 feet (the HGS site is approximately 3320 feet), dominated by subalpine fir (*Abies lasiocarpa*); secondary habitat is intermixed Engelmann spruce (*Picea engelmannii*) and Douglas-fir (*Pseudotsuga menziesii*) habitat types where lodgepole pine (*Pinus contorta*) is a major seral species (MTNHP 2006). Den sites tend to be in mature or old-growth forest stands with a high density of downed logs (Koehler and Aubrey 1994). Foraging habitat ranges from forest edge to clearings, young forests, fire areas, etc.; however, they avoid large open habitats (MTNHP 2006). Neither foraging nor denning habitat is available in or near the proposed HGS Salem site.

Direct, Indirect and Cumulative Effects Analysis

Lynx are not known to occur in or near the project area. There is no proposed designated critical habitat at or near the project area. The project area does not contain suitable habitat for foraging or denning. Therefore the proposed HGS project would have no adverse effects on the Canada lynx.

Determination of Effects

Implementation of the proposed federal action would have NO EFFECT on the Canada lynx, based on the analysis provided above.

Recommendations for Removing, Avoiding, or Compensating Adverse Effects

No adverse effects are expected.

Bald Eagle (*Haliaeetus leucocephalus*)

Population and Habitat Status

Project Within Known Bald Eagle Range	Project Within 2.5 Miles of Known Bald Eagle Nest	Project Within 2.5 Miles of Known Bald Eagle Roost	Known Foraging Habitat At or Near Project Site
Yes	Yes	No	No

The FWS has proposed removal of the bald eagle from the list of threatened species under the ESA; the bald eagle population is considered "recovered," and the bald eagle will continue to be protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act (71 FR 8238, February 16, 2006). For example, in 2005 there were 396 current bald eagle territories in Montana, compared to 31 in 1980; there were 49 territories in the region encompassing the proposed HGS project (Dubois 2006).

There is a bald eagle nest site near the confluence of Belt Creek and the Missouri River, approximately one mile downstream from Morony Dam (Kristi Dubois, native species coordinator, Montana Department of Fish, Wildlife and Parks, personal communication, May 18, 2005). Depending on the final configuration of the HGS, the site would be about 3.0 miles from the plant and about 2.3 miles from the nearest proposed ash pile. The site is about 1.7 miles from the proposed raw water pipeline intake on the Missouri River above Morony Dam. The nest site elevation is about 2800 feet, about 500 feet lower than the HGS site and about 100 feet lower than the raw water intake site. The nest is not visible from either site. The nest was inactive in 2004 (Kristi Dubois, personal communication, May 4, 2005) but was active in 2005 and produced one young (Graham Taylor, personal communication, June 27, 2005) and was again active in 2006, producing one young (Graham Taylor, personal communication, October 18 and November 3, 2006). The nest site was visited on November 22, 2006; the branch supporting the nest had apparently broken during the summer, and the nest remnants were on the ground below the tree. There are no other known bald eagle nests or territories upstream from Belt Creek to the City of Great Falls (Graham Taylor, personal communication, June 27, 2005).

The Montana Bald Eagle Management Plan (MBEWG 1994) provides guidelines for management activities in three zones established around an active bald eagle nest: Zone I (Nest Site Area) includes the area within 0.25 mile of an active nest; Zone II (Primary Use Area) encompasses the area between 0.25 and 0.50 mile from an active nest; Zone III (Home Range) is defined as including all suitable foraging habitats within 2.5 miles of all nests that have been active within five years. This zone is managed to maintain suitability of foraging habitat, minimize disturbance within key areas, minimize hazards, and maintain the integrity of the breeding area. Depending on final configuration, a small part of the proposed HGS Salem site would be within Zone III of the known nest site;

however, the HGS would be located in an area with no potential nest habitat, no perch trees, no screening vegetation that would attract bald eagles, and that is not visible from the nest site. Habitat at the proposed site is grain fields (see Figures 2-21 and 2-22 on page 2-47 of the DEIS) that would not be considered attractive foraging habitat for bald eagles.

The raw water intake would be located about 0.4 mile upstream from Morony Dam, which in turn is about 1.3 miles upstream from the nest site (within nest management Zone III), i.e., Morony Dam and its associated facilities are between the site and the raw water intake. The raw water intake would consist of a lateral pipe that would extend into Morony Reservoir; a passive intake screen installed on the end of the pipe to prevent sediment, debris and fish from entering the system; a below-grade concrete sump (vertical cylinder) located outside the floodplain to collect water from the pipe; and a small pump house placed on top of the sump and located approximately on grade, which would contain two pumps to pump water through a buried pipeline to the plant site (Figure 1). Although the raw water intake site is adjacent to bald eagle foraging habitat in Morony Reservoir (see Figure 2-26 on page 2-51 of the DEIS), the site does not support suitable trees for nesting or communal roosts.

As part of the delisting process, the FWS has also developed draft bald eagle management guidelines (FWS 2006). The proposed HGS plant site would fall within "Category B" of these guidelines, i.e., building construction of three or more stories/building construction where the footprint is larger than 0.5 acre: if there is no similar activity within one mile of the nest, and if the activity will not be visible from the nest, the recommended offset distance for construction from the nest is 660 feet (0.125 mile). Clearing, external construction and landscaping should be done outside the nesting season (defined as January-August for Montana).

The proposed raw water intake site would fall under "Category A" of these guidelines, i.e., alteration of shorelines/construction of roads and linear facilities: if there is no similar activity within one mile of the nest, and if the activity will not be visible from the nest, the recommended offset distance for construction from the nest is 330 feet (0.06 mile). Clearing, external construction and landscaping should be done outside the nesting season (defined as January-August for Montana).

Bald eagles also stop during migration and winter along the Missouri River, where they prey on fish and waterfowl, and feed on carrion. There may be more bald eagles along the Missouri River in the HGS project area during these periods than during nesting season. Likely concentration areas would include sites that would also concentrate prey, such as below dams or other areas of open water. However, there are no known communal roosts in the project vicinity.

Direct, Indirect and Cumulative Effects Analysis

Construction of the HGS may cause minimal, short-term displacement/disturbance of transitory bald eagles. Depending on final configuration, most of the HGS would be farther than 2.5 miles from, and not visible from, the only known bald eagle nest site in the general area, nor would the HGS be placed in either known or potentially attractive foraging habitat. Therefore, disturbance to nesting eagles during construction and operation of the HGS should be minimal, as suggested by information provided in both the Montana and FWS bald eagle management guidelines.

Construction of the raw water intake at Morony Reservoir could result in short-term increases in turbidity near the site, which could affect bald eagle foraging. Although the intake would be about 1.3 miles from the known nest site, it would not be visible from the nest site and, once constructed, would create negligible long-term above-ground disturbance. Therefore this impact should be minimal.

Construction of the rail spur and access roads should not affect bald eagles, but there would be a potential for increased wildlife mortality from vehicles or trains during construction and operation. Bald eagles could be attracted to this carrion, which would increase the potential for vehicle or train strikes. However, the rail spur and access roads would be constructed in agricultural habitats, primarily grain fields. Consequently, the wildlife mortality associated with these facilities would likely be low, and thus potential impact to bald eagles would also be expected to be low. Also, in an effort to minimize mortality to bald eagles and other scavenging wildlife, SME would monitor and remove carrion as described below.

Construction, operation and maintenance of transmission lines could potentially affect bald eagles either by wire strikes (particularly at the proposed crossing of the Missouri River) or electrocution. There are several existing transmission lines in the general vicinity, including several that cross the river in the reach from the Great Falls substation to Morony Dam, and no known wire strikes, electrocutions or other hazards to bald eagles have been reported. Therefore this impact would be expected to be low.

The four wind turbines would be constructed at the HGS Salem site, which is not known as potentially attractive bald eagle foraging habitat. The design of the proposed HGS wind turbines (low-speed and tubular construction) has a substantially lower bird strike rate than earlier, smaller lattice-supported wind turbine generators with faster moving blades. However, there is still a potential for collisions with the stationary towers or spinning blades. The FWS guidelines (FWS 2006) recommend that wind turbines and high voltage transmission lines be sited away from bald eagle communal roost sites to avoid collisions, where feasible; and that industry-accepted measures be employed to prevent birds from being electrocuted on structures.

Determination of Effects

Implementation of the proposed federal action MAY AFFECT, BUT IS NOT LIKELY TO ADVERSELY AFFECT the bald eagle, based on the following rationale:

The proposed HGS Salem plant site does not constitute attractive bald eagle habitat, and there is no known bald eagle use of the site. Any use of the site is most likely by transitory birds. There are no known communal roosts in the area affected by the proposed project. There is one known nest/territory, located more than one mile from any proposed activity associated with the project. No proposed activity would be visible from the nest. Most potential impacts associated with construction of the project, such as increased turbidity in the Missouri River (bald eagle foraging habitat) would be minor and short-term.

The greatest potential impacts from construction and operation of the project would be associated with transmission lines (electrocution and wire strikes, particularly at the transmission line crossing of the Missouri River), wind turbines (collisions with towers or spinning blades), and vehicle or train strikes associated with access roads and the proposed rail spur. However, there have been no reports of bald eagle strikes at other transmission lines across the Missouri River in the same general area.

Most avian-safe transmission design and construction practices were developed for use with distribution voltage structures where special structure design including longer cross arms and additional phase spacing was required to obtain a minimum of 60” between energized conductors and grounded hardware. High voltage transmission line design and construction is intrinsically avian-safe using the 60” minimum spacing guideline. The 230kV transmission lines proposed for HGS are designed as single pole structures utilizing alternating supported post construction. Because of NESC clearance requirements, the minimum phase-to-phase distance in any direction will be 17’-0” and the minimum phase-to-ground distance in any direction will be 8’-0”.

For the proposed Missouri River transmission line crossing, the design will likely employ visibility enhancing devices in the form of marker balls placed intermittently on the uppermost conductor in varying configurations. This requirement will most likely be dictated by the FAA, but inclusion of these devices will also serve to reduce the risk of avian collision with the new lines.

The proposed wind turbines would not be constructed in an area of known bald eagle use or any known bird migration pathway, and the proposed access roads and rail spur would be constructed through habitat (agricultural fields) that is unlikely to produce substantial amounts of carrion that may attract bald eagles.

Recommendations for Removing, Avoiding, or Compensating Adverse Effects

The following measures are recommended to remove or avoid the potential adverse effects discussed above:

- During construction of the HGS project, no activity would occur within 660 feet of the known nest site/territory at the confluence of Belt Creek and the Missouri River during the bald eagle breeding/nesting/fledging season (January through August);

- During operation of the project, SME would comply with all federal and state permits for air quality, water quality, solid waste and other resources that could potentially adversely affect bald eagles;
- Transmission lines would be constructed and maintained according to industry-established best practices to avoid or minimize electrocutions and wire strikes (APLIC and USFWS 2005);
- Wind turbines would be constructed, to the extent practicable, according to USFWS (2003) guidelines;
- Carrion would be defined as a dead animal too large for a bald eagle to carry in flight, i.e., bigger than a jackrabbit. Once every two weeks, or whenever reported to SME (whichever is shorter), SME would patrol access roads and the rail spur and remove carrion to a site where vehicle or train strikes would not occur.

CONSULTATION

11/9/2004: Letter from Mark Wilson, Field Supervisor, Ecological Services, Montana Field Office, U.S. Fish and Wildlife Service, providing a list of endangered or threatened species that could potentially occur in the HGS project area, and a discussion of requirements for a BA.

3/18/2005: Meeting between Mark Wilson (Field Supervisor) and Sierra Harris (Biologist), Ecological Services, Montana Field Office, U.S. Fish and Wildlife Service; Jeff Chafee, Bison Engineering, Inc.; Patrick Farmer, WESTECH Environmental Services, Inc.; and Kenneth Reich, Esq. (via telephone conference), Perkins, Smith and Cohen, LLP; regarding the HGS project, schedule for a BA, and coordination with USFWS during BA preparation.

5/4/2005: Email from Kristi Dubois, Native Species Coordinator, Montana Department of Fish, Wildlife and Parks, to members of the Montana Bald Eagle Working Group, containing nest productivity results from 2004.

5/10/2005: Phone conversation between Sierra Harris, Ecological Services, Montana Field Office, U.S. Fish and Wildlife Service and Patrick Farmer, WESTECH, regarding letter with updated list of endangered or threatened species for the HGS project BA.

5/12/2005: Letter from Mark Wilson, Field Supervisor, Ecological Services, Montana Field Office, U.S. Fish and Wildlife Service, providing an updated list of endangered or threatened species that could potentially occur in the HGS project area, and a discussion of requirements for a BA.

5/18/2005: Email from Kristi Dubois, Native Species Coordinator, Montana Department of Fish, Wildlife and Parks, to Patrick Farmer of WESTECH discussing location and monitoring of bald eagle nest at mouth of Belt Creek.

6/27/2005: Email from Graham Taylor, Wildlife Manager, Montana Department of Fish, Wildlife and Parks, to Patrick Farmer of WESTECH regarding 2005 nesting activity at bald eagle nest at mouth of Belt Creek, and other wildlife activity in HGS project vicinity.

1/31/2006: Phone conversation between Cory Loecker, Area Wildlife Biologist, Montana Department of Fish, Wildlife and Parks, and Patrick Farmer, WESTECH, regarding location of bald eagle nest on Belt Creek and other wildlife activity in the HGS project vicinity.

6/21/2006: Phone conversation between Katrina Dixon (replaced Sierra Harris), Ecological Services, Montana Field Office, U.S. Fish and Wildlife Service and Patrick Farmer, WESTECH, regarding HGS project, history of BA preparation to date.

9/11/2006: Email summary of phone conversation between Katrina Dixon, Ecological Services, Montana Field Office, U.S. Fish and Wildlife Service and Patrick Farmer, WESTECH, regarding BA: "I finally spoke with Katrina Dixon of the USFWS re: the Highwood Generating Station project, and whether or not a BA would be required. It was my understanding that Ms. Dixon had not reviewed the DEIS for the project. I described the situation, i.e., that the EIS concluded that there would be no adverse effects from the project on the bald eagle or Canada lynx. I relayed RUS' question about whether or not a BA would be necessary.

Ms. Dixon told me that if the project is considered a major construction activity under Section 7(c) of the ESA (which it is), a BA is required as a procedural matter even if the project would not have not significant impacts an ESA species. There is a bit of a grey area here in that, if the DEIS used ESA language, e.g. "is not likely to adversely affect," then the DEIS could theoretically be used as a BA if the other requirements for a BA are also addressed. So we reviewed the language used in the DEIS. Ms. Dixon stated (and I agree) that the language used for the bald eagle on page 4-59 of the DEIS ("If these precautions are adhered to, the project would have no adverse effect on bald eagles") sounds like the ESA equivalent of "may affect, not likely to adversely affect" which requires a BA.

Ms. Dixon also indicated that a BA would be a prudent course of action, that the USFWS is more comfortable with a BA to review than reviewing and commenting on "fragments of a BA" presented in a DEIS.

Ms. Dixon emailed the language the USFWS uses in its ESA letters (which is the same language that was used in the HGS letter) for the preparation of a BA.

In summary, it was my impression that the RUS could more formally approach the USFWS about substituting the DEIS for a BA, but it was my impression that the USFWS would be uncomfortable with this approach. The easiest approach, from the USFWS' point of view, would be to submit a BA and request a letter of concurrence."

9/22/06: Phone conversation between Richard Fristik (USDA-RD) and Katrina Dixon (USFWS Helena Office). Ms. Dixon provided clarification on the determinations of "may affect" and "no affect", and the follow-on actions that each requires. She said that language in the HGS DEIS ("if these precautions are adhered to, the project would have no adverse effect on bald eagles."; P. 4-59), was interpreted by her agency as sating that there is a chance of an adverse effect. Ms. Dixon said even if there is a slight chance of an effect, a BA is necessary. Fristik raised the possibility of the DEIS itself (section on endangered/threatened species impacts) serving as the BA; Dixon reiterated that her agency's preference was for a stand alone BA, versus trying to locate the pertinent language in the EIS. Based on this discussion, USDA-RD undertook preparation of a BA for the HGS.

10/18/2006: Phone conversation between Graham Taylor, Wildlife Manager, Montana Department of Fish, Wildlife and Parks, and Patrick Farmer of WESTECH regarding 2006 nesting activity at bald eagle nest at mouth of Belt Creek.

11/3/2006: Email from Graham Taylor, Wildlife Manager, Montana Department of Fish, Wildlife and Parks, to Patrick Farmer of WESTECH providing exact location of bald eagle nest at mouth of Belt Creek.

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APPENDIX G
CULTURAL RESOURCES INVENTORY AND EVALUATION

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SOUTHERN MONTANA ELECTRIC GENERATION AND TRANSMISSION COOPERATIVE'S HIGHWOOD GENERATING STATION CASCADE COUNTY, MONTANA

CULTURAL RESOURCE INVENTORY AND EVALUATION

Renewable Technologies, Incorporated
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P-0019361

Southern Montana Electric Generation and Transmission Cooperative's Highwood Generating Station, Cascade County, Montana: Cultural Resource Inventory and Evaluation

Prepared by:

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Submitted to:

Bison Engineering, Inc.
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Helena, MT 59601

December 2005

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INTRODUCTION

Southern Montana Electric Generation and Transmission Cooperative (SME) has proposed to construct a coal-fired electric generating station and associated railroad, electric transmission, and water pipeline facilities in the vicinity of Great Falls in Cascade County, Montana. SME is preparing to submit environmental permit applications to the Montana Department of Environmental Quality (MDEQ) and other agencies seeking permission to construct and operate the Highwood Generating Station. The project triggers a Montana Environmental Policy Act (MEPA) review. Because federal funding will be provided through the US Department of Agriculture Rural Utilities Service (RUS), an environmental analysis under the National Environmental Policy Act (NEPA) is required as well. RUS and MDEQ are preparing a joint Environmental Impact Statement (EIS) that will address both NEPA and MEPA requirements.

Section 106 of the National Historic Preservation Act, as well as related federal and state regulations, requires SME to determine if significant cultural resources lie within the project area. Bison Engineering, Inc., the firm contracted by SME to coordinate the environmental compliance effort, subcontracted with RTI to complete all required cultural resource fieldwork and associated documentation. Portions of RTI's final report will be available for support of, and integration into, the project EIS. The purpose of this cultural resource inventory report is to provide baseline data regarding cultural resources that could potentially be impacted by the proposed project.

SME has identified two potential locations to construct its coal-fired generation plant. The preferred Highwood Generating Station plant site (referred to hereafter as the HGS) is located northeast of Great Falls in Sections 24 and 25, Township 21 North, Range 5 East. An alternate site is the Great Falls Industrial Park, located about 1 mile north of Black Eagle in Section 30, Township 21 North, Range 4 East. The former plant site is currently in use as a privately-owned dry-land wheat farm, while the latter is controlled by the Great Falls Development Authority.

Proposed developments at the plant site locations will encompass approximately 320 acres. Improvements will include construction of boilers and an accompanying turbine-generator, pollution control equipment, solid waste storage facilities, and associated infrastructure. In addition to the plant developments, SME proposes to construct limited transmission facilities necessary for interconnecting HGS to the NorthWestern Energy (NWE) network transmission system at NWE's Great Falls Substation. Contemplated transmission facilities include two sections of new transmission line of approximately 9.2 and 4.1 miles, respectively, a 1.6-mile-long raw water intake line, a 7.4-mile-long fresh- and waste-water pipeline, and a 6.1-mile-long rail spur (Figure 1).

This figure is a GIS generated 11x17 map.
See the PDF format version located in a separate file.

Figure 1. Project area location map.

Because the Great Falls Industrial Park is currently considered an alternate plant site, the specific locations and lengths of connections for that facility have not been formally identified. If SME chooses that site for development, the connections will presumably be slightly shorter in overall length than those for the HGS. That is due primarily to the Industrial Park's closer proximity to existing infrastructure at Great Falls.

RTI completed a cultural resource inventory encompassing 1180 acres in 2005. The inventoried acreage covers the proposed HGS plant site and 250-foot-wide corridors encompassing its rail spur, electric transmission lines, and water intake and discharge pipelines. Wood (2004) inventoried the Great Falls Industrial Park in its entirety in 2004 and RTI did not, therefore, resurvey that portion of the project area.

To date, ten cultural properties have been identified within SME's proposed project area. Five of those were documented during previous cultural resource projects and RTI revisited them in 2005 to gather additional information concerning their contents and integrity. The remainder are newly-identified sites that were recorded, or noted, by RTI in 2005. This report documents the results of RTI's cultural resource inventory. The environmental and cultural settings of the project area are presented in the next sections. Those are followed by discussions of RTI's research methods and the inventory results. A brief project summary is provided at the end of the report. All site forms, amendments, and a Cultural Resources Annotated Bibliography Systems (CRABS) form are included in attached appendices.

ENVIRONMENTAL OVERVIEW

The project area lies near the Missouri River in the vicinity of Great Falls. Locally, the Missouri River and its tributaries have cut deep, narrow canyons within the surrounding uplands. The resulting landscape is characterized by broad, undulating uplands cross-cut by steep-sided canyons and coulees (Figure 2). Mean elevation at river-level is less than 3000 feet, while the prairie to the south slopes upward to over 3600 feet.

Sandstone and shale associated with the Cretaceous-age Kootenai Formation underlies the area (Alt and Hyndman 1997:305-306). Pleistocene glaciers did not extend as far south as the project area, however, they did back up the flow of the Missouri River forming a massive lake referred to as Glacial Lake Great Falls. It inundated a vast expanse of plains south of the present course of the Missouri River to depths up to 600 feet (Alt and Hyndman 1997:267-269). As the lake receded, extensive deposits of unconsolidated sediments were left behind. Those deposits mantle the local sandstone and shale bedrock creating the low, rolling landscape that characterizes the project area today.

The lacustrine sediments exposed within the project area are clay-dominated with few coarse fragments. They are moderately to poorly drained and have high shrink-swell characteristics. Weathering of the local sediments has formed soils which support a variety of native plant species. Regional native vegetation is characterized by shortgrass prairie plants including bunchgrass, prickly pear, yucca, creeping juniper, and widely scattered sagebrush and

Figure 2. The Missouri River canyon near Cochrane Dam. View to the east/northeast.

juniper trees. Localized bands of riparian vegetation occur along the margins of perennial watercourses. In those areas cottonwood, willow, wild rose, and chokecherry growth can be quite dense.

Native vegetation growth is largely restricted to those portions of the project area lying along the Missouri River and within steep canyons and coulees south of the river. Nearly all the prairie land within, and surrounding, the HGS is currently under cultivation, with the primary agricultural crop being wheat (Figure 3).

CULTURAL CONTEXT

Summary of Prehistoric Occupation

There are no previously recorded prehistoric cultural properties within the bounds of SME's proposed project and RTI did not identify any such sites as part of its 2005 inventory. A detailed prehistoric overview is, therefore, beyond the scope of this report. The following brief summary is presented to provide general information about prehistoric occupation in the Great Falls area. The reader may refer to the references provided below to obtain additional information on the subject.

Figure 3. Agricultural land within the proposed HGS plant site. View to the east.

The area surrounding the Great Falls of the Missouri River has been occupied by human populations almost continuously since the late Pleistocene/early Holocene transition and the retreat of Glacial Lake Great Falls (Hoffecker 1994:4). Buried cultural deposits representing the earliest periods of prehistoric occupation have yet to be discovered, however, artifacts found in surface contexts are diagnostic of Paleoindian Period occupations pre-dating 10,000 years before present (BP; Greiser 1989:7). Human populations appear to have expanded during the Middle Prehistoric (7,500 to 1,800 BP) and Late Prehistoric Periods (1,800 to 300 BP) and sites dating to those periods are common (Fredlund 1979:23; Deaver and Deaver 1986:86).

Prehistoric sites in the project vicinity take a range of forms. The most common are lithic scatters containing stone tools and/or reduction debris. Numerous lithic scatters have been documented south of the Missouri River near Great Falls and they are believed to represent the former locations of prehistoric camp sites or tool production workshops (O'Brien and Rechlin 1972:2; Aaberg 1978:1; Historical Research Associates 1988:10-14). Sites containing stone circles and stacked rock cairns are also common (Rossillon et al. 2003:5-8). Stone circles, also referred to as "tipi rings," are circular to ovoid cobble concentrations which many researchers believe mark the former locations of tipis (Kehoe 1960:463). A variety of stacked-rock cairn types occur in the area and they presumably served a range of functions. Cairns were reportedly constructed to mark trails and burials and they also served as components of drive lines for directing game animals toward kill locations (Rossillon et al. 2003:7).

Historic Context

The 10 historic cultural properties within SME's project area include an early exploration route, two hydroelectric power transmission lines, a railroad and associated siding, a public works secondary road, and four farmsteads. The following discussion focuses specifically on providing historical context information for those sites. The reader may refer to numerous other documents (eg. Deaver 1990; Deaver 1991; Deaver and Peterson 1992; Rossillon 1992; Rossillon and Dickerson 2003; Rossillon et al. 2003) to obtain contextual information concerning other site types in the Great Falls area.

Early Exploration Route

Euro-American presence in central Montana commenced at the beginning of the nineteenth century, however, the first incursions into the Great Falls area were largely transitory. Meriwether Lewis compiled the first written descriptions of the region when he, William Clark, and the Corps of Discovery traversed it during their westward voyage to the Pacific Ocean.

In 1804, while the Corps of Discovery was wintering at Fort Mandan in present day North Dakota, Lewis learned of a large waterfall that blocked navigation far upstream on the Missouri River. Based on the available information, he believed that the fall would be a single obstacle that could relatively easily be circumvented. The journey westward from Fort Mandan commenced immediately following the spring thaw in April 1805. Over the ensuing two months, the Corps negotiated its boats upstream on the Missouri River to the mouth of the Marias River and beyond. On June 13th, Lewis and an advance party of four men came upon the largest of the Great Falls' cascades. After sending back word of his discovery to Clark and the main party, Lewis advanced upstream to survey the obstruction. Lewis' reconnaissance of the area revealed that there were multiple falls, at intervals, for several miles within the steep river canyon.

The Corps established a lower portage camp on the south bank of the Missouri River about 1 mile downstream from the mouth of Belt Creek on June 15th. The following day, boats and equipment were moved up Belt Creek about 1.75 miles to a location where the uplands south of the Missouri River canyon could most readily be reached. During the period from June 17th to the 20th, Clark and a detachment of five men surveyed an 18-mile-long portage route spanning from Belt Creek to an upper portage camp at White Bear Islands upstream from the westernmost fall. Meanwhile, Lewis directed the transfer of equipment from lower portage camp to Belt Creek.

The Corps of Discovery constructed two crude wagons to carry canoes and baggage overland to the upper camp. On June 20th, the long overland portage commenced. The arduous journey involved crossing broad expanses of grassland dotted with prickly pear cactus and infested with rattlesnakes. Multiple steep-sided coulees, including Box Elder Creek, had to be traversed by individuals laden with extremely heavy loads. The last of the equipment did not reach White Bear Islands until July 2nd. It took nearly two more weeks for the Corps to construct new boats and pack their remaining equipment. On July 14th, 1805, the Corps of Discovery continued its upstream voyage toward the headwaters of the Missouri (Appleman 1975:309-317).

Hydroelectric Power Transmission Lines

Trappers, traders, ranchers, miners, and missionaries passed through the Great Falls area in the 75 years following Lewis and Clark's portage. Few of them remained long, however, until Paris Gibson established the Great Falls townsite in 1887 (Quivik and McCormick 1988:11). Gibson, and his associate James J. Hill, designed plans for development of an industrial center at Great Falls that would profit from the tremendous hydro power of the Missouri River falls. Their plans came to fruition in short order. By 1890, Great Falls had railroad connections to the north and south and a newly-constructed hydroelectric facility at Black Eagle Falls that powered a state-of-the-art silver smelter located at the eastern edge of town (Rossillon and Dickerson 2003:19-20).

Spurred largely by demands from Butte-area mine and smelter developers for inexpensive power, additional dams and hydroelectric power facilities were constructed. John D. Ryan's Rainbow Falls facility came on line in 1910. Soon thereafter, Ryan and his associates began negotiations to consolidate Montana's major power producers and in 1912 The Montana Power Company (MPC) was formed. Over the ensuing 50 years, MPC constructed the Ryan (1915), Morony (1930), and Cochrane (1958) hydroelectric facilities and it redeveloped and expanded the Black Eagle and Rainbow Falls developments.

Improvements in technology for electrical transmission facilitated expanded development of the Great Falls hydroelectric facilities. Prior to 1890, the technology required for high-voltage transmission was generally not yet developed. Advances in technology occurred after 1890, and by 1910 lines from the Rainbow plant were stepped up to 100 kilovolts (kV; Quivik and McCormick 1988:20, 37). The ability to transfer high energy loads over great distances ultimately allowed Great Falls electricity to be distributed throughout Montana.

In 1915, MPC constructed a 100 kV transmission line connecting the Rainbow and Ryan hydroelectric facilities. Fifteen years later, a similar line, running parallel to the Rainbow line, was constructed connecting the Morony and Rainbow power plants. Those high-voltage interplant lines permitted electric power generated by their respective hydroelectric facilities to be transmitted through MPC's network (Renewable Technologies 1991:Section 7, pp. 21, 24). The increase in available power played an integral part in establishing MPC as Montana's largest utility.

Railroad and Associated Siding

The Milwaukee Road was an established mid-western rail carrier that built westward to the Pacific Ocean during the period from 1906 to 1909. The main line extended from the Great Lakes region to Washington's Puget Sound, entering eastern Montana at Baker and exiting the state near Saltese. At Harlowton, in central Montana, a branch line was constructed northward. The North Montana Line reached Lewistown over existing track, and new track was laid from that point eastward to Great Falls.

Like other branch lines, the North Montana Line's purpose was to link peripheral areas of potential freight traffic with the main railroad. It primarily carried wheat and other grains, products of Great Falls flour mills, and mine products to and from copper and zinc refineries at Black Eagle. The North Montana Line had branches of its own, from Lewistown and northwest of Great Falls.

As with all historic railways, sidings were common along the Milwaukee Road and they served a variety of functions. Some, such as Cooper Siding located east of Great Falls, were ephemeral facilities consisting of little more than a short spur track and a telephone or other communication line (C,M,StP&P 1948). Others, however, had administrative buildings, water towers, and storage facilities. While all sidings served important functions, the latter were the most integral to rail line operations.

Despite high expectations and a relatively long operating history, the Milwaukee Road was plagued with financial difficulties and it endured repeated bankruptcies. In 1980, operations of the main line and its branches west of Miles City were terminated. That year witnessed the disappearance of Milwaukee trains, tracks, and corporate identity in central Montana (McCarter 1992; Martin 2005).

Public Works Secondary Road

Construction of an adequate road system in the Great Falls area lagged far behind hydroelectric and railroad development. As late as the early 1930s, vehicular travel was plagued by poorly-designed roads that received little or no maintenance and were virtually impassible for months. Although the Montana Highway Commission (MHC) had worked toward development of a state highway system for nearly two decades and had devised uniform standards for both road and bridge design, a chronic shortage of funds limited road construction and maintenance projects.

Development of an effective system of highways awaited the coming of the Great Depression in the early 1930s. In order to mitigate economic hardships, the Roosevelt Administration enacted legislation and organized a number of programs intended to put the nation's unemployed to work developing public property at federal expense. The Work Progress Administration provided the bulk of federal funding for MHC highway projects during the Depression era (Axline 1991:6-7; Wyss 1992:48-50). Better known as the WPA, this was a massive employment and economic recovery agency which operated from 1935 to 1943. Under the WPA program, the MHC received federal funds to cover approximately 90 percent of the total costs for road or bridge construction projects (Wyss 1992:51).

All roads developed by MHC during the era of Public Works funding were incorporated into the state highway system. This included primary highways considered essential links between major population centers of the state. Primary highways were built to handle high volumes of traffic. All other roads built by the MHC at this time were deemed secondary roads.

Secondary roads built under the direction of the MHC with Public Works funds exhibit distinctive physical characteristics and design qualities. MHC specified essential features for secondary roads, and provided standards for their construction. In general, MHC recommended that a secondary road have a roadway at least 20 feet in width to accommodate two driving lanes, a graveled driving surface, shoulders at least 1 foot in width, a 1½:1 maximum fill slope, and that the design for the roadway's alignment provide for minimal lay and cut, low gradients, and wide curves. Drainage structures were to be made of durable and permanent materials and designs. Stonework was preferred for some components, such as retaining walls and headwalls for culverts and bridges, because it required labor-intensive work promoted by the Public Works programs (Johnson et al. 1992:67).

An example of a secondary road displaying characteristic public works improvements runs from Rainbow Dam to the Ryan hydroelectric facility. Originally constructed in 1923 to enhance access by Montana Power Company operators between the two power plants, the road was reconstructed as part of Montana's WPA-funded highway program in 1939. At that time, the Rainbow-Ryan Road was widened and surfaced with gravel. WPA forces installed permanent auxiliary structures, including concrete bridges and culverts with stone abutments and headwalls, as part of the reconstruction effort (Rossillon et al. 2003:32).

Farmsteads

Since the early 1870s, ranching and farming have been primary economic activities in the Great Falls area. The first cattle herds were brought into the region in 1872, and by 1879 the area experienced a large influx of livestock companies. After the "hard winter" of 1886-7, many of those companies diversified into cattle/sheep operations (Howard 1983:154). Improvements in dryland farming techniques during the early 1900s drastically altered the livestock-based regional agricultural economy. The Campbell system of dry farming, which involved water conservation through deep plowing and intensive cultivation, was adopted at that time with promising success. Former grazing lands were quickly put under cultivation (Toole 1988:26-27).

The vast tracts of land made available for homestead entry during the first two decades of the twentieth century instigated much of the early agricultural development of central Montana. During the "homestead boom," thousands of hopeful farmers settled in the region. The new immigrants were greeted with favorable weather conditions which provided ample rainfall for farming the dry upland plains. However, three years of drought beginning in 1917 brought economic depression and a majority of homesteads failed.

Following the drought, many individual homesteads were consolidated into larger, more economically viable farms. Development of a reliable inter-regional transportation network, comprised of rail lines such as the Milwaukee Road and MHC primary and secondary vehicle roads, provided ready access to local, and distant, markets. Mechanization of farm equipment further enhanced agricultural production by allowing fewer workers to cultivate more acreage.

While few of the "homestead boom" farmsteads exist today, the remains of many later, post-1930 operations currently dot the landscape surrounding Great Falls. Some are long abandoned and little remains other than building remnants and scattered farm equipment. Others, such as those located along Salem Road east of Great Falls, are still occupied. They generally retain a scattering of historic elements intermixed with modern buildings and storage structures.

RESEARCH METHODS

Prefield Research

Prior to commencing its fieldwork, RTI queried the Montana State Historic Preservation Office's (SHPO) files to identify all cultural resource projects that have been previously undertaken in proximity to SME's project area. RTI then reviewed those project reports to determine the locations of all known cultural resources within, and near, the proposed plant sites and connection corridors. Additional information concerning specific cultural sites was obtained from the University of Montana's Archaeological Records office.

The file search and literature review revealed that 17 cultural resource projects have been undertaken within 1 mile of the HGS, its 28.4 miles of connections, and the Great Falls Industrial Park alternate plant site. Only two of those projects, however, encompass significant portions of SME's project area. In the early 1980s, Herbort (1981) inventoried lands encompassing the HGS, as well as adjoining property in Sections 24 and 25 of Township 21 North, Range 5 East, as part of the "Salem Plant Siting Resource 89" project. More recently, Wood (2004a) completed an intensive cultural resource inventory of 328 acres within Section 30 of Township 21 North, Range 4 East, encompassing all of the Great Falls Industrial Park alternate plant site.

The 15 remaining cultural resource projects overlap, or lie adjacent to, areas that SME proposes for development. Included are multiple inventory and subsurface testing projects completed for the Missouri-Madison Hydroelectric project (Greaser 1980; Bowers 1982; Deaver 1990, 1991; Deaver and Peterson 1992; Rossillon 1992; Rossillon et al. 1993, 2003; Dickerson 2000), cultural surveys near Giant Spring (Keim 1997; Wood 2004b) and Malmstrom Air Force Base (Greiser 1988; Hoffecker 1994), and documentation of the Great Northern Railway (Axline 1995a, 1995b).

Those cultural resource studies resulted in identification and documentation of 21 historic and prehistoric sites located within 1 mile of SME's proposed plant sites and connection corridors (Figure 4). The largest of those is the Great Falls Portage National Historic Landmark. Many of the remaining sites are associated with historic hydroelectric developments at the Rainbow, Ryan, and Morony facilities (sites 24CA214, 289, 291, 416, 422, 424, and 645). Other historic sites include the Giant Spring fish hatchery and access road (24CA617 and 627), the Great Northern (24CA604) and Chicago, Milwaukee, St. Paul, and Pacific (24CA264) railways, the Malmstrom Air Force Base Aircraft Alert Facility building (24CA979), and multiple small

This figure is a GIS generated 11x17 map.
See the PDF format version located in a separate file.

Figure 4. Previously-recorded cultural properties within 1 mile of SME's proposed developments.

trash dumps (24CA628 and 1278). Prehistoric cultural properties are few in number and broadly dispersed in the project vicinity. They consist primarily of lithic scatters (24CA112 and 278) and sites containing small numbers of stone circles or stacked-rock cairns (24CA305, 417, 418, and 423).

Only five of the above-referenced previously-recorded cultural properties lie within SME's project area. They include the Great Falls Portage National Historic Landmark (24CA238), the Chicago, Milwaukee, St. Paul, and Pacific Railroad (24CA264), historic transmission lines associated with the Morony (24CA289, Feature 2) and Rainbow (24CA291, Feature 34) hydroelectric facilities, and the Rainbow-Ryan Road (24CA416). The remaining 16 sites lie outside SME's project area as it is currently designed and they are not further discussed in this report.

Fieldwork

RTI's 2005 inventory area consists of 320-acre polygons encompassing the proposed HGS plant site and the alternate Great Falls Industrial Park location, as well as 250-foot-wide corridors centered on the HGS's 28.4 miles of connections. That portion of the project area encompassing the HGS had been previously inventoried in 1981, however, Montana SHPO personnel consider that work to be out-dated and they requested that the area be resurveyed (Warhank 2005). Wood (2004) completed an intensive cultural resource inventory of the alternate plant site at the Great Falls Industrial Park in 2004. That work meets currently-accepted standards, therefore, that portion of the project area was not resurveyed.

RTI's prehistoric archaeologist Ken Dickerson conducted his intensive pedestrian cultural resource inventory of the project area during the period from October 4 to October 13, 2005. The total area inventoried in 2005 covers 1180 acres. Fieldwork involved walking parallel transects spaced no more than 30 meters apart. Within the HGS plant site parcel, Mr. Dickerson traversed linear transects oriented east/west. Along the connection routes, his transects meandered to ensure that the corridors were intensively covered. At three locations along the proposed railroad spur route, the inventory corridor was broadened to cover areas where the line may be shifted east or west to facilitate road or transmission line crossings.

In general, ground surface visibility was fair to poor throughout the project area. Cultivated fields, which encompass approximately 75% of the total inventoried area, provided surface exposure ranging from 5% to 15%. The remainder of the project area consists of native grassland and localized riparian areas where dense vegetation limits surface visibility to 5% or less. In areas of poor surface exposure, Mr. Dickerson focused his attention on locations where the ground was open and exposed. Rodent burrows, livestock trails, roads, and cut banks provided good visibility in localized areas and they were closely inspected.

RTI's cultural resource field documentation generally consisted of marking exact site locations on appropriate topographic maps, measuring property dimensions, and describing the nature and extent of all historic remains. Additional information concerning the apparent depth and condition of cultural deposits was also recorded. Selected artifacts and features were photographed and RTI produced maps of each site showing the relative locations of all documented remains. No subsurface testing was conducted, nor were any cultural materials collected.

Historic Research

RTI consulted a variety of sources to gather information about the documented historic sites. Maps were reviewed that display the routes of historic roads and rail lines. During a brief informal interview, lifelong local resident Joseph Kantola provided a detailed description of his family's farmstead and an overview of local historical events. Numerous cultural resource reports and historic overviews were consulted for information directly pertaining to historic development of the Great Falls hydroelectric facilities and the Chicago, Milwaukee, St. Paul, and Pacific Railroad's North Montana Line. Dale Martin, a local authority on Montana railroad history, provided additional information on the Milwaukee Road and the historic Cooper Siding. Finally, RTI compiled partial title-chains for all recorded farmsteads using documents housed at the Cascade County Clerk and Recorder's Office.

INVENTORY RESULTS

Ten cultural properties lie within SME's project area (Figure 5). RTI fully documented nine of those sites including five previously-recorded properties and four new ones. The previously recorded sites are the Great Falls Portage Route National Historic Landmark (24CA238), a section of the Chicago, Milwaukee, St. Paul, and Pacific Railroad's North Montana Line (24CA264), historic transmission lines associated with the Morony (24CA289, Feature 2) and Rainbow (24CA291, Feature 34) hydroelectric facilities, and the Rainbow-Ryan Road (24CA416).

The majority of newly-recorded sites are historic farmsteads. They include the Urquhart Farmstead (24CA986), a farmstead in the NE¼ of Section 26 (24CA987), and the Kantola Farmstead (24CA0988). The last newly-recorded site is the historic Cooper Siding (24CA989) located along the Chicago, Milwaukee, St. Paul, and Pacific Railroad's North Montana Line. A tenth site, consisting of an historic farmstead designated with the field number RTI-05025-04, was identified but not fully documented. The landowner denied access to his property and RTI noted, but did not formally record, that farmstead.

As stated in the previous-research section, Wood (2004) inventoried the Great Falls Industrial Park in 2004. He found no cultural resources within that portion of the park encompassing SME's alternate plant site, however, he did document a small historic dump (24CA1278) immediately to the northeast (refer to Figure 4 for the site's location). That site is outside of the project area and it is ineligible for National Register listing, therefore, it is not further discussed in this report.

This figure is a GIS generated 11x17 map.
See the PDF format version located in a separate file.

Figure 5. Cultural properties located within SME's project area.

Table 1 lists the nine sites RTI recorded, and the one site it noted, during its 2005 fieldwork. The table includes site descriptions, legal locations, and National Register eligibility determinations.

Table 1. Cultural Sites Documented Within SME's Project Area.

Site Number	**Description**	**Legal Location***	**National Register Eligibility**
24CA238	Great Falls Portage NHL	T20N, R5E, Secs 3-7; and T21N, R5E, Secs 13-14, 23-27, and 33-35	Listed
24CA264	Chicago, Milwaukee, St. Paul & Pacific Railroad	T20N, R4E, Sec 1; T20N, R5E, Secs 5 and 6; and T21N, R5E, Secs 32-35.	Eligible; that portion lying within SME's project are is a non-contributing element
24CA289 Feature 2	Morony Transmission Line	T21N, R4E, Secs 24-26	Contributing Element of an Eligible District
24CA291 Feature 34	Rainbow Transmission Line	T21N, R4E, Secs 24-26	Contributing Element of an Eligible District
24CA416	Rainbow-Ryan Road	T21N, R4E, Sec 25 and 26; and T21N, R5E, Sec 19	Eligible
24CA986	Historic Farmstead	T21N, R5E, Sec 23	Ineligible
24CA987	Historic Farmstead	T21N, R5E, Sec 26	Ineligible
24CA988	Historic Farmstead	T21N, R5E, Sec 26	Ineligible
24CA989	Cooper Siding	T20N, R5E, Sec 6	Ineligible
RTI-05025-4	Historic Farmstead	T21N, R5E, Sec 35	Unevaluated; presumed ineligible**

* The legal locations listed above encompass only those portion of the sites lying within the SME's project area.
**Property RTI-05025-4 was noted in the field, but not formally recorded or evaluated for National Register listing.

In the following section, each cultural site lying within SME's project area is described and its National Register eligibility status is discussed.

Early Exploration Route

24CA238: Great Falls Portage National Historic Landmark.

This previously-recorded National Historic Landmark encompasses two sections of the 18-mile-long portage route traversed by Lewis and Clark's Corps of Discovery to by-pass the Great Falls of the Missouri in 1805. The site was first recorded in 1976, but the National Register nomination form was revised in 1984 (Witherell 1984).

As proposed, the western half of the HGS plant site will lie within the Landmark corridor. Sections of water intake and wastewater lines, overhead electric transmission lines, and the rail spur are also proposed to be constructed within the Landmark boundaries.

History. As stated in the historic context section, William Clark surveyed the 18-mile-long Great Falls Portage route across the prairie south of the Missouri River in mid-June 1805. The Corps carried their boats and equipment over the route during the ensuing three weeks, ultimately depositing its provisions at White Bear Islands upstream from the westernmost fall. The upstream journey on the Missouri River did not resume until July 14th, 1805 (Appleman 1975:309-317). The Great Falls were one of the most substantial obstructions the Corps of Discovery encountered during its journey to the Pacific Ocean. The portage also resulted in one of the longest unscheduled delays of the trip, requiring a month to travel less than 20 miles.

Description. The Great Falls Portage National Historic Landmark is an approximately 1-mile-wide discontinuous corridor that spans from the lower portage camp, located just north of the mouth of Belt Creek, to White Bear Island at the southern outskirts of Great Falls. Developments at Malmstrom Air Force Base and within the Great Falls city limits have significantly altered the central 5 miles of the portage route and that section is not part of the Landmark. The 10-mile-long section extending northwest from Malmstrom and the short portion of the route located southwest of Mount Olivet Cemetery have not been extensively developed and they are the primary historic elements of the site (Figure 6).

RTI's 2005 cultural resource inventory encompassed portions of the northern section of the Landmark corridor extending northeast from the eastern boundary of Malmstrom Air Force Base. Within that inventory area, RTI found no physical evidence of the Corps of Discovery's portage activities in the form of camp features, artifacts, or the like. It was noted, however, that the Historic Landmark is essentially unchanged since 1984 when it was nominated for National Register listing.

There is a small portage route interpretive display located about 1 mile north of the HGS plant site. This modern feature was brought to RTI's attention by SME representatives. The display, which consists of a vehicle pull-off area and information placards, is located adjacent to Salem Road at the point where it begins to descend into Belt Creek Canyon. Because it is outside of the project boundaries and it is not an historic component of the Great Falls Portage National Historic Landmark, the display was not visited during RTI's 2005 cultural resource inventory.

Figure 6. View of the Great Falls Portage National Historic Landmark's (24CA238) northern end with Morony Dam in the center and Belt Creek Canyon in the distance. View to the north/northeast.

Integrity. According to the revised National Register nomination form, "no evidence of the portage route is discernible today, but documentary and cartographic research, combined with study of the local terrain . . . has resulted in the delineation of the approximate route . . ." (Witherell 1984:2). A primary factor used to determine the landmark's eligibility for National Register listing is the undeveloped nature of the view shed within the defined corridor. Witherell (1984:8-9) states that the Landmark retains historic integrity because, other than scattered modern developments, the "portage [route] can be seen largely as Lewis and Clark observed it."

The 10-mile-long section of the Great Falls Portage National Historic Landmark extending from Malmstrom Air Force Base to lower portage camp has undergone varying degrees of modern development. Little development has occurred, however, since the site was nominated for National Register listing in 1984. At its extreme northern end, in the vicinity of Belt Creek, the corridor encompasses the steep Missouri River canyon. There, few modern intrusions are visible and the view shed remains largely unaltered (see Figure 6). The prairies to the southwest have been converted to agricultural lands. Farmsteads, roads, and overhead transmission lines that generally pre-date 1984 occupy portions of the corridor (Figure 7). Malmstrom Air Force Base lies immediately beyond the southwest end of this section and historic and recent developments there are visible from many areas within the Landmark.

Figure 7. Typical view of the Landmark corridor showing cultivated fields and widely scattered development. View to the north/northeast.

Despite those intrusions, lands within the corridor remain open and relatively undeveloped. The Landmark retains the same degree of integrity that it did when it was nominated for National Register listing.

National Register Evaluation. The Great Falls Portage National Historic Landmark is currently listed on the National Register of Historic Places. The site remains essentially unchanged from when it was nominated for National Register listing in 1984.

Electric Transmission Lines

24CA289 Feature 2 and 24CA291 Feature 34: Morony and Rainbow Transmission Lines

These two parallel historic electric transmission lines associated with the Morony (24CA289) and Rainbow (24CA291) hydroelectric facilities were recorded in the early 1990s. The features are described in a Multiple Property Documentation Form that describes various hydroelectric facilities on the Missouri and Madison Rivers and evaluates their National Register eligibility statuses (Renewable Technologies 1991:Section 7, page 21, 24).

The Morony transmission line (24CA289 Feature 2) begins at the Morony facility and extends about 7.5 miles to the Rainbow plant switchyard. Spanning between Rainbow and Ryan Dams, the Rainbow transmission line (24CA291 Feature 34) runs parallel to 24CA289 Feature 2 for most of its length. The two adjacent lines lie north of the Missouri River (Figure 8).

Figure 8. The Morony (24CA289 Feature 2) and Rainbow (24CA291 Feature 34) transmission lines. View to the northeast.

SME proposes to construct a new overhead transmission line (referred to hereafter as Transmission Line 1) that will span from the HGS to the Great Falls Switchyard. Transmission Line 1 will cross the historic Morony and Rainbow lines in the SE¼ of Section 24, Township 21 North, Range 4 East. From that point, the new line will run parallel to the historic features for 1.6 miles before branching off to the east toward the Great Falls Switchyard.

History. John D. Ryan's Great Falls Power Company completed construction of a 25,000-kilowatt hydroelectric facility at Rainbow Falls on the Missouri River in 1910 (Renewable Technologies 1991:Section E, page 2). Five years later The Montana Power Company (MPC), which had gained control of all of the Great Falls hydroelectric developments, completed the 60,000 kilowatt Ryan facility (Renewable Technologies 1991:Section E, page 29). A 100 kV interplant transmission line (24CA291 Feature 34), connecting the Rainbow and Ryan facilities, was constructed in 1915 (Renewable Technologies 1991:Section 7, page 21). MPC completed its 45,000 kilowatt Morony hydroelectric facility in 1930. As the facility neared completion, a 7.4-mile-long 100 kV transmission line (24CA289 Feature 2) was constructed connecting the Morony facility to the Rainbow Plant Switchyard. The southwestern 4.3 miles of the Morony transmission line runs parallel to the Rainbow line and both permitted electric power generated by their respective hydroelectric facilities to be transmitted through MPC's network (Renewable Technologies 1991:Section 7, page 24).

Description. RTI revisited only the 1.6-mile-long section of the Rainbow/Morony transmission line corridor that lies adjacent to the proposed route of SME's Transmission Line 1. RTI's 2005 inventory identified that within that section the lines remain essentially as they were recorded in 1991. The two historic transmission lines stand in their original locations and they exhibit the same form that they did when they were constructed. The Rainbow line has double wood poles standing 10.5 feet apart, while the Morony line has single poles. On both lines, ceramic suspension insulators hang from the center and the ends of wooden cross arms.

Integrity. Based on the condition of the poles on the Rainbow and Morony transmission lines, some have been replaced. Pole spacing is maintained, however, and the replacement poles replicate the design and materials of the original ones. Likewise, the replacement insulators are of the same form as the originals. The lines retain integrity of location, design, and materials. They also retain integrity of feeling and association because the rural setting remains intact (Renewable Technologies 1991:Section 7, page 24).

National Register Evaluation. The historic electric transmission lines are contributing elements to the National Register-eligible Great Falls Historic Hydroelectric District (Renewable Technologies 1991:Section 7, page 30; Rossillon et al. 2003: 28-30). The inter-plant transmission lines played integral roles in the early twentieth century development of the Missouri-Madison hydroelectric system.

Railroad and Associated Siding

24CA264: Chicago, Milwaukee, St. Paul, and Pacific Railroad's North Montana Line

Discontinuous sections of the Chicago, Milwaukee, St. Paul, and Pacific Railroad (referred to hereafter as the Milwaukee Road) and its spur lines have been documented by various researchers (see McCarter 1992 for an overview of the railroad within Montana). Near Great Falls, only short sections of the North Montana Line have been formally recorded. Wood (1986:2) determined that an abandoned section lying west of town lacks integrity and it is not a contributing element of the National Register eligible site. The National Register eligibility status of an intact section lying within Malmstrom Air Force base was not formally evaluated (Greiser 1987:4).

A 5.5-mile-long section of the Milwaukee Road's North Montana Line east of Malmstrom Air Force Base lies within the current project area. SME proposes to bury fresh- and waste-water discharge lines within a section of the railroad grade extending from the HGS to the Great Falls treatment plant.

History. As discussed in the historic context section, the Milwaukee Road's North Montana Line, running from its junction with the mainline at Harlowton northeast to Great Falls, was completed in 1914. It ran almost continuously, hauling agricultural and mining products, passengers, and other freight, from that date to the early 1980s when operations in Montana were terminated. Soon thereafter, many improvements associated with the line were demolished, salvaged, or otherwise altered.

Description. Within the project area, all rails and ties have been removed from the railroad grade. Fully 2 miles of the former grade has been plowed under, leaving only a dense scatter of cobbles to mark its former route (Figure 9). Much of the remaining 3.5 miles has been leveled and surfaced with gravel to accommodate automobile and farm machinery traffic (Figure 10). The few remaining intact elements include a large two-barrel concrete arched-culvert at the Box Elder Creek crossing and a smaller single-barrel culvert of similar design at a unnamed creek crossing in Section 6, Township 20 North, Range 5 East (Figure 11). Both culverts are in extremely poor condition and their historic design details are obscured. Nearly all utility poles along the line have been cut, leaving only stumps behind to mark their former locations. Other observed remains include a broad scatter of rail spikes, skid plates, and steel brackets.

Figure 9. A plowed section of the North Montana Line (24CA264) east of Malmstrom Air Force Base. View to the west/northwest.

Figure 10. Typical graded and gravel-surfaced section of 24CA264.
View to the east/northeast.

Integrity. The 5.5 mile section of historic railroad grade located within SME's project area lacks historic integrity and it is not a contributing element of the National Register-eligible Milwaukee Road. The rails, ties, and most associated hardware has been removed from the section, thus it no longer retains integrity of design, materials, and workmanship. The eastern portion of the rail bed has been graded and surfaced with gravel for use as a field access road. To the west, the bed has been plowed under and it is no longer clearly discernible. Those alterations severely diminish the site's ability to convey its original function. As a result, the site has lost integrity of feeling and association.

National Register Evaluation. The Milwaukee Road, as a whole, is eligible for National Register listing because of its significance to Montana's history. Portions of the line also retain unique and distinctive design attributes. The 5.5-mile-long section of the North Montana Line lying within SME's project area lacks integrity, however, because the track, ties, and associated hardware have been removed and the railroad grade has been extensively altered. The section is not, therefore, a contributing element of the National Register eligible site.

Figure 11. Concrete culvert ruin at the North Montana Line's Box Elder Creek crossing. View to the south/southwest.

24CA989: Cooper Siding

Cooper is a previously-unrecorded historic siding along the Milwaukee Road's North Montana Line. The documented features lie immediately south of the abandoned railroad about 1.5 mile east of Malmstrom Air Force Base. SME proposes to bury its fresh and wastewater pipelines within the railroad bed.

History. Cooper was one of many sidings along the North Montana Line. There were few, if any, improvements to the siding before the 1940s. A Milwaukee Road time table indicates that in 1948 the siding consisted of a 21 freight car capacity spur and a telephone in a metal box from which train crews could call railroad offices, train dispatchers, and station agents. There was no depot, telegraph office, or other railway features (C,M,StP&P 1948). An historic map indicates that a grain elevator had been constructed at Cooper by 1954 (US Geological Survey 1954). A more recent map identifies multiple "storage bins" on site (US Geological Survey 1965). After the North Montana Line was abandoned in 1980, the rails and ties along this section of the line were removed and the railroad right-of-way eventually reverted to the adjacent landowners. The storage facilities and associated buildings at Cooper Siding likely were abandoned by 1980.

Description. There are nine historic and modern features on-site (Figure 12). Feature 1 consists of concrete foundation remnants and associated construction materials that presumably mark the former location of a building. The remains have been graded into a low, linear mound using heavy equipment. Nearly all of the building's superstructure had been removed before the heavy equipment work. All that currently remains are broken concrete slabs and a scatter of construction hardware, fencing remains, and associated materials. At the northwest margin of the feature there is a pile of cut brush that may be the remains of ornamental shrubbery. The brush pile has been partially burned and most of the building remains are charred.

Figure 12. Overview of Cooper Siding (24CA989) with the plowed remnants of the Milwaukee Road in the foreground and Features 4-8 (right to left) beyond. View to the southeast.

Feature 2 is a mounded pile of cobbles and small boulders that lies immediately east of Feature 1. The material constitutes remnants of the abandoned Milwaukee Road bed that has been graded as part of recent agricultural development activities. The mound measures about 50 feet long x 8 feet wide and it is 5 feet tall.

Feature 3 is the abandoned, and largely obliterated, Milwaukee Road grade. The railroad originally ran in an east/west direction on the north side of Cooper Siding. Following abandonment of the line in 1980, all rails and ties were removed from this section of the grade. Recently, the rail bed has been graded and plowed, leaving only a broad linear swath of rounded cobbles and small boulders to mark its former location.

Features 4 and 5 are modern corrugated sheet metal grain bins that originally sat on a single concrete foundation. Both have fallen onto their sides and they are no longer functional. The bins were originally about 15 feet in diameter and stood 15 feet tall. Each had a cone-shaped roof and an auger-fed chute at its base. The numbers "196" followed by a fourth illegible number are incised in the foundation. Those numbers presumably specify the date that the concrete was poured, indicating that the foundation and the grain bins post-date 1960.

Feature 6 is an historic grain bin located immediately east of Features 4 and 5. Its concrete foundation is connected to the one that underlies Features 4 and 5, however, the slab beneath Feature 6 appears to be older and it may date to the 1950s. The bin is constructed from curved panels of 4x8-foot sheet metal that are bolted together at the seams. Unlike Feature 4 and 5, this one remains standing and it is about 20 feet tall. The roof is not visible, and it has either been removed or it has collapsed inside of the bin.

Feature 7 and 8 are modern galvanized corrugated sheet metal troughs or open bins. They lie on an historic concrete slab east of Feature 6 and presumably set where larger grain bins had once been. They are 15 feet in diameter, the walls are 3 feet tall, and there are no roofs or caps. Based on their materials and condition, these features are less than 20 years old.

Feature 9 is a concrete slab that lies near the center of the site area. This feature is similar in design to the concrete slabs beneath Features 4-8, suggesting that one or more grain bins originally rested atop it. The bins have been removed leaving only the slab, scattered concrete block fragments, and a loose scatter of steel brackets, metal sheeting, and other construction materials.

At the western margin of Feature 1 there is an artifact concentration containing about 30 fragments of window glass, numerous wire nails and threaded bolts, sections of metal fencing, a steel pipe gate, strap iron hinges, aqua glass electrical insulators, ceramic insulators, and lengths of angle iron (Figure 13). Features 4-8 are surrounded by a loose scatter of historic and modern remains including numerous wire nails, lengths of rebar, short sections of cable, a large steel I-beam, and portions of the undercarriage of a railcar. Farther east, near Feature 9, is a loose scatter of large-diameter ceramic pipe fragments.

<u>Integrity.</u> Cooper Siding lacks historic integrity. Nearly all original buildings and structures have been demolished and the remaining ones no longer clearly convey the site's historic function. In addition, several modern structures have been constructed within the site area and they further confuse the historic arrangement of constituent features. Due to those alterations, the site's integrity of design, materials, and workmanship are lost.

The landscape surrounding the site has changed very little since Cooper served as a storage and loading facility for the Milwaukee Road. The site, therefore, retains integrity of setting and feeling. Its integrity of association is severely diminished, however, due to extensive modern alterations to all historic features including the Milwaukee Road grade.

Figure 13. Artifact concentration at the western margin of Feature 1, 24CA989.
View to the east.

National Register Evaluation. Cooper Siding is not eligible for listing in the National Register of Historic Places because it lacks integrity and significance. Nearly all of the site's historic features have been demolished or extensively altered and modern elements have been added. The site no longer clearly conveys its historic association with the Milwaukee Road.

Cooper was one of many small storage/loading facilities along the Milwaukee Road's North Montana Line. It is generally not described in railroad histories, suggesting that the siding did not play an important role in the development or maintenance of the line. The site is not directly associated with important historical figures and the few remaining structures are not distinctive of a specific architectural style or type. The property does not, therefore, meet established criteria for historic significance.

Public Works Secondary Road

24CA416: Rainbow-Ryan Road

The Rainbow-Ryan Road was recorded in 1994 as an historic public-works road (Figure 14). The site recorders documented nine road features in addition to the grade itself (Johnson et al. 1994:4-5). They considered the site to be eligible for National Register listing under Criterion C because it embodies significant design qualities and construction techniques used for

Figure 14. Section of the 24CA416 road located midway between the Rainbow and Ryan hydroelectric facilities. View to the Northeast.

secondary highways constructed with Public Works funds during the Depression era (Rossillon et al. 2003:34).

Approximately 0.75 mile of the road grade lies within SME's project area. The proposed route of Transmission Line 1 spans the Rainbow-Ryan Road immediately north of Cochrane Dam. Farther west, the line will overhang portions of the road within Sections 25 and 25, Township 21 North, Range 4 East.

History. Originally constructed in 1923 to enhance access by Montana Power Company operators between the Rainbow and Ryan plant, the road was reconstructed as part of Montana's WPA-funded highway program in 1939. At that time, the Rainbow-Ryan Road was widened and surfaced with gravel. WPA forces installed permanent auxiliary structures, including concrete bridges and culverts with stone abutments and headwalls, as part of the reconstruction effort (Rossillon et al. 2003:32).

Description. RTI only revisited those portions of the Rainbow-Ryan Road lying within SME's project area. In addition to the 22-foot-wide gravel surface road grade, RTI observed four historic crossing structures within the inventoried area. Three of the features are culverts with dry-laid fieldstone headwalls (Figure 15). The fourth is a small timber stringer bridge with stone abutments. All of those features had been previously-recorded and they are fully documented by Johnson et al. (1994:4-5).

Figure 15. A typical dry-laid fieldstone culvert headwall along the Rainbow-Ryan Road (24CA416). View to the southeast.

Integrity. RTI's 2005 inventory revealed that the Rainbow-Ryan Road remains essentially as it was recorded. The road bed, and the documented crossing structures, retain integrity of location, design, setting, materials, workmanship, feeling, and association.

National Register Evaluation. RTI concurs with the previous site recorders that this site is eligible for National Register listing. The road has not been extensively altered during the modern period and it remains an excellent example of an historic public-works road.

Farmsteads

24CA986: Urquhart Farmstead

The Urquhart Farmstead is a newly-recorded historic site that lies on the west side of Salem Road about 9 miles northeast of Great Falls (Figure 16). The site is about 0.5 mile northwest of the HGS. SME proposes to bury a raw water intake pipeline immediately north of the farmstead.

Figure 16. View of the Urquhart Farmstead (24CA986) from Salem Road. View to the west.

History. Charles Urquhart purchased the land on which the farmstead rests from Roy Goodbrand in 1929 (Cascade County Clerk and Recorder's Office 1929). All existing improvements appear to post-date the 1929 purchase date. The Feature 2 house and several outbuildings (Features 3 -5 and 9-12) presumably date to the early years of Mr. Urquhart's occupation. Major developments were undertaken beginning in 1950. The Urquharts added several new steel shop buildings and constructed a new house on the property. They presumably moved several original outbuildings to make room for the new ones. Finally, steel grain bins were installed in the 1960s and 1970s.

Description. There are 11 historic buildings (pre-1955) and six modern ones on-site. Feature 1 is a single story house that was constructed in 1954 and the building remains in use as a residence (Figure 17). The wood frame building rests on a poured concrete foundation and it has a full basement. The exterior walls are clad with modern vinyl siding. Windows include two- and three-pane fixed and casement units with wood sashes. A half-light wood person-door is positioned on the north wall, while there is a solid-core unit with three small glass panes on the east wall. The hipped roof is covered with new (within the last 10 years) asphalt shingles. An aluminum vent pipe and a cinder block chimney extend from the roof.

Feature 2 is an abandoned house that lies immediately south of Feature 1. This wood frame building currently rests on a hollow clay tile foundation enclosing a full basement. This does not appear to be the building's original foundation, suggesting that Feature 2 has been

Figure 17. The Feature 1 house at 24CA986. View to the southwest.

moved to its present location. Horizontal drop siding covers the exterior walls and there are multiple 2/2 double hung windows. The glass panes have been removed from most of the windows, leaving only the wood sashes. The lone person-door is a wood slab unit located near the west end of the building's north wall. A sliding garage door provides access to the basement. Wood shingles cover the gable roof. A galvanized metal ridge roll caps the gable and there are ball finials at its ends. A brick chimney extends from the center of the gable. There are no modern improvements to this building and it has not been occupied for many years. It is currently being used for storage and the feature is in an advanced state of deterioration.

Feature 3 is a small granary located adjacent to the gravel driveway that provides access to the farmstead. This single-story wood frame building's wood beam sills set directly on the earth. The walls are clad with horizontal drop siding and there are no windows. A vertical-board sliding door on metal rails is centered in the south wall. Wood shingles cover the roof and a galvanized metal ridge roll with ball finials caps the gable. This building remains essentially as-built, but it is currently used as a storage shed.

Feature 4 abuts the west wall of Feature 3. This wood frame shed appears to have been moved to its current location and its rests on railroad tie skids. The walls are clad with butt-jointed boards and there is a badly deteriorated board person-door located near the west end of the south wall. The shed roof is covered with wood shingles and there is no chimney or vent. The building is in very poor condition and it is leaning precariously.

Feature 5 is a wood-frame building positioned immediately northwest of Feature 4. This feature may have once served as a bunkhouse, but it is currently used as a storage shed. The building appears to have been moved to its current location and it rests on deteriorated wood beam skids. Horizontal lapped board siding covers the exterior walls and there are multiple 2/2 double hung windows. The glass panes have been removed from the windows, leaving only the wooden sashes. A wood slab person-door is centered in the north wall. The front gable roof was once covered with asphalt shingles, but most of the roofing is now gone. The building is in very poor condition and it exhibits extensive sagging and settling.

Feature 6, 7, and 8 are steel shop buildings (Figure 18). Feature 6, constructed in 1952, is a vertical-walled steel-frame building. Features 7 and 8 are quonset huts constructed in 1950 and 1957, respectively. All three are typical pre-fabricated buildings and each has a large sliding garage door on its eastern wall.

Figure 18. Post-1950 steel buildings (Features 6-8) at 24CA986.
View to the northwest.

Feature 9 is a former chicken house located at the extreme southwest corner of the site. The wood-frame building rests on a poured concrete foundation. The walls are clad with drop siding and there are multiple window ports. The glass panes and wood sashes have generally been removed from the windows, but they appear to have all been multiple pane fixed units. Five-panel wooden doors are positioned on the east and west walls. The shed roof is covered with new rolled-asphalt sheeting and a small steel vent pipe projects from its center.

Feature 10 is a small shed located immediately north of the Feature 11. The wood frame building's decaying wooden beam sills set directly on the earth. Horizontal lapped board siding covers the exterior walls and there is a single window port on the east wall. A person-door constructed from butt-jointed boards is centered in the south wall. Modern tin sheeting covers the low, sloping gable roof.

Feature 11 is a small barn that lies at the corner of a pole corral west of Feature 10. The wood frame building rests on a severely deteriorated concrete foundation. The walls are clad with lap board siding. There are multiple window ports, but the panes and sashes have been entirely removed. Two horizontal board sliding doors on the south wall provide access to the building. Wood shingles cover the gable roof and a galvanized metal ridge roll with ball finials caps the gable. There is a small gabled dormer near the northeast corner of the roof. The building is leaning severely and it is near collapse.

Feature 12 is a shed located immediately north of the Feature 11 barn. This wood frame building's large wooden sills set directly on the earth. The walls are clad with drop siding. There are two small window ports, but the panes and sashes have been entirely removed. Two vertical board swinging doors on the south wall provide access to the building. Wood shingles cover the gable roof and a galvanized metal ridge roll with ball finials caps the gable. The building remains essentially as-built and it is in fair overall condition.

Five galvanized sheet steel grain bins lie at the northwestern corner of the farmstead. The bins date to the period between 1960 and 1976. They are modern pre-fabricated cylindrical bins with cone-shaped roofs.

Integrity. The Urquhart Farmstead lacks integrity of materials, design, and workmanship. The Feature 1 house, which was constructed in 1954, has been altered and many of the outbuildings have been moved or reconstructed. Several large modern outbuildings have been added to the property. The new buildings are of materials and designs that are very different from the historic ones.

As it currently exists, the property represents three distinct periods of construction. Features 1, 3-5, and 9-12 were built during initial development of the farmstead in the 1930s. New buildings, including a second house (Feature 1) and three steel shops (Features 6-8) were added in the 1950s. Finally, five pre-fabricated grain bins were installed post-1960. The post-1950 buildings and structures visually dominate the property and the combination of historic and modern elements diminishes the site's overall integrity of setting, feeling, and association (Figure 19).

National Register Evaluation. The Urquhart Farmstead is not eligible for listing in the National Register of Historic Places because it lacks significance and integrity. The site is associated with an important episode of local history - namely early 20th century agricultural development in central Montana. It is debatable whether the Urquhart Farmstead made an important contribution to that development, however, as it was but one of many such farmsteads established at that time. The farmstead is not directly associated with any individual or group that is important to the period. Additionally, the property's key historic elements have been

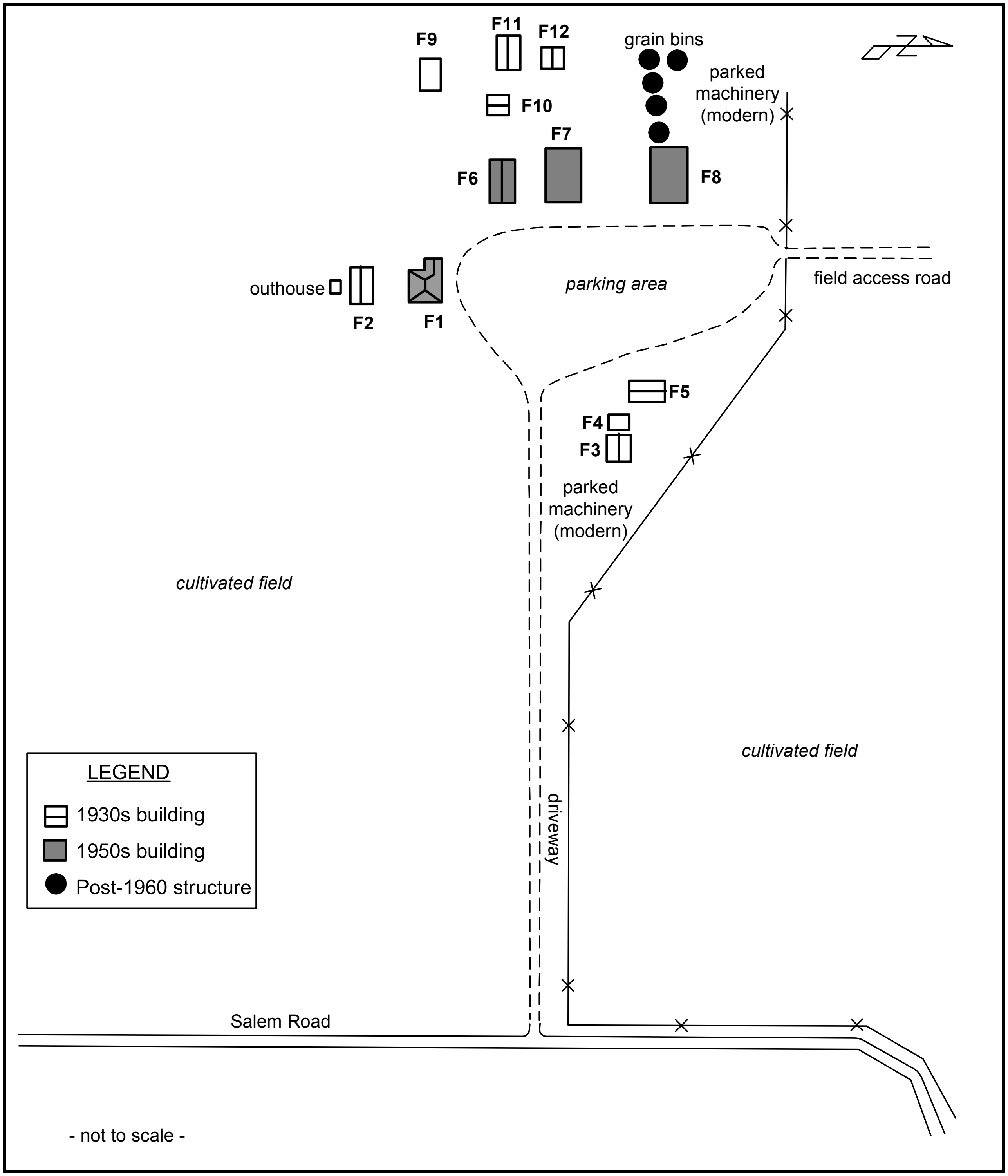

Figure 19. Detail map of the Urquhart Farmstead showing the arrangement of buildings representing each of the three construction periods

extensively modified, reconstructed, or moved. Modern buildings have been added to the farmstead and they dominate the property to the extent that it no longer conveys its historic design or feeling.

24CA987: Historic Farmstead

Site 24CA987 is a newly-recorded historic farmstead located about 1 mile south of the previously-described Urquhart site (24CA986). It rests on a low hill on the west side of a dry coulee 0.25 mile west of Salem Road. The farmstead is 0.5 mile southwest of the HGS. SME proposes to construct two overhead electric transmission lines (Transmission Lines 1 and 2) immediately north of the site and to bury fresh- and waste-water pipelines to the southeast.

History. John Somppi acquired the property on which the documented buildings rest, as well as adjoining parcels, during the period from 1934 to 1946 (Cascade County Clerk and Recorder's Office 1934, 1946). The three buildings RTI documented appear to date to about the mid-1930s when Mr. Somppi owned the property. Charles Urquhart purchased the land from Mr. Somppi in 1966, and Duane Urquhart is the current owner (Cascade County Clerk and Recorder's Office 1966).

Description. There are three historic buildings on-site including a house, a granary, and a shed. All of the buildings have been abandoned for many years and they are in relatively poor overall condition.

The Feature 1 house is a wood frame building constructed in about the 1930s (Figure 20). The sill timbers set directly on low rubble-stone piles at the four corners of the building. Exterior walls are clad with drop siding and there are single 1/1 double hung windows on the south and west walls. A enclosed lap-sided porch addition is attached to the north side of the building. The addition post-dates the remainder of the building, but it is clearly historic in age. A wood slab person-door centered in the north wall of the addition provides the only access to the house. Wood shingles cover the front gable roof. A sheet metal stove pipe projects from the east roof slope.

Feature 2 is a granary located 100 feet south of the Feature 1 house. This building is of similar age to the house, but it has been moved to its current location from elsewhere. Its floor joists rest on wood beam skids that clearly post-date the building and they appear to be less than 20 years old. The building is reverse-framed, with the butt-jointed board walls on the inside of the framing. There is a wood slab door centered in the west wall, but there are no windows. The shed roof is partially covered with sheet metal.

Feature 3 is a small shed located immediately south of the granary (Figure 21). Like Feature 2, it was moved to its present location and the building rests on timber skids. The exterior walls of the wood frame structure are clad with vertical butt-jointed boards. There is a door port centered on the west wall, but the door has been removed. A small shuttered window is positioned above the door. The front gable roof is covered with metal sheeting and there is no chimney or vent.

Figure 20. The Feature 1 house at 24CA987. View to the northwest.

There is a loose scatter of building materials and domestic artifacts surrounding the Feature 1 house. Observed remains include about 200 window glass fragments, 100 wire nails, 10 sections of steel water pipe with threaded fittings, 50 whiteware fragments, 10 sanitary cans, and two bricks. There is a small dump in the coulee bottom southeast of the abandoned house. The 600 square-foot dump contains about 50 sanitary cans, 50 evaporated milk cans, 10 kerosene containers with screw-on caps, two 50-gallon drums, three 20-gallon drums, decorative sheet-metal ceiling material, an enameled washbasin, wood stove fragments, and a set of bed springs. The body of a 1930s-era automobile lies at the northern edge of the dump and there is a 1939 Montana license plate nearby. RTI did not collect any of the documented artifacts during its 2005 site visit.

Integrity. The farmstead lacks historic integrity. With the exception of the Feature 1 house, all existing buildings have been moved to their current locations from elsewhere. The historic arrangement of the small farmstead has been comprehensively altered due to the movement and/or removal of its constituent features. The property, therefore, has lost integrity of design and feeling and it has diminished integrity of workmanship.

National Register Evaluation. The farmstead is not eligible for listing in the National Register of Historic Places because it lacks significance and integrity. This small site is but one of many early 20th-Century farmsteads in the area and it is not directly associated with any individual or group that is important to the period. The site, therefore, lacks significance.

Figure 21. The granary (Feature 2) and shed (Feature 3) at 24CA987.

Additionally, this property no longer maintains its historic appearance due to the loss of most original features and the movement of two buildings on site. The property does not convey its historic elements of design, workmanship, or feeling.

24CA988: Kantola Farmstead

The newly-recorded Kantola Farmstead is about 8 miles east of Great Falls on the west side of Salem Road (Figure 22). The site lies over 0.5 mile southwest of the HGS. SME proposes to construct a railroad spur line within the Salem Road corridor immediately adjacent to the farmstead and to bury fresh- and waste-water pipelines just west the property.

History. The land on which the site rests was patented by Victor Kantola in 1913 and the property remains in Kantola family ownership at present (Cascade County Clerk and Recorder's Office 1913). All existing improvements post-date 1913, and most appear to have been constructed post-1920. According to Joseph Kantola (personal communication with Ken Dickerson, October 12, 2005), the school building and teacherage were moved to the property in the 1960s. Mr. Kantola also stated that the modern house was built in 1967. It was occupied by members of the Kantola family until recently, but the house is currently unoccupied.

Figure 22. Overview of the Kantola Farmstead (24CA988) from Salem Road.
View to the west/southwest.

<u>Description.</u> There are eight historic buildings on-site. Feature 1 is a house that was reportedly constructed in about the 1920s. A two car garage and an enclosed walkway were attached to the house in about the 1950s. The original 1½ story wood frame building rests on a concrete slab foundation. It has drop siding, while the newer additions are sheathed with T-111. The main house has multiple 1/1 double hung windows and single- and multiple-pane fixed units with wooden sashes. The historic person-door has been removed from main house, leaving only the modern aluminum screen door. The walkway addition has a single light, five panel wood door on its west wall, but the door on the east wall has been removed. Two modern overhead garage doors provide access to the garage addition. The gable roofs of the house and the additions are covered with modern asphalt shingles (Figure 23).

Feature 2 is a school house that was built around 1920 (Figure 24). It was moved from its original location to the Kantola Farmstead for use as a storage shed. The 1½ story wood frame building's wood sills currently rest on concrete blocks that are set at the corners of the building. Asbestos siding covers the walls. The windows are 1/1 double hungs set singly or in groups of five. The hip roof dormer has a multiple-pane fixed window. All of the windows are original and they have wood sashes. A two panel wood door is centered in the east wall. The hipped roof is covered with asphalt shingles and there is a small dormer on the east slope. The building remains in use as a storage shed and it is in fair overall condition.

Figure 23. East elevation of the Feature 1 house at 24CA988. View to the west.

Feature 3 is of similar age as Feature 2 and it was constructed for use as the teacherage for the school. It, too, was moved to the Kantola Farmstead. The 1½ story wood frame building has additions attached to the east and west walls. The building's floor sills set on large timber skids and there is no foundation. The walls are clad with lap siding. Historic 1/1 double hung windows are centered in the north and south walls of the main building and there is a similar unit on the south wall of the east addition. A half-light three panel wood door serves as the front (east) entryway, while there is a five-panel wood door in the north wall. The main building has a gable roof, while the east addition has a simple shed design and the west addition has a hipped roof. The roofs are covered with asphalt shingles. Like Feature 2, this building is currently being used for storage.

Feature 4 is the enclosed portal to an underground root cellar. Based on its materials and condition, the feature appears to have been constructed after World War II. The small wood frame structure's walls are covered with ½-inch plywood and there is rolled asphalt sheeting on the shed roof. A very narrow five-panel wood door provides access to the cellar, which has been abandoned for many years.

Feature 5 is a small granary. The reverse-framed building has horizontal butt-jointed boards attached to the insides of the framing. Its timber sills rest directly on the earth and there is no foundation. There are no windows and a vertical-board person-door centered in the east

Figure 24. The Feature 2 schoolhouse in its present location at 24CA988.
View to the southwest.

wall provides the only access to the interior. The northern slope of the gable roof is covered with modern plywood sheeting. All roofing has been removed from the southern slope. The building has been abandoned for many years and it is leaning precariously.

Feature 6 is a small shed located within the northwestern portion of the site. The wood frame building's wooden sills set directly on the earth and there is no foundation. Horizontal tongue-and-groove boards cover the exterior walls. There are three small window ports, but the windows have been entirely removed. The single door is on the south wall and it is constructed from vertical boards. Wood shingles cover the roof and remnants of a rolled-metal cap remain on the crest of the gable. This building has been long abandoned and it is in relatively poor overall condition.

Feature 7 is a second granary. It is of similar design to Feature 5, except that this building has a shed roof covered with modern rolled asphalt sheeting. The Feature 7 granary rests on modern wooden skids and it has been moved to its current location from elsewhere.

Feature 8 is a collection of three adjoining buildings used as a chicken house. The southernmost building appears to be in its original location, while the two others were moved to their current locations from elsewhere. The wood frame buildings rest on wood sills set directly on the ground. The original building's walls are clad with drop siding, while the two additions have butt-jointed board siding. There are no windows and swinging wood doors provide access to each division of the building. Wood shingles cover the building's gable and arched roofs.

Seven new buildings/structures have been constructed within the site bounds in recent years. They include a single-story, gable roof house with an attached garage that lies at the extreme southwest corner of the site. This house, and two small gable roof sheds located immediately to the north, was constructed in 1967 (Figure 25). Four modern pre-fabricated sheet metal grain bins have been installed north of the modern house near the Feature 6 shed.

Figure 25. Modern (1967) house and sheds at 24CA988. View to the west.

Integrity. The Kantola Farmstead lacks historic integrity. The historic farm house has undergone substantial alterations that affect its original form, scale, massing, and materials. In about the 1950s, the owners added a garage and an enclosed walkway to the south end of the building. The additions are of materials and designs that are radically different from those of the historic portion of the building.

The Feature 2 school house, Feature 3 teacherage, Feature 7 granary, and portions of the Feature 8 chicken house are historic buildings that have been moved to their present locations from elsewhere. The buildings generally retain integrity of materials, design, and workmanship. Because the buildings have been moved, however, they have lost integrity of location, setting, feeling, and association.

Only the Feature 4 root cellar portal, Feature 5 granary, and Feature 6 shed retain most of their elements of historic integrity. Multiple modern buildings have been constructed in proximity to those historic features, however, and the new buildings visually dominate the property.

National Register Evaluation. The Kantola Farmstead is not eligible for listing in the National Register of Historic Places because it lacks integrity and significance. Although it is associated with late historic-era agriculture in the Great Falls area, RTI found no documentation that demonstrates that the site played an important role in the local rural economy (Criterion A). The site is not associated with persons of importance to history (Criterion B). The key historic elements have been moved or altered and the existing buildings are poor representations of local rural architectural types (Criterion C). Finally, there is little evidence that the site retains archaeological remains that would provide additional information not already available in the written record (Criterion D).

Unrecorded Property

RTI noted a fourth historic farmstead within the project area about 1 mile south of the Kantola site. It is located immediately west of SME's proposed railroad spur and south of the fresh- and waste-water pipelines. The current landowner, Mr. Michael Hoy, did not grant RTI access to the property. The site was not, therefore, formally recorded but it is briefly described below.

RTI-05025-4: Farmstead

The parcel on which the farmstead rests has changed owners on numerous occasions in recent years, but it was originally owned by the Bumgarner family. John Bumgarner owned the parcel prior to 1931 when he granted it to Glenn Bumgarner (Cascade County Clerk and Recorder's Office 1931). Most of the historic buildings on-site were presumably constructed either during John or Glen Bumgarner's tenure.

Based on a brief reconnaissance from Salem Road, the site contains at least seven historic buildings including a house, several outbuildings, and a wood-frame grain bin. The historic house has been extensively altered during the modern period. It has new roofing and siding, and a garage addition has been added to the rear of the building. Several of the historic outbuildings have also been remodeled.

Like the Urquhart (24CA986) and Kantola (24CA988) farmsteads, RTI-05025-4 has undergone extensive renovation and alteration of the existing historic buildings. RTI believes that this site, too, lacks integrity and significance and RTI-05025-4 is presumed to be ineligible for National Register listing.

SUMMARY

Renewable Technologies, Inc. completed a cultural resource inventory of SME's proposed Highwood Generating Station project area during October, 2005. The inventory encompassed 1180 acres covering the proposed Highwood Generating Station plant site and its 28.4 miles of railroad, transmission line, and water pipeline connections. The Great Falls Industrial Park alternate plant site was intensively inventoried for cultural resources in 2004, and RTI did not resurvey that portion of the project area.

Ten cultural properties lie within SME's project area. They include the Great Falls Portage National Historic Landmark (24CA238), a section of the Chicago, Milwaukee, St. Paul, and Pacific Railroad's North Montana Line (24CA264) and the associated Cooper Siding (24CA989), historic transmission lines associated with the Morony (24CA289, Feature 2) and Rainbow (24CA291, Feature 34) hydroelectric facilities, the Rainbow-Ryan Road (24CA416), the Urquhart Farmstead (24CA986), an historic farmstead in the NE¼ of Section 26 (24CA987), and the Kantola Farmstead (24CA0988). An additional farmstead, designated with the field number RTI-05025-04, lies within the project area but RTI was unable to formally record it due to access issues.

To date, only the Great Falls Portage National Historic Landmark has been listed in the National Register of Historic Places. The Rainbow-Ryan Road (24CA416) was determined to be National Register eligible by SHPO consensus, while the Morony and Rainbow transmission lines (24CA289 Feature 2 and 24CA291 Feature 34) are contributing elements of National Register eligible hydroelectric facilities. Those sites are not, however, currently listed on the National Register. The Chicago, Milwaukee, St. Paul, and Pacific Railroad (24CA264), as a whole, is National Register eligible. That portion of the North Montana Line lying within SME's project area, however, is a non-contributing element. Finally, three historic farmsteads (24CA986-988) and Cooper Siding (24CA989) are not eligible for National Register listing because they lack significance and integrity. Site RTI-05025-4 is presumed to be ineligible for National Register listing, but the site's eligibility status has not been formally evaluated.

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APPENDIX H

NATIVE AMERICAN PRESENCE IN CASCADE COUNTY AND THE GREAT FALLS AREA DURING THE HISTORIC PERIOD

Native American Presence in Cascade County and the Great Falls Area During the Historic Period

When Captains Lewis and Clark and the Corps of Discovery arrived at the Great Falls of the Missouri River in the summer of 1805, the area had already been mapped by fur traders. Fur trade era documents offer great insight into how and when the Blackfeet utilized their territory (Matthews 2006). It is widely accepted that the Piegan clan of the Blackfeet Tribe controlled north-central Montana east of the continental divide (Toole 1959). The Piegans asserted a strong presence in central Montana and in 1805 the area they considered theirs ranged from the southern Saskatchewan and Alberta plains south to the Yellowstone River. "War parties" of Piegans frequently patrolled these rich plains from Saskatchewan to the Yellowstone River, ensuring that everyone knew this territory and the game that lived thereon was theirs. The area around the Great Falls of the Missouri was without a doubt Blackfeet country (Malone, et al. 1991).

On 13 June 1805 while surveying the rolling hills along the banks of the Missouri River, Captain Meriwether Lewis came upon the Great Falls of the Missouri (Duncan and Burns 1997). During the Corps of Discovery's one-month portage around the Great Falls of the Missouri (13 June to 13 July 1805), Lewis and Clark's journal entries for this period do not contain any reference of having sighted the remnants of Indian lodging (DeVoto 1953). Given how detailed their journal entries typically were, if Lewis and Clark had encountered any sign of Blackfeet, their camps or dwellings during their Great Falls portage, they would certainly have made note of it. The most likely explanation for the lack of any such journal entry is that the proposed location for the Highwood Generating Station did not represent a suitable location for a Piegan encampment. It was somewhat deficient in the essential attributes of a Piegan encampment, namely water, abundant fish and wild game, protection from the elements, and fuel. Therefore, for all intents and purposes, the specific proposed location (Salem site) of the HGS was controlled and utilized occasionally – but most likely not inhabited – by the Piegans.

The Blackfeet Indian's preferred area for establishing encampments was in present day Glacier County on the eastern boundary of Glacier National Park (Travel Montana 2006). However, their general presence along the Missouri River in the area of Great Falls is attested to by the fact that immediately after the portage, on 13 July 2005, soon after departing from White Bear Island – about 22 miles to the southwest of Belt Creek – the expedition found remnants of a Blackfeet encampment. It was a large, circular lodge framed by cottonwood poles and some 216 feet in circumference at the base (Moulton 2004).

The Blackfeet were a mobile people who moved around seasonally to harvest game and plants when needed and when in season. The area in and around Glacier National Park was utilized in a seasonal manner for food, materials necessary for survival, and ceremonial purposes, but the rest of the territory was utilized extensively as well. However, sometimes this use did not leave behind material evidence or was not recognized by people unfamiliar with the Blackfeet type of settlement. This would explain why Lewis and Clark did not mention encampments. Also most encampments would have been on bench overlooking the Missouri River. Coulees in the vicinity of the Great Falls of the Missouri River may have also been used as kill sites, since bison were plentiful in the area as well as deer, elk, antelope, and other targeted game. Ethnographic evidence also tells of the area of the HGS having been used as a cache site when "war parties" were in the field. After a series of treaties and executive orders the aboriginal territory of the Blackfeet was either ceded by them or taken by executive action leaving the reservation boundaries in their present state (Matthews 2006).

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APPENDIX I
DEQ SUPPLEMENTARY PRELIMINARY DETERMINATION ON AIR QUALITY PERMIT FOR HGS

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MONTANA AIR QUALITY PERMIT

Issued To:	Southern Montana Electric Generation and Transmission Cooperative – Highwood Generating Station 3521 Gabel Road, Suite 5 Billings, MT 59102	Permit: #3423-00 Application Complete: 5/16/06 Preliminary Determination Issued: 3/30/06 Supplemental Preliminary Determination Issued: June 30, 2006 Department's Decision Issued: Permit Final: AFS #: 030-013-0038

An air quality permit, with conditions, is hereby granted to Southern Montana Electric Generation and Transmission Cooperative – Highwood Generating Station (SME-HGS), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq*., as amended, for the following:

SECTION I: Permitted Facilities

A. Permitted Equipment

SME-HGS operates a gross 270-megawatt (MW) electrical power generating plant. The SME-HGS facility is a coal-fired steam/electric generating station incorporating a circulating fluidized bed boiler (CFB Boiler). Auxiliary power to operate the facility is estimated to be approximately 20 MW resulting in an approximate net power production capacity of 250 MW. Emissions from the CFB-Boiler are controlled by CFB limestone injection technology, a fabric filter baghouse (FFB), a hydrated ash re-injection system (HAR), and a selective non-catalytic reduction unit (SNCR). The total CFB-Boiler emission control strategy is characterized as an integrated emission control system (IECS). A complete list of permitted equipment/emission sources is contained in Section I.A of the permit analysis to this permit.

B. Plant Location

The SME-HGS plant encompasses approximately 720 acres of property and is located approximately 8 miles east of Great Falls, Montana, and approximately 1.5 miles southeast of the Morony Dam on the Missouri River. The legal description of the site is in Section 24 and 25, Township 21 North, Range 5 East, M.P.M., in Cascade County, Montana. The approximate universal transverse mercator (UTM) coordinates are Zone 12, Easting 297.8 kilometers (km), and Northing 5,070.1 km. The site elevation is approximately 3,290 feet above sea level.

C. Supplemental Preliminary Determination

The Department of Environmental Quality (Department) issued a preliminary determination on air quality Permit #3423-00 on March 30, 2006, and accepted comments on the preliminary determination through May 1, 2006. On April 25, 2006, Bison Engineering, Inc., on behalf of SME-HGS, verbally notified the Department of additional emitting units that were not previously analyzed and permitted under Preliminary Determination #3423-00 and are necessary for the construction and operation of the CFB Boiler. SME-HGS submitted an application for the proposed additional emitting units on May 16, 2006.

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Specifically, SME-HGS determined that during the CFB Boiler construction phase and periodically thereafter, as necessary, SME-HGS will need to operate portable/temporary propane-fired heaters for the purpose of curing the CFB Boiler refractory brick. In addition, the supplemental preliminary determination corrects various administrative errors contained in the initial preliminary determination. A more detailed discussion of the supplemental preliminary determination permit action is contained in the permit analysis to this permit.

All comments regarding the Department's initial preliminary determination issued for public comment on March 30, 2006, and received by May 1, 2006, have been accepted by the Department as applicable to this supplemental preliminary determination and subsequent comments on the same issues are not necessary. The only changes to the initial preliminary determination under the supplemental preliminary determination are related to the refractory brick curing heaters and administrative errors contained in the initial preliminary determination.

SECTION II: Conditions and Limitations

A. General Plant Requirements

1. SME-HGS shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304 and ARM 17.8.752).

2. SME-HGS shall not cause or authorize emissions to be discharged into the atmosphere from haul roads, access roads, parking lots, or the general plant property without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308 and ARM 17.8.752).

3. SME-HGS shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.2 (ARM 17.8.752).

4. SME-HGS shall not cause or authorize the production, handling, transportation, or storage of any material unless reasonable precautions to control emissions of airborne particulate matter are taken. Such emissions of airborne particulate matter from any stationary source shall not exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.308 and ARM 17.8.752).

5. SME-HGS shall comply with all applicable standards and limitations, and the reporting, monitoring, recordkeeping, testing, and notification requirements contained in 40 CFR 60, Subpart Da (ARM 17.8.340 and 40 CFR 60, Subpart Da).

6. SME-HGS shall comply with all applicable standards and limitations, and the reporting, monitoring, recordkeeping, testing, and notification requirements contained in 40 CFR 60, Subpart Db (ARM 17.8.340 and 40 CFR 60, Subpart Db).

7. SME-HGS shall comply with all applicable standards and limitations, and the reporting, monitoring, recordkeeping, testing, and notification requirements contained in 40 CFR 60, Subpart Y (ARM 17.8.340 and 40 CFR 60, Subpart Y).

8. SME-HGS shall comply with all applicable standards and limitations, and the reporting, monitoring, recordkeeping, testing, and notification requirements contained in 40 CFR 60, Subpart OOO (ARM 17.8.340 and 40 CFR 60, Subpart OOO).

9. SME-HGS shall comply with all applicable standards and limitations, and the reporting, monitoring, recordkeeping, testing, and notification requirements contained in 40 CFR 63, Subpart DDDDD, Industrial/Commercial/Institutional/ boiler and Process Heater MACT (ARM 17.8.342 and 40 CFR 63, Subpart DDDDD).

10. SME-HGS shall comply with all applicable standards and limitations, and the reporting, monitoring, recordkeeping, testing, and notification requirements contained in 40 CFR 63, Subpart ZZZZ, Reciprocating Internal Combustion Engines (RICE) MACT (ARM 17.8.342 and 40 CFR 63, Subpart ZZZZ).

11. SME-HGS shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements of the Acid Rain Program contained in 40 CFR 72-78 (ARM 17.8.1202 and 40 CFR 72-78).

12. SME-HGS shall obtain a written coal analysis that is representative of each load of coal received from each coal supplier. The analysis shall contain, at a minimum, sulfur content, ash content, Btu value (Btu/lb), mercury content, and chlorine content (ARM 17.8.749).

13. SME-HGS shall obtain a written fuel oil analysis for each shipment of fuel oil received from each fuel oil supplier. The analysis shall contain, at a minimum, the sulfur content of the fuel oil and the vapor pressure of the fuel oil (ARM 17.8.749).

B. CFB Boiler Start-Up and Shutdown Operations

1. The requirements contained in Section II.B shall apply during start-up and shutdown operations. CFB start-up and shutdown operations shall be conducted as specified in the *CFB Boiler Start-Up and Shutdown Procedures* included in Attachment 3 of Permit #3423-00 (ARM 17.8.749).

2. CFB Boiler start-up operations, as described in Attachment 3, shall not exceed 48 hours from initial fuel feed to the CFB Boiler (ARM 17.8.749).

3. During start-up and shutdown operations, the CFB Boiler may combust coal with a sulfur content less than or equal to 1% sulfur by weight , fuel oil with a sulfur content less than or equal to 0.05% sulfur by weight, or pipeline quality natural gas (ARM 17.8.752).

4. During start-up and shutdown operations, oxides of nitrogen (NO_x) emissions from the CFB Boiler stack shall not exceed 388 lb/hr (ARM 17.8.749).

5. During start-up and shutdown operations, carbon monoxide (CO) emissions from the CFB Boiler stack shall not exceed 194 lb/hr (ARM 17.8.749).

C. CFB Boiler

1. The CFB Boiler shall combust only coal with a sulfur content less than or equal to 1% sulfur by weight except during periods of start-up or shutdown (ARM 17.8.749 and ARM 17.8.752).

2. SME-HGS shall operate an IECS including CFB limestone injection technology, HAR technology, a SNCR unit, and a FFB for CFB Boiler emissions control except as specified in Attachment 3 during start-up and shutdown operations (ARM 17.8.752).

3. SME-HGS shall not cause or authorize to be discharged into the atmosphere from the CFB Boiler stack any visible emissions that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes except for one 6-minute period per hour of not greater than 27% opacity (ARM 17.8.340, ARM 17.8.752, and 40 CFR 60, Subpart Da).

4. Filterable particulate matter (filterable PM) emissions from the CFB Boiler stack shall be limited to 0.012 lb/MMBtu and 33.25 lb/hr (ARM 17.8.752).

5. Particulate matter with an aerodynamic diameter les than or equal to 10 microns (PM_{10}) emissions (filterable and condensable) from the CFB Boiler stack shall be limited to 0.026 lb/MMBtu and 72.04 lb/hr (ARM 17.8.752).

6. The CFB Boiler's PM_{10} emission limit shall be used as a surrogate emission limit for radionuclides and trace metals (ARM 17.8.752).

7. Except during periods of start-up and shutdown, NO_x emissions from the CFB Boiler stack shall not exceed the following:

   a. 0.10 lb/MMBtu based on a 1-hour average (ARM 17.8.749 and ARM 17.8.752);

   b. 0.09 lb/MMBtu based on a 24-hour average (ARM 17.8.749 and ARM 17.8.752); and

   c. 0.07 lb/MMBtu based on a rolling 30-day average (ARM 17.8.752).

8. Except during periods of start-up and shutdown, CO emissions from the CFB Boiler stack shall be controlled by proper boiler design and good combustion practices. CO emissions from the CFB Boiler stack shall not exceed 0.10 lb/MMBtu averaged over any 1-hour time period (ARM 17.8.752).

9. Sulfur dioxide (SO_2) emissions from the CFB Boiler stack shall not exceed the following:

   a. 0.057 lb/MMBtu based on a 3-hour average (ARM 17.8.749 and ARM 17.8.752);

   b. 0.048 lb/MMBtu based on a 24-hour average (ARM 17.8.749 and ARM 17.8.752); and

   c. 0.038 lb/MMBtu based on a rolling 30-day average (ARM 17.8.752).

10. Volatile Organic Compounds (VOC) emissions from the CFB Boiler stack shall be controlled by proper boiler design and good combustion practices. VOC emissions from the Boiler stack shall not exceed 0.003 lb/MMBtu averaged over any 1-hour time period (ARM 17.8.752).

11. Hydrochloric acid (HCl) emissions from the CFB Boiler stack shall not exceed 0.0021 lb/MMBtu averaged over any 1-hour time period (ARM 17.8.752).

12. Hydrofluoric acid (HF) emissions from the CFB Boiler stack shall not exceed 0.0017 lb/MMBtu averaged over any 1-hour time period (ARM 17.8.752).

13. Sulfuric Acid (H_2SO_4) mist emissions from the CFB Boiler stack shall not exceed 0.0054 lb/MMBtu averaged over any 1-hour time period (ARM 17.8.752).

14. Mercury Emissions

    a. Following commencement of commercial operations (as defined in 40 CFR 60, Subpart HHHH), at the operator's choice, mercury emissions from the CFB Boiler shall not exceed 0.0000015 lb/MMBtu (1.5 pounds per trillion Btu (lb/TBtu)) based on a rolling 12-month average, or an emission rate equal to a 90% or greater reduction of mercury in the as-fired coal, as measured in lb/TBtu and based on a rolling 12-month average. Mercury emissions from the CFB Boiler shall be controlled by the IECS or, at SME-HGS's request and as may be approved by the Department in writing, an equivalent technology (equivalent in removal efficiency) (ARM 17.8.752).

    b. If SME-HGS is unable to comply with the mercury limits, within 18 months after commencement of commercial operations (as defined in 40 CFR 60, Subpart HHHH), SME-HGS shall install and operate an activated carbon injection control system or, at SME-HGS's request and as may be approved by the Department in writing, an equivalent technology (equivalent in removal efficiency) to comply with the applicable mercury emission limits (ARM 17.8.752).

15. Heat input to the CFB-Boiler shall not exceed 23,004,636 MMBtu during any rolling 12-month time period (ARM 17.8.749).

16. The CFB Boiler stack height shall, at a minimum, be maintained at 400 feet above ground level (ARM 17.8.749).

D. Auxiliary Boiler

1. The Auxiliary Boiler shall be limited to 850 hours of operation during any rolling 12-month time period (ARM 17.8.752 and 40 CFR 60, Subpart Db).

2. The Auxiliary Boiler shall combust only fuel-oil with a sulfur content less than or equal to 0.05% sulfur by weight, propane, or pipeline quality natural gas (ARM 17.8.752).

3. SO_2 emissions from the Auxiliary Boiler shall be limited to 12.63 lb/hr (ARM 17.8.749).

4. NO_x emissions from the Auxiliary Boiler shall be controlled by the installation and operation of dry low-NO_x (DLN) burners. NO_x emissions from the Auxiliary Boiler shall be limited to 46.80 lb/hr (ARM 17.8.749 and ARM 17.8.752).

5. CO emissions from the Auxiliary Boiler shall be controlled by proper boiler design and operation and good combustion practices. CO emissions from the Auxiliary Boiler shall be limited to 18.60 lb/hr (ARM 17.8.749 and ARM 17.8.752).

6. VOC emissions from the Auxiliary Boiler shall be controlled by proper boiler design and operation and good combustion practices (ARM 17.8.752).

7. PM_{10} emissions from the Auxiliary Boiler shall be limited to 3.20 lb/hr (ARM 17.8.749).

8. The Auxiliary Boiler stack height shall, at a minimum, be maintained at 220 feet above ground level (ARM 17.8.749).

E. Coal Fuel Processing, Handling, Transfer, and Storage Operations

1. Visible emissions from any Standards of Performance for New Stationary Source (NSPS)-affected equipment shall not exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.340, ARM 17.8.752, and 40 CFR 60, Subpart Y).

2. All conveyors shall be covered and all outdoor conveyor transfer points shall be covered and vented to a FFB (ARM 17.8.752).

3. All railcar coal deliveries/transfers shall be unloaded within the Rail Unloading Building via belly-dump to a below grade hopper. The Railcar Unloading Building shall be vented to FFB DC1 and maintained under constant negative pressure when coal is being unloaded and conveyed within the building (ARM 17.8.752).

4. PM_{10} emissions from FFB DC1 shall be limited to 0.005 gr/dscf (ARM 17.8.752).

5. All coal deliveries to the Railcar Unloading Building shall be transferred via below ground feeders to a belt conveyor (MC02) (ARM 17.8.752).

6. Transfer Tower 16 shall be enclosed and vented to FFB DC2 (ARM 17.8.752).

7. PM_{10} emissions from FFB DC2 shall be limited to 0.005 gr/dscf (ARM 17.8.752).

8. The emergency coal pile shall be compacted and sprayed with water and/or chemical dust suppressant, as necessary, to maintain compliance with the reasonable precautions requirement and opacity limits (ARM 17.8.752).

9. Coal Silo (CS-1) shall be enclosed and vented to FFB DC2 (ARM 17.8.752).

10. The Coal Crusher House shall be vented to FFB DC3 and shall be maintained under constant negative pressure when processing coal (ARM 17.8.752).

11. The coal crushers (2), surge bin, and rotary feeders (2) shall be enclosed within the Coal Crusher House and vented to FFB D3 (ARM 17.8.752).

12. PM_{10} emissions from FFB D3 shall be limited to 0.005 gr/dscf (ARM 17.8.752).

13. All coal transfers through the tripper system to the day bins located in the CFB Boiler house shall be enclosed and routed to FFB DC4 (ARM 17.8.752).

14. PM_{10} emissions from FFB DC4 shall be limited to 0.005 gr/dscf (ARM 17.8.752).

F. Limestone and Lime Material Processing, Handling, Transfer, and Storage Operations

1. Visible emissions from any NSPS-affected crusher shall not exhibit an opacity of 15% or greater averaged over 6 consecutive minutes (ARM 17.8.340, ARM 17.8.752, and 40 CFR 60, Subpart OOO).

2. Visible emissions from any other NSPS-affected equipment, such as screens or conveyor transfers, shall not exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.340, ARM 17.8.752, and 40 CFR 60, Subpart OOO).

3. All limestone material shall be delivered to the facility via covered bottom dumping haul-trucks and unloaded within a limestone material unloading drive-through building. The limestone material unloading drive-through building shall be maintained under constant negative pressure and vented through FFB DC5 when limestone material is being unloaded and conveyed within the drive-through building (ARM 17.8.752).

4. All conveyors shall be covered and all outdoor conveyor transfer points shall be covered and vented to FFB DC5 (ARM 17.8.752).

5. All limestone material transfers to the Bucket Elevator and the Limestone Silo shall be vented to FFB DC5 (ARM 17.8.752).

6. PM_{10} emissions from FFB DC5 shall be limited to 0.005 gr/dscf (ARM 17.8.752).

7. Visible emissions from FFB DC5 shall not exhibit an opacity of greater than 7% averaged over 6 consecutive minutes (ARM 17.8.340, ARM 17.8.752, and 40 CFR 60, Subpart OOO).

G. Fly and Bottom-Ash Material Processing, Handling, Transfer, and Storage Operations

1. Fly-ash shall be pneumatically transferred from the CFB Boiler FFB to the Fly-Ash Silo (AS1) (ARM 17.8.752).

2. Bed-ash shall be pneumatically transferred from the CFB Boiler to the Bed-Ash Silo (AS2) (ARM 17.8.752).

3. PM_{10} emissions resulting from the charging of AS1 and AS2 shall be controlled by fabric filter Bin vents DC6 and DC7, respectively (ARM 17.8.752).

4. Fly-ash and bed-ash shall be gravity-fed into haul trucks through a wet pug-mill for transfer to the on-site ash monofill/landfill (ARM 17.8.752).

5. Air displaced by ash loading into haul trucks shall be vented through AS1 and AS2 and associated bin vents DC6 and DC7, respectively (ARM 17.8.752).

6. PM_{10} emissions from each bin vent DC6 and DC7 shall be limited to 0.01 gr/dscf (ARM 17.8.752).

7. Visible emissions from bin vent DC6 and DC7 shall not exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.752).

H. Coal Thawing Shed Operations

1. The Coal Thawing Shed Heater shall be limited to 240 hours of operation during any rolling 12-month time period (ARM 17.8.749 and ARM 17.8.752).

2. The Coal Thawing Shed Heater shall combust only propane or pipeline quality natural gas (ARM 17.8.752).

3. NO_x, SO_2, CO, VOC, and PM_{10} emissions from the Coal Thawing Shed Heater operations shall be controlled by proper design and operation, good combustion practices, and the combustion of propane and pipeline quality natural gas only (ARM 17.8.752).

I. Emergency Fire Pump Operations

1. The Emergency Fire Pump shall be limited to 500 hours of operation during any rolling 12-month time period (ARM 17.8.749 and ARM 17.8.752).

2. The Emergency Fire Pump shall combust only fuel oil with a sulfur content less than or equal to 0.05% sulfur by weight (ARM 17.8.752).

3. NO_x, SO_2, CO, VOC, and PM_{10} emissions from the Emergency Fire Pump shall be controlled by proper design and operation and good combustion practices (ARM 17.8.752).

J. Emergency Generator Operations

1. The Emergency Generator shall be limited to 500 hours of operation during any rolling 12-month time period (ARM 17.8.749 and ARM 17.8.752).

2. The Emergency Generator shall combust only fuel oil with a sulfur content less than or equal to 0.05% sulfur by weight (ARM 17.8.752).

3. NO_x, SO_2, CO, VOC, and PM_{10} emissions from the Emergency Generator shall be controlled by proper design and operation and good combustion practices (ARM 17.8.752).

4. NO_x emissions from the Emergency Generator shall be limited to 41.20 lb/hr (ARM 17.8.749 and ARM 17.8.752).

5. CO emissions from the Emergency Generator shall be limited to 2.70 lb/hr (ARM 17.8.749 and ARM 17.8.752).

K. Cooling Tower

1. PM_{10} emissions from the Cooling Tower shall be controlled by drift eliminators (ARM 17.8.752).

2. The Cooling Tower drift rate shall be limited to 0.002% of the total circulating water flow (ARM 17.8.752).

L. Fuel Storage Tank

SME-HGS shall not store any liquid fuel with a vapor pressure greater than 3.5 kilopascals (kPa) in the 275,000-gallon capacity fuel storage tank (ARM 17.9.749).

M. CFB Boiler Refractory Brick Curing Heaters

1. SME-HGS shall operate the CFB Boiler refractory brick curing heater(s) only for the purpose of curing CFB Boiler refractory brick. The CFB Boiler refractory brick curing heater(s) shall be limited to a combined maximum of 320 hours of operation during any rolling 12-month time period (ARM 17.8.752).

2. The CFB Boiler refractory brick curing heaters shall combust propane fuel only (ARM 17.8.752).

3. The CFB Boiler refractory brick curing heater(s) shall be limited to a combined maximum heat input capacity of 2771 MMBtu/hr (ARM 17.8.749).

4. SME-HGS shall not operate the CFB Boiler refractory brick curing heater(s) when electricity is being generated through CFB Boiler operations or when the boiler fuel feed (diesel or coal) is operational (ARM 17.8.749).

N. Testing Requirements

1. CFB Boiler Testing Requirements

    a. SME-HGS shall initially test the CFB Boiler for opacity within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial startup of the CFB Boiler, or according to another testing/monitoring schedule as may be approved by the Department in writing (ARM 17.8.105, ARM 17.8.749, and 40 CFR 60, Subpart Da).

       After the initial source test, SME-HGS shall use the data from the continuous opacity monitoring system (COMS) to monitor compliance with the applicable opacity limit (ARM 17.8.749).

    b. SME-HGS shall initially test the CFB Boiler for filterable PM emissions within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial startup of the CFB Boiler, or according to another testing/monitoring schedule as may be approved by the Department in writing (ARM 17.8.105, ARM 17.8.749, and 40 CFR 60, Subpart Da).

After the initial source test, additional testing shall continue on an annual basis, or according to another testing/monitoring schedule as may be approved by the Department in writing (ARM 17.8.105 and ARM 17.8.749).

c. SME-HGS shall initially test the CFB Boiler for PM_{10} (filterable and condensable) emissions within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial startup of the CFB Boiler, or according to another testing/monitoring schedule as may be approved by the Department in writing (ARM 17.8.105 and ARM 17.8.749).

After the initial source test, additional testing shall continue on an annual basis, or according to another testing/monitoring schedule as may be approved by the Department in writing (ARM 17.8.105 and ARM 17.8.749).

d. SME-HGS shall initially test the CFB Boiler for NO_x emissions within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial startup of the CFB Boiler, or according to another testing/monitoring schedule as may be approved by the Department in writing. SME-HGS shall conduct the initial performance source testing for NO_x and CO, concurrently (ARM 17.8.105, ARM 17.8.749, and 40 CFR 60, Subpart Da).

After the initial source test, SME-HGS shall use the data from the NO_x continuous emissions monitoring system (CEMS) to monitor compliance with the applicable NO_x emission limits (ARM 17.8.105 and ARM 17.8.749).

e. SME-HGS shall initially test the CFB Boiler for CO emissions within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial startup of the CFB Boiler, or according to another testing/monitoring schedule as may be approved by the Department in writing. SME-HGS shall conduct the initial performance source testing for CO and NO_x, concurrently (ARM 17.8.105 and ARM 17.8.749).

After the initial source test, additional testing shall continue on an annual basis, or according to another testing/monitoring schedule as may be approved by the Department in writing (ARM 17.8.105 and 17.8.749).

f. SME-HGS shall initially test the CFB Boiler for SO_2 emissions within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial startup of the CFB Boiler, or according to another testing/monitoring schedule as may be approved by the Department in writing (ARM 17.8.105, ARM 17.8.749, and 40 CFR 60, Subpart Da).

After the initial source test, SME-HGS shall use the data from the SO_2 CEMS to monitor compliance with the applicable SO_2 emission limits (ARM 17.8.749).

g. SME-HGS shall initially test the CFB Boiler for HCl emissions within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial startup of the CFB Boiler, or according to another testing/monitoring schedule as may be approved by the Department in writing (ARM 17.8.105 and ARM 17.8.749).

After the initial source test, additional testing shall continue on an every 5-year basis, or according to another testing/monitoring schedule as may be approved by the Department in writing (ARM 17.8.105 and ARM 17.8.749).

h. SME-HGS shall initially test the CFB Boiler for HF emissions within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial startup of the CFB Boiler, or according to another testing/monitoring schedule as may be approved by the Department in writing (ARM 17.8.105 and ARM 17.8.749).

After the initial source test, additional testing shall continue on an every 5-year basis, or according to another testing/monitoring schedule as may be approved by the Department in writing (ARM 17.8.105 and 17.8.749).

i. SME-HGS shall initially test the CFB Boiler for H_2SO_4 emissions within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial startup of the CFB Boiler, or according to another testing/monitoring schedule as may be approved by the Department in writing (ARM 17.8.105 and ARM 17.8.749).

After the initial source test, additional testing shall continue on an every 5-year basis, or according to another testing/monitoring schedule as may be approved by the Department in writing (ARM 17.8.105 and ARM 17.8.749).

j. Pursuant to 40 CFR 60.48a through 60.52a and 40 CFR 75, Subpart I, SME-HGS shall monitor compliance with the applicable mercury emission limit(s). Any mercury CEMS used must be operated in compliance with 40 CFR 60, Appendix B (ARM 17.8.105, ARM 17.8.749, 40 CFR 60, Subpart Da, and 40 CFR 75, Subpart I)

2. Coal Fuel, Limestone, and Ash Processing, Handling, Transfer, and Storage Operations Testing Requirements

a. Compliance with the opacity limit for FFB DC1, controlling emissions from rail unloading material transfers, shall be monitored by an initial performance source test conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial startup, or according to another testing/monitoring schedule as may be approved by the Department in writing. After the initial source test, testing shall continue as required by the Department (ARM 17.8.105, ARM 17.8.340, ARM 17.8.749, and 40 CFR 60, Subpart Y).

b. Compliance with the PM_{10} emission limit for FFB DC1 shall be monitored by an initial performance source test conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial startup, or according to another testing/monitoring schedule as may be approved by the Department in writing. After the initial source test, testing shall continue on an annual basis, or according to another testing/monitoring schedule as may be approved by the Department in writing (ARM 17.8.105, ARM 17.8.340, ARM 17.8.749, and 40 CFR 60, Subpart Y).

c. Compliance with the opacity limit for FFB DC2, controlling emissions from coal silo material transfers, shall be monitored by an initial performance source test conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial startup, or according to another testing/monitoring schedule as may be approved by the Department in writing. After the initial source test, testing shall continue as required by the Department (ARM 17.8.105, ARM 17.8.340, ARM 17.8.749, and 40 CFR 60, Subpart Y).

d. Compliance with the PM_{10} emission limit for FFB DC2 shall be monitored by an initial performance source test conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial startup, or according to another testing/ monitoring schedule as may be approved by the Department in writing. After the initial source test, testing shall continue on an every 2-year basis, or according to another testing/monitoring schedule as may be approved by the Department in writing (ARM 17.8.105, ARM 17.8.340, ARM 17.8.749, and 40 CFR 60, Subpart Y).

e. Compliance with the opacity limit for FFB DC3, controlling emissions from coal crusher material transfers, shall be monitored by an initial performance source test conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial startup, or according to another testing/monitoring schedule as may be approved by the Department in writing. After the initial source test, testing shall continue as required by the Department (ARM 17.8.105, ARM 17.8.340, ARM 17.8.749, and 40 CFR 60, Subpart Y).

f. Compliance with the PM_{10} emission limit for FFB DC3 shall be monitored by an initial performance source test conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial startup, or according to another testing/ monitoring schedule as may be approved by the Department in writing. After the initial source test, testing shall continue on an every 2-year basis, or according to another testing/monitoring schedule as may be approved by the Department in writing (ARM 17.8.105, ARM 17.8.340, ARM 17.8.749, and 40 CFR 60, Subpart Y).

g. Compliance with the opacity limit for FFB DC4, controlling emissions from tripper deck plant silos material transfers, shall be monitored by an initial performance source test conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial startup, or according to another testing/monitoring schedule as may be approved by the Department in writing. After the initial source test, testing shall continue as required by the Department (ARM 17.8.105, ARM 17.8.340, ARM 17.8.749, and 40 CFR 60, Subpart Y and Subpart OOO).

h. Compliance with the PM_{10} emission limit for FFB DC4 shall be monitored by an initial performance source test conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial startup, or according to another testing/

monitoring schedule as may be approved by the Department in writing. After the initial source test, testing shall continue on an every 2-year basis, or according to another testing/monitoring schedule as may be approved by the Department in writing (ARM 17.8.105, ARM 17.8.340, ARM 17.8.749, and 40 CFR 60, Subpart Y and Subpart OOO).

i. Compliance with the opacity limit for FFB DC5, controlling emissions from limestone material transfers, shall be monitored by an initial performance source test conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial startup, or according to another testing/monitoring schedule as may be approved by the Department in writing. After the initial source test, testing shall continue as required by the Department (ARM 17.8.105, ARM 17.8.340, ARM 17.8.749, and 40 CFR 60, Subpart OOO).

j. Compliance with the PM_{10} emission limit for FFB DC5 shall be monitored by an initial performance source test conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial startup, or according to another testing/monitoring schedule as may be approved by the Department in writing. After the initial source test, testing shall continue on an every 2-year basis, or according to another testing/monitoring schedule as may be approved by the Department in writing (ARM 17.8.105, ARM 17.8.340, ARM 17.8.749, and 40 CFR 60, Subpart OOO).

k. Compliance with the opacity limit for Bin vent DC6, controlling emissions from ash silo material transfers, shall be monitored by an initial performance source test conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial startup, or according to another testing/monitoring schedule as may be approved by the Department in writing. After the initial source test, testing shall continue as required by the Department (ARM 17.8.105 and ARM 17.8.749).

l. Compliance with the opacity limit for bin vent DC7, controlling emissions from ash silo material transfers, shall be monitored by an initial performance source test conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial startup, or according to another testing/monitoring schedule as may be approved by the Department in writing. After the initial source test, testing shall continue as required by the Department (ARM 17.8.105 and ARM 17.8.749)

3. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

4. The Department may require further testing (ARM 17.8.105).

O. Operational Reporting Requirements

1. SME-HGS shall submit to the Department annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

   Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. SME-HGS shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location or fuel specifications, or that would result in an increase in source capacity above its permitted operation or the addition of a new emission unit. The notice must be submitted to the Department, in writing, at least 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).

3. All records compiled in accordance with this permit must be maintained by SME-HGS as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

4. SME-HGS shall document, by month, the total heat input to the CFB Boiler. By the 25th day of each month, SME-HGS shall total heat input to the CFB Boiler for the previous month. The monthly information will be used to verify compliance with the rolling 12-month boiler heat input limitation (ARM 17.8.749).

5. SME-HGS shall document, by month, the hours of operation of the Auxiliary Boiler. By the 25th day of each month, SME-HGS shall total the operating hours of the Auxiliary Boiler for the previous month. The monthly information will be used to verify compliance with the applicable rolling 12-month limitation (ARM 17.8.749).

6. SME-HGS shall document, by month, the hours of operation of the Emergency Generator. By the 25th day of each month, SME-HGS shall total the operating hours of the Emergency Generator for the previous month. The monthly information will be used to verify compliance with the applicable rolling 12-month limitation (ARM 17.8.749).

7. SME-HGS shall document, by month, the hours of operation of the Emergency Fire Water Pump. By the 25th day of each month, SME-HGS shall total the operating hours of the Emergency Fire Water Pump for the previous month. The monthly information will be used to verify compliance with the applicable rolling 12-month limitation (ARM 17.8.749).

8. SME-HGS shall document, by month, the hours of operation of the Coal Thawing Shed Heater. By the 25th day of each month, SME-HGS shall total the operating hours of the Coal Thawing Shed Heater for the previous month. The monthly information will be used to verify compliance with the applicable rolling 12-month limitation (ARM 17.8.749).

9. SME-HGS shall maintain on site the coal fuel and fuel oil analyses required under Section II.A and submit this information to the Department upon request (ARM 17.8.749).

10. SME-HGS shall maintain a record of CFB Boiler start-up operations. SME-HGS shall document the total start-up operating hours from initial fuel feed to the CFB Boiler for each start-up period. The information shall be submitted to the Department upon request. The information will be used to monitor compliance with the CFB Boiler start-up operating hour limit (ARM 17.8.749).

11. SME-HGS shall monitor and analyze the CFB Boiler mercury control performance data following commencement of commercial operations (as defined in 40 CFR 60, Subpart HHHH). By the 25th day of each month, SME-HGS shall summarize the applicable mercury emissions data (percent reduction and/or emission rate). SME-HGS shall submit this information to the Department quarterly, or according to another reporting schedule as may be approved by the Department. The information will be used to verify the IECS mercury control capabilities (ARM 17.8.749).

12. SME-HGS shall document, by month, the hours of operation of the refractory brick curing heaters. By the 25th day of each month, SME-HGS shall total the operating hours of the refractory brick curing heaters for the previous month. The monthly information will be used to verify compliance with the applicable rolling 12-month limitation (ARM 17.8.749).

P. Continuous Emissions Monitoring Systems (CEMS/COMS)

1. SME-HGS shall install, operate, calibrate, and maintain CEMS as follows:

    a. A CEMS for the measurement of SO_2 shall be operated on the CFB Boiler stack (ARM 17.8.105, ARM 17.8.749 and 40 CFR 72-78).

    b. A flow monitoring system to complement the SO_2 monitoring system shall be operated on the CFB Boiler stack (ARM 17.8.105 and 40 CFR 72-78).

    c. A CEMS for the measurement of NO_x shall be operated on the CFB Boiler stack (ARM 17.8.105, ARM 17.8.749 and 40 CFR 72-78).

    d. A COMS for the measurement of opacity shall be operated on the CFB Boiler stack (ARM 17.8.105, ARM 17.8.749 and 40 CFR 72-78).

    e. A CEMS for the measurement of oxygen (O_2) or carbon dioxide (CO_2) content shall be operated on the CFB-Boiler stack (ARM 17.8.105 and ARM 17.8.749).

    f. A CEMS for the measurement of mercury shall be operated on the CFB-Boiler stack (ARM 17.8.105 and ARM 17.8.749).

2. SME-HGS shall determine CO_2 emissions from the CFB Boiler Stack by one of the methods listed in 40 CFR 75.10 (40 CFR 72-78).

3. All continuous monitors required by this permit and by 40 CFR Part 60 shall be operated, excess emissions reported, and performance tests conducted in accordance with the requirements of 40 CFR Part 60, Subpart A; 40 CFR Part 60, Subpart Da; 40 CFR Part 60, Appendix B (Performance Specifications #1, #2, and #3); and 40 CFR Part 72-78, as applicable (ARM 17.8.749 and 40 CFR 72-78).

4. On-going quality assurance for the gas CEMS must conform to 40 CFR Part 60, Appendix F (ARM 17.8.749).

5. SME-HGS shall inspect and audit the COMS annually, using neutral density filters. SME-HGS shall conduct these audits using the applicable procedures and forms in the EPA Technical Assistance Document: Performance Audit Procedures for Opacity Monitors (EPA-450/4-92-010, April 1992). The results of these inspections and audits shall be included in the quarterly excess emission report (ARM 17.8.749).

6. SME-HGS shall maintain a file of all measurements from the CEMS, and performance testing measurements: all CEMS performance evaluations; all CEMS or monitoring device calibration checks and audits; and adjustments and maintenance performed on these systems or devices, recorded in a permanent form suitable for inspection. The records shall be retained on site for at least 5 years following the date of such measurements and reports. SME-HGS shall supply these records to the Department upon request (ARM 17.8.749).

7. SME-HGS shall maintain a file of all measurements from the COMS, and performance testing measurements: all COMS performance evaluations; all COMS or monitoring device calibration checks and audits; and adjustments and maintenance performed on these systems or devices, recorded in a permanent form suitable for inspection. The records shall be retained on site for at least 5 years following the date of such measurements and reports. SME-HGS shall supply these records to the Department upon request (ARM 17.8.749).

Q. Notification

1. Within 30 days after commencement of construction of the SME-HGS facility, SME-HGS shall notify the Department of the date of commencement of construction (ARM 17.8.749)

2. Within 30 days after commencement of construction of the CFB Boiler, SME-HGS shall notify the Department of the date of commencement of construction (40 CFR Part 60.7 and ARM 17.8.749)

3. Within 15 days after actual startup of the CFB Boiler, SME-HGS shall notify the Department of the date of actual startup (40 CFR Part 60.7 and ARM 17.8.749).

4. Within 30 days after commencement of construction of the Auxiliary Boiler, SME-HGS shall notify the Department of the date of commencement of construction (40 CFR Part 60.7 and ARM 17.8.749)

5. Within 15 days after actual startup of the Auxiliary Boiler, SME-HGS shall notify the Department of the date of actual startup (40 CFR Part 60.7 and ARM 17.8.749).

6. Within 30 days after commencement of construction of material handling/processing fabric filter baghouses DC1, DC2, DC3, DC4, and DC5, SME-HGS shall notify the Department of the date of commencement of construction of the affected fabric filter baghouse(s) (40 CFR 60.7 and ARM 17.8.749).

7. Within 15 days after actual startup of material handling/processing fabric filter baghouses DC1, DC2, DC3, DC4, and DC5, SME-HGS shall notify the Department of the date of actual startup of the affected fabric filter baghouse(s) (40 CFR 60.7 and ARM 17.8.749).

8. Within 30 days after commencement of construction of the ash silo fabric filter bin vents DC6 and DC7, respectively, SME-HGS shall notify the Department of the date of commencement of construction of the affected fabric filter bin vent(s) (ARM 17.8.749).

9. Within 15 days after actual startup of the ash silo fabric filter bin vents DC6 and DC7, respectively, SME-HGS shall notify the Department of the date of actual startup of the affected fabric filter bin vent(s) (ARM 17.8.749).

10. Within 30 days after commencement of construction of the CFB Boiler refractory brick curing heater(s), SME-HGS shall notify the Department of the date of commencement of construction of the affected unit(s) and provide the maximum heat input capacity of the affected unit(s) (ARM 17.8.749).

11. Within 15 days after actual startup of the CFB Boiler refractory brick curing heater(s), SME-HGS shall notify the Department of the date of actual startup of the affected fabric filter bin unit(s) (ARM 17.8.749).

SECTION III: General Conditions

A. Inspection – SME-HGS shall allow the Department's representatives access to the facility at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS, COMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if SME-HGS fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving SME-HGS of the responsibility for complying with any applicable federal or Montana statute or rule, except as specifically provided in ARM 17.8.740, *et seq*. (ARM 17.8.756).

D. Enforcement – Violations of requirements contained herein may constitute grounds for permit revocation, penalties, or other enforcement action as specified in Section 75-2-401, *et seq*., MCA, and ARM 17.8.763.

E. Appeals – Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of

Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department's decision on the application is final 16 days after the Department's decision is made.

F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by the Department at the location of the source.

G. Permit Fee – Pursuant to Section 75-2-220, MCA, as amended by the 2005 Legislature, failure by SME-HGS to pay the annual operation fee may be grounds for revocation of this permit, as allowed by that section and rules adopted thereunder by the Board.

H. Construction Commencement – Construction must begin within 3 years after permit issuance and proceed with due diligence until the project is complete or Permit #3423-00 shall expire. If the permit expires, SME-HGS shall not commence construction until SME-HGS has applied for and received a new air quality permit pursuant to Sections 75-2-204 and 75-2-211, Montana Code Annotated, and ARM 17.8.740 *et seq*., as amended (ARM 17.8.762).

Attachment 2

INSTRUCTIONS FOR COMPLETING EXCESS EMISSION REPORTS (EER)

PART 1 Complete as shown. Report total time during the reporting period in hours. The determination of plant operating time (in hours) includes time during unit start up, shut down, malfunctions, or whenever pollutants of any magnitude are generated, regardless of unit condition or operating load.

Excess emissions include all time periods when emissions, as measured by the CEMS, exceed any applicable emission standard for any applicable time period.

Percent of time in compliance is to be determined as:

(1 – (total hours of excess emissions during reporting period / total hours of CEMS availability during reporting period)) x 100

PART 2 Complete as shown. Report total time the point source operated during the reporting period in hours. The determination of point source operating time includes time during unit start up, shut down, malfunctions, or whenever pollutants (of any magnitude) are generated, regardless of unit condition or operating load.

Percent of time CEMS was available during point source operation is to be determined as:

(1–(CEMS downtime in hours during the reporting period[a] /total hours of point source operation during reporting period)) x 100

a - All time required for calibration and to perform preventative maintenance must be included in the CEMS downtime.

PART 3 Complete a separate sheet for each pollutant control device. Be specific when identifying control equipment operating parameters. For example: number of TR units, energizers for electrostatic precipitators (ESP); pressure drop and effluent temperature for baghouses; and bypass flows and pH levels for scrubbers. For the initial EER, include a diagram or schematic for each piece of control equipment.

PART 4 Use Table I as a guideline to report all excess emissions. Complete a separate sheet for each monitor. Sequential numbering of each excess emission is recommended. For each excess emission, indicate: 1) time and duration, 2) nature and cause, and 3) action taken to correct the condition of excess emissions. Do not use computer reason codes for corrective actions or nature and cause; rather, be specific in the explanation. If no excess emissions occur during the quarter, it must be so stated.

PART 5 Use Table II as a guideline to report all CEM system upsets or malfunctions. Complete a separate sheet for each monitor. List the time, duration, nature and extent of problems, as well as the action taken to return the CEM system to proper operation. Do not use reason codes for nature, extent or corrective actions. Include normal calibrations and maintenance as prescribed by the monitor manufacturer. Do not include zero and span checks.

PART 6 Complete a separate sheet for each pollutant control device. Use Table III as a guideline to report operating status of control equipment during the excess emission. Follow the number sequence as recommended for excess emissions reporting. Report operating parameters consistent with Part 3, Subpart e.

PART 7 Complete a separate sheet for each monitor. Use Table IV as a guideline to summarize excess emissions and monitor availability.

PART 8 Have the person in charge of the overall system and reporting certify the validity of the report by signing in Part 8.

Attachment 2

EXCESS EMISSIONS REPORT

PART 1 – General Information

a. Emission Reporting Period ______________________

b. Report Date ______________________

c. Person Completing Report ______________________

d. Plant Name ______________________

e. Plant Location ______________________

f. Person Responsible for Review and Integrity of Report ______________________

g. Mailing Address for 1.f. ______________________

____

h. Phone Number of 1.f. ______________________

i. Total Time in Reporting Period ______________________

j. Total Time Plant Operated During Quarter ______________________

k. Permitted Allowable Emission Rates: Opacity ______________________

SO_2 __________ NO_x __________ TRS __________

l. Percent of Time Out of Compliance: Opacity ______________________

SO_2 __________ NO_x __________ TRS __________

m. Amount of Product Produced During Reporting Period ______________________

n. Amount of Fuel Used During Reporting Period ______________________

PART 2 - Monitor Information: Complete for each monitor.

a. Monitor Type (circle one)

Opacity SO_2 NO_x O_2 CO_2 TRS Flow

b. Manufacturer ____________________

c. Model No. ____________________

d. Serial No. ____________________

e. Automatic Calibration Value: Zero__________ Span __________

f. Date of Last Monitor Performance Test ____________________

g. Percent of Time Monitor Available:

1) During reporting period ____________________

2) During plant operation ____________________

h. Monitor Repairs or Replaced Components Which Affected or Altered Calibration Values ____________________

i. Conversion Factor (f-Factor, etc.) ____________________

j. Location of monitor (e.g. control equipment outlet)____________________

PART 3 - Parameter Monitor of Process and Control Equipment. (Complete one sheet for each pollutant.)

a. Pollutant (circle one):

Opacity SO_2 NO_x TRS

b. Type of Control Equipment ____________________

c. Control Equipment Operating Parameters (i.e., delta P, scrubber water flow rate, primary and secondary amps, spark rate)

____

d. Date of Control Equipment Performance Test ____________________

e. Control Equipment Operating Parameter During Performance Test

____

____

____

____

PART 4 - Excess Emission (by Pollutant)

Use Table I: Complete table as per instructions. Complete one sheet for each monitor.

PART 5 - Continuous Monitoring System Operation Failures

Use Table II: Complete table as per instructions. Complete one sheet for each monitor.

PART 6 - Control Equipment Operation During Excess Emissions

Use Table III: Complete as per instructions. Complete one sheet for each pollutant control device.

PART 7 - Excess Emissions and CEMS performance Summary Report

Use Table IV: Complete one sheet for each monitor.

PART 8 - Certification for Report Integrity, by person in 1.f.

THIS IS TO CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THE INFORMATION PROVIDED IN THE ABOVE REPORT IS COMPLETE AND ACCURATE.

SIGNATURE ____

NAME ____

TITLE ____

DATE ____

Attachment 2

TABLE I

EXCESS EMISSIONS

Date	Time From	To	Duration	Magnitude	Explanation/Corrective Action

Attachment 2

TABLE II

CONTINUOUS MONITORING SYSTEM OPERATION FAILURES

Date	Time From	To	Duration	Problem/Corrective Action

Attachment 2

TABLE III

CONTROL EQUIPMENT OPERATION DURING EXCESS EMISSIONS

Date	Time From	Time To	Duration	Operating Parameters	Corrective Action

Attachment 2

TABLE IV

Excess Emission and CEMS Performance Summary Report

Pollutant (circle one): SO_2 NO_x TRS H_2S CO Opacity

Monitor ID

Emission data summary [1]	**CEMS performance summary** [1]
1. Duration of excess emissions in reporting period due to: a. Startup/shutdown b. Control equipment problems c. Process problems d. Other known causes e. Unknown causes 2. Total duration of excess emissions 3. $\left[\dfrac{\text{Total duration of excess emissions}}{\text{Total time CEM operated}} \times 100 = \right]$	1. CEMS[2] downtime in reporting due to: a. Monitor equipment malfunctions b. Non-monitor equipment malfunctions c. Quality assurance calibration d. Other known causes e. Unknown causes 2. Total CEMS downtime 3. $\left[\dfrac{\text{Total CEMS downtime}}{\text{Total time source emitted}} \times 100 = \right]$

[1] For opacity, record all times in minutes. For gases, record all times in hours. Fractions are acceptable (e.g., 4.06 hours)
[2] CEMS downtime shall be regarded as any time CEMS is not measuring emissions.

Attachment 3
CFB Boiler Start-Up and Shutdown Procedures
Permit #3423-00

The requirements contained in Section II.B of Montana Air Quality Permit #3423-00 shall apply during CFB Boiler start-up and shutdown operations. CFB Boiler start-up and shutdown operations shall be conducted as specified in this attachment.

I. CFB Boiler Startup

Startup of a circulating fluidized bed (CFB) boiler can take up to 48 hours depending on the initial furnace temperature and condition of the fluidized bed. During the startup process, the unit steps through a series of changes to reach full load firing on coal with the addition of limestone into the CFB furnace. During this process, particulate matter (PM), oxides of nitrogen (NO_x), and sulfur dioxide (SO_2) emissions may vary until air pollution control equipment can be operated at a minimum continuous load.

a. CFB Boiler Bed Material Preparation

The first step in the startup of a CFB involves loading the initial bed material into the furnace. Either sand or used bed ash is loaded into the bed utilizing a pneumatic system. This step can take several hours to complete, during which time there is no fuel combustion taking place. The emissions present during the ash loading cycle are particulate matter. The fabric filter baghouse will collect any of the particulate matter during this step.

b. Startup Hours 1-12

Once the bed material is loaded into the furnace, the fans are started and the CFB Boiler begins to fire on fuel oil. The fuel oil is utilized to warm up the bed material and the CFB Boiler components. The fuel oil usage is increased until the temperature inside the cyclone reaches approximately 1150°F. From a cold start, this process may take 14 hours. During this warm-up period NO_x is controlled through efficient low NO_x fuel oil burners; SO_2 is minimized through the use of low sulfur fuel oil; and PM emissions are controlled by the fabric filter. Carbon monoxide (CO) emissions may be higher than full load operation due to the combustion conditions in the furnace during this period. The firing rate is expected to be approximately 831 million British thermal units per hour (MMBtu/hr) (30% of the maximum CFB Boiler heat input rate of 2,771 MMBtu/hr).

c. Startup Hours 12-18

After approximately 12 hours of firing on fuel oil, coal and limestone are introduced into the furnace and the feed rate is increased over the next 2 hours until the coal becomes the primary fuel source. During this time both fuel oil and coal are combusted together. The fuel oil feed rate is slowly reduced and is eventually shut off. During this transition NO_x is controlled by the use of low NO_x fuel oil burners and the staged combustion of the coal. SO_2 is controlled by the use of low sulfur fuel oil and the addition of limestone to the fluidized bed. The fabric filter continues to control PM.

At approximately 50% of full load the NO_x is further reduced by adding ammonia injection via the Selective Non-catalytic Reduction (SNCR) system. In addition, approximately 4 hours after limestone is injected into the fluidized bed, the hydrated ash reinjection system is activated to further reduce SO_2 emissions. At this point all emissions control equipment is fully activated. The total time to reach a point where all air pollution control technologies are operating is approximately 18 hours from a cold start. Start-up operations are limited, by permit, to a maximum of 48 hours.

II. CFB Boiler Shutdown

Several steps are required for a controlled shutdown of the boiler and the associated ancillary equipment. The first step of the process is to shut down the coal feed into the furnace. In order to accomplish this, the coal feed and firing rate is gradually reduced. As the temperature is reduced below the minimum requirements for the hydrated ash re-injection and SNCR systems, these systems are turned off. The furnace is brought down to the minimum coal firing rate. At this point the coal feed is completely shut off and the furnace is purged with air. The air will be used to gradually lower the boiler temperature for inspection or maintenance. Once the boiler is cooled off, the ID Fan will be turned off. If no access into the furnace is required, the bed ash will be left in the furnace area of the CFB Boiler. If access is required, the bed ash will be discharged and pneumatically conveyed to the ash silo, where it will be stored until the next startup. In the event that the boiler shutdown is only for a short period, and re-operation of the unit is anticipated, the fans will be turned off, and the ID Fan control damper will be closed in order to bottle up the furnace and maintain the maximum amount of heat.

Permit Analysis
Southern Montana Electric Generation and Transmission Cooperative –
Highwood Generating Station
Permit #3423-00

I. Introduction/Process Description

A. Permitted Equipment

Southern Montana Electric Generation and Transmission Cooperative – Highwood Generating Station (SME-HGS) operates a net 250-megawatt (MW) electrical power generating plant located approximately 8 miles east of Great Falls, Montana, and approximately 1.5 miles southeast of the Morony Dam on the Missouri River. The legal description of the site is in Section 24 and 25, Township 21 North, Range 5 East, M.P.M., in Cascade County, Montana. The approximate universal transverse mercator (UTM) coordinates are Zone 12, Easting 297.8 kilometers (km), and Northing 5,070.1 km. The site elevation is approximately 3,290 feet above seal level.

The SME-HGS facility is a coal-fired steam/electric generating station incorporating a circulating fluidized bed boiler (CFB Boiler) with an average annual heat input value of 2,626 million British thermal units per hour (MMBtu/hr) and a maximum short-term heat input capacity of 2,771 MMBtu/hr to produce approximately 1.8 million pounds of steam per hour. The steam is routed to a steam turbine, which drives an electric generator capable of producing an estimated 270 gross MW of electrical power. Auxiliary power to operate the facility is estimated to be approximately 20 MW resulting in the approximate net power production capacity of 250 MW. The following equipment/emission sources are permitted for this facility:

- 2771 MMbtu/hr heat input capacity coal fired CFB Boiler (2626 MMBtu/hr average)
- 225 MMBtu/hr heat input capacity diesel fuel-oil, propane, or natural gas fired Auxiliary Boiler
- 2000 kilowatt (kW) emergency diesel fuel-oil fired generator set
- 230 Kw emergency diesel fuel-oil fired Emergency fire pump
- 40 MMBtu/hr heat input capacity propane/natural gas fired Coal Thawing Shed Heater
- Cooling Tower
- Fabric Filter Baghouse (FFB) DC1 controlling rail unloading material transfers
- FFB DC2 controlling coal silo material transfers
- FFB DC3 controlling coal crusher operation and material transfers
- FFB DC4 controlling tripper deck plant silos material transfers
- FFB DC5 controlling limestone material transfers
- Fabric Filter bin vent DC6 controlling fly ash silo (AS-1) material transfers
- Bin vent DC7 controlling bottom ash silo (AS-2) material transfers
- Emergency Coal Storage Pile
- Ash Storage/Disposal Monofill
- 275,000 gallon capacity diesel fuel-oil storage tank
- Haul Roads/vehicle traffic
- 2771 MMBtu/hr heat input capacity portable/temporary propane fired CFB Boiler refractory brick curing heater(s)

B. Source Description

1. CFB Boiler

The CFB Boiler will combust low-sulfur coal except during periods of start-up and shutdown where pipeline quality natural gas, propane, or low-sulfur diesel fuel-oil may be combusted. Regulated pollutants emitted from the CFB-Boiler will be controlled by CFB limestone injection technology, a fabric filter baghouse (FFB), a hydrated ash re-injection system (HAR), and a selective non-catalytic reduction unit (SNCR). The total CFB-Boiler emission control strategy is characterized as an integrated emission control system (IECS).

The CFB Boiler technology uses a bed of crushed coal and limestone and recycled heavy ash particles suspended (fluidized) in an upwardly flowing air stream. Air enters near the bottom of the furnace and is staged through air distribution nozzles to minimize the formation of NO_x. The coal and limestone are metered and fed into the furnace bed. Combustion takes place in the fluidized bed, which is limited in temperature to reduce the formation of NO_x. The fine particles of limestone react with the sulfur in the coal and reduce the formation of SO_2. The heavier combustion byproduct particles are carried in the flue gas through the furnace, collected in a cyclone separator, and are then circulated back into the furnace.

The SNCR system is used to control NO_x emissions. Ammonia (NH_3) is injected into the cyclone separator and mixed with the flue gas. The NH_3 reacts with the flue gas to convert NO_x into nitrogen gas (N_2), and water vapor (H_2O). The HAR system is used to control SO_2 emissions. The HAR is a dry flue gas desulfurization process; the system mixes water with fly ash and available lime (produced during heating of the limestone in the CFB Boiler) to react with the SO_2 in the flue gas to form particulate, which is collected downstream in FFB. The FFB is used for particulate emissions control. The fabric filter consists of multiple fabric bags that capture lighter particles in the exhaust gases downstream of the cyclone separator. These lighter particles include fly ash and lighter solids created in the chemical reaction processes. Carbon monoxide (CO) and Volatile Organic Compounds (VOC) emissions will be controlled by best management practices (BMP) and staged combustion of air ensuring proper operation of the CFB Boiler. Limestone injection in the CFB Boiler and the HAR system, collectively, will also remove acid gases including sulfuric acid (H_2SO_4), hydrochloric acid (HCl) and hydrofluoric acid (HF). In addition, the FFB will reduce emissions of metals including antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, mercury, and manganese. A co-benefit of mercury emission reduction will result from the overall IECS design. Absorption of mercury will be realized in the CFB Boiler due to the source of unburned carbon, use of limestone injection, SNCR, and the HAR system. The mercury in particulate form will then be collected in the FFB. In addition, mercury specific emission controls may be required (see mercury BACT analysis and determination, Section III, Permit Analysis). After passing through the FFB, the flue gas will exit to atmosphere through the 400-feet tall CFB Boiler stack. The height of the stack was selected to minimize the visual impact of the plant while maintaining adequate dispersion.

2. Auxiliary Boiler, Emergency Generator, Emergency Fire Pump, and Coal Thawing Shed

The auxiliary boiler will combust #2 diesel fuel, natural gas, or propane and will only be in operation during periods of CFB Boiler startup, shutdown, commissioning and during extended downtimes of the CFB Boiler during winter months to aid in the prevention of freezing of the CFB Boiler components. The Emergency Generator and Emergency Fire

Pump will combust only low-sulfur diesel fuel-oil and operate only during emergencies and during required maintenance. The Coal Thawing Shed Heater will only operate on propane or natural gas during times when the coal is frozen in the coal train cars.

3. Cooling Tower

A wet cooling tower will be used to dissipate the heat from the condenser by using the latent heat of water vaporization to exchange heat between the process and the air passing through the cooling tower. The cooling tower will be an induced, counter flow draft design equipped with drift eliminators. The average make-up water rate for the proposed cooling tower will be approximately 2,250 gallons per minute (gpm). Water will be delivered to the facility via pipeline from the Missouri River.

4. Coal Fuel Processing, Handling, Transfer, and Storage Operations

Facility operations will utilize several proposed conveyors, transfer points, and storage facilities to handle the coal fuel material required for the operation of the CFB Boiler. The coal storage and handling system begins with coal delivered by railcars to the SME-HGS facility. Coal deliveries are estimated to be two trains per week or approximately 22,000 tons of coal.

The coal delivery railcars will pass through the Coal Thawing Shed, which will thaw frozen wintertime coal shipments before the railcars enter the Rail Unloading Building. Inside the Rail Unloading Building the coal railcars will be unloaded via a belly dump into a below-grade hopper. From the hopper, the coal will be transferred onto a covered belt conveyor (MC02). The Rail Unloading Building will be vented to an induced draft FFB DC1, which will maintain a constant negative pressure within the building. FFB DC1will provide emission control for coal transfers from the below-grade feeders to conveyor MC02. MC02 will deliver the coal to the enclosed Transfer Tower 16. The Transfer Tower will be vented to the induced draft FFB DC2 located near the coal silo. The Transfer Tower will direct the coal to either the coal silo or to the outdoor long-term coal storage pile (emergency coal pile). The emergency coal pile will store enough coal to supply the CFB Boiler for approximately one month and be used during interruptions in coal deliveries. The emergency coal pile will be compacted and sprayed with water or surfactant to minimize coal dust emissions. Coal transferred to the emergency coal storage pile will be diverted to the Coal Stackout Conveyor (CC01) and will then enter the Lowering Well where emissions will be controlled by the Lowering Well design. Coal will be reclaimed from the coal storage pile by below-grade vibrating reclaim hoppers and a belt feeder. The reclaimed coal will be moved onto the Coal Reclaim Conveyor (CC03) and returned to Transfer Tower 16. Coal not directed to the emergency coal pile or reclaimed from the emergency coal pile will be transferred to the Coal Transfer Conveyor (CC02) inside Transfer Tower 16. CC02 feeds the Coal Silo (CS-1), which is sized to hold coal for several days of CFB Boiler operations. The coal transfers associated with CC04 are controlled by FFB DC2 located at the coal silo. FFB DC2 will also control coal dust emissions from the transfer of coal from the feeder located at the bottom of CS-1 to Coal Feeder Conveyor (CC04). CC04 transfers coal to the Coal Crusher House which encloses a coal surge bin, two rotary feeders, and two coal crushers and is controlled by FFB DC3, which also controls emissions from the Coal Transfer Conveyor CC05. Crushed coal on CC06 is transferred to the Tripper System (comprised of the Tripper Conveyor and Traveling Tripper) and is controlled by FFB DC4.

5. Limestone Processing, Handling, Transfer, and Storage Operations

   Covered, over-the-highway, bottom-dumping trucks will deliver limestone material to the SME-HGS facility and will be unloaded in a drive-through building, which is controlled by FFB DC5. The Limestone Transfer Conveyor (LC01) will move the delivered limestone to the Limestone Bucket Elevator (LC02), and discharge into the Limestone Silo (LS1). LS1 loading and unloading limestone dust emissions from this silo will also be controlled by FFB DC5. Limestone unloaded from the silo will be transferred to a feed chute by the Limestone Weight Feeder (LC03). The feed chute dumps directly into the Limestone Mills, which feed directly into the furnace of the boiler.

6. Fly and Bed Ash Handling, Transfer, and Storage/Disposal Operations

   Combustion of coal in the CFB Boiler will produce two types of dry ash: bed ash (20-30%) and fly ash (70-80%). Both fly ash and bed ash will be dry and will be collected in two separate ash silos. Fly ash collected by the baghouse will be pneumatically transferred to the fly ash silo (AS1). Air displaced by fly ash silo charging will be controlled by Bin-Vent DC6, while bed ash from the CFB Boiler will be transferred pneumatically to the bed ash silo (AS2) where emissions will be controlled by a bin vent DC7. Bed ash and fly ash will be gravity-fed into trucks through a pug mill where water and ash are mixed to reduce dust generation. Air displaced by ash loading into trucks will be vented through AS1 and AS2 and their associated bin vents DC6 and DC7, respectively. The ash will be transferred from AS1 and AS2 to trucks and disposed of in the on-site ash monofill. In addition to disposal on-site, SME-HGS is researching beneficial uses for the ash.

7. Fuel-Oil Storage Tank

   The diesel fuel will be used for CFB Boiler startup, shut-down, and commissioning operations, auxiliary boiler operations, emergency generator operations, and emergency fire pump operations, and will be stored in an above-ground fuel tank. The tank will hold up to 275,000 gallons of #2 diesel fuel. The tank will be limited to the storage of fuels with a vapor pressure of 3.5 kilopascals (kPa) or less to avoid 40 CFR 60, Subpart Kb, applicability.

8. Haul Roads

   Trucks will be used for the delivery of limestone and the transport of ash to the monofill. The facility will also have bulldozers and front-end loaders, which will be utilized to maintain the emergency coal storage pile. SME-HGS will use BMP, including water sprays, to reduce fugitive emissions from unpaved work areas and roadways.

9. CFB Boiler Refractory Brick Curing Heaters

   Because information on the final CFB Boiler design is dependent on the choice of boiler manufacturer and this information is not available at the time of application for this supplemental preliminary determination, SME-HGS formulated a conservative refractory brick curing scenario (i.e., scenario with conservatively high emission rates). This scenario includes a total heat input to cure the CFB Boiler refractory brick that would not exceed the maximum hourly heat input to the CFB Boiler of 2771 MMBtu/hr. The CFB Boiler refractory brick curing heater(s) shall be limited to a combined maximum of 320 hours of operation per year and shall combust only propane fuel.

C. Permit History

The Department issued a preliminary determination on air quality Permit #3423-00 on March 30, 2006, and accepted comments on the preliminary determination through May 1, 2006. On April 25, 2006, Bison Engineering, Inc., on behalf of SME-HGS, verbally notified the Department of additional air pollutant emitting units that were not previously analyzed and permitted under Preliminary Determination #3423-00 and are necessary for the construction and operation of the CFB Boiler. SME-HGS submitted an application for the proposed additional emitting units on May 16, 2006. Because these units were not included in the initial preliminary determination, the Department issued a supplemental preliminary determination for public comment.

D. Supplemental Preliminary Determination

SME-HGS determined that during the CFB Boiler construction phase and periodically thereafter, as necessary, SME-HGS will need to operate portable/temporary propane-fired heater(s) for the purpose of curing the CFB Boiler refractory brick (refractory heaters). At the time of application for the supplemental preliminary determination, SME-HGS had not determined the specific boiler manufacturer to supply the CFB Boiler for the proposed project; therefore, specific information regarding the refractory heaters was not available prior to application for the supplemental preliminary determination. In light of this, The Department required that SME-HGS provide a conservative analysis of potential worst-case impacts resulting from operation of the proposed refractory heater(s).

SME-HGS formulated a conservative refractory heater operating scenario (i.e., a scenario with conservatively high emission rates). The scenario proposes a total refractory heater heat input limit that would not exceed the maximum hourly heat input to the CFB Boiler of 2771 MMBtu/hr, as reported in the initial application for air quality Permit #3423-00. The refractory heaters would potentially combust approximately 30,280 gallons of propane per day to achieve this conservatively estimated heat input scenario. The analysis of potential impacts and the Department's Best Available Control Technology (BACT) determination for the proposed refractory heaters is based on the above-cited maximum heat input scenario firing propane and an annual operating limit of 320 hours per year to accommodate initial and periodic refractory heater(s) operations. In addition, the CFB Boiler refractory brick heater(s) emissions exhaust will exit the CFB Boiler through a temporary stack 11 feet in diameter and 210 feet tall. The stack will be located above the CFB Boiler cyclone. The required BACT analysis for the refractory heater(s) project is contained in Section III.F of the permit analysis to this permit. SME-HGS modeled potential impacts from the portable/temporary CFB Boiler refractory brick curing heater(s) and the modeling conducted for the project demonstrates compliance with all applicable standards.

In addition, the following administrative errors contained in the Department's initial preliminary determination have been corrected under this supplemental preliminary determination:

- Correction of applicable Auxiliary Boiler PM_{10} emission limit in Section II.D.7 of the permit. The correct emission limit is 3.20 lb/hr not 5.43 lb/hr as required in the Department's initial preliminary determination;
- Table contained in Section III.A.5.C of the permit analysis, CFB Boiler VOC BACT Analysis, corrected to indicate "VOC" not "CO" emission rates, as reported in the Department's initial preliminary determination;

- The CFB Boiler mercury emission estimate contained in Section IV, Emission Inventory, of the permit analysis, has been modified from an estimate of 0.02 tons per year reported in the Department's initial preliminary determination to 0.017 tons per year to reflect potential mercury emissions resulting from the permitted mercury BACT emission limit of 1.5 lb/TBtu.
- Correction of the years of surface and upper air meteorological data used to demonstrate compliance with the Class II modeling contained in the second paragraph in Section VI of the permit analysis, Ambient Impact Analysis. The correct years of meteorological data are 1987-1991 and not 1984, 1986-1991, as reported in the Department's initial preliminary determination.
- Correction of modeled concentration of CO reported in Table 1, Section VI, Ambient Air Impact Analysis, from 662 ug/m^3 reported in the Department's initial preliminary determination to 66.2 ug/m^3 and the reported net increase of VOC from 36.5 reported in the Department's initial preliminary determination to 35.6 tons per year.
- Correction of the NO_x control efficiencies reported in the Department's initial preliminary determination for SCR, SNCR, and baseline uncontrolled CFB Boiler emissions in the table in Section III.A.3.C of the permit analysis. The correct control efficiencies are 90% for SCR, 50% for SNCR, and 0% for uncontrolled baseline emissions.
- Addition of footnote to Emission Inventory table contained in Section IV of the permit analysis to clarify estimated PM and PM_{10} emissions from the CFB Boiler.
- Correction of SNCR urea chemical reaction contained in Section III.A.3.A.vi, BACT Determination, of the permit analysis.

All comments regarding the Department's initial preliminary determination issued for public comment on March 30, 2006, and received by May 1, 2006, have been accepted by the Department as applicable to this supplemental preliminary determination and subsequent comments on the same issues are not necessary. The only changes to the initial preliminary determination under the supplemental preliminary determination are related to the refractory brick curing heaters and administrative errors contained in the initial preliminary determination, as detailed above. The supplemental Preliminary Determination #3423-00 replaces the initial Preliminary Determination #3423-00 issued for public comment on March 30, 2006.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Department. Upon request, the Department will provide references for location of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 – General Provisions, including but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq*., Montana Code Annotated (MCA).

   SME-HGS shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than 4 hours.

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 – Ambient Air Quality, including, but not limited to the following:

1. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
2. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
3. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
4. ARM 17.8.213 Ambient Air Quality Standard for Ozone
5. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
6. ARM 17.8.221 Ambient Air Quality Standard for Visibility
7. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}

SME-HGS must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 – Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, SME-HGS shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.

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4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.

5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this rule.

6. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.

7. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR 60, Standards of Performance for New Stationary Sources (NSPS). SME-HGS is an NSPS affected facility under 40 CFR 60 and is subject to the requirements of the following subparts:

    a. 40 CFR 60, Subpart A. The general provisions provided in 40 CFR 60, Subpart A, apply to all equipment or facilities subject to any Subpart listed below

    b. 40 CFR 60, Subpart Da. As applicable to CFB Boiler and associated affected equipment.

    c. 40 CFR 60, Subpart Db. As applicable to Auxiliary Boiler and associated affected equipment.

    d. 40 CFR 60, Subpart Y. As applicable to coal processing, handling, and storage equipment and activities.

    e. 40 CFR 60, Subpart OOO. As applicable to limestone processing, handling, and storage equipment and activities.

    f. 40 CFR 60, Subpart HHHH. Model rules for a Mercury Budget Trading Program.

8. ARM 17.8.341 Emission Standards for Hazardous Air pollutants. This source shall comply with the standards and provisions of 40 CFR 61, as appropriate.

9. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR 63, shall comply with the requirements of 40 CFR 63, as listed below:

    a. 40 CFR 63, Subpart A. The general provisions provided in 40 CFR 63, Subpart A, apply to all equipment or facilities subject to any Subpart listed below:

    b. 40 CFR 63, Subpart B. As applicable facility wide.

    c. 40 CFR 63, Subpart ZZZZ. As applicable to the Emergency Generator.

    d. 40 CFR 63, Subpart DDDDD. As applicable to the Auxiliary Boiler.

D. ARM 17.8, Subchapter 4 – Stack Height and Dispersion Techniques, including, but not limited to:

1. ARM 17.8.401 Definitions. This rule includes a list of definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.402 Requirements. SME-HGS must demonstrate compliance with the ambient air quality standards with a stack height that does not exceed Good Engineering Practices (GEP). The proposed height of the stacks for the SME-HGS CFB Boiler and Auxiliary Boiler are below the allowable GEP stack height and SME-HGS has demonstrated compliance with all applicable ambient air quality standards as part of the complete permit application for this permit.

E. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation, and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. SME-HGS submitted the appropriate permit application fee for the current permit action.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

   An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that prorate the required fee amount.

F. ARM 17.8, Subchapter 7 – Permit, Construction, and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit modification to construct, modify, or use any air contaminant sources that have the Potential to Emit (PTE) greater than 25 tons per year of any pollutant. SME-HGS has a PTE greater than 25 tons per year of PM, PM_{10}, NO_x, CO, SO_2, and VOC; therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.

4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration, or use of a source. SME-HGS submitted the required permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. SME-HGS submitted an affidavit of publication of public notice for the December 7, 2005, issue of the *Great Falls Tribune*, a newspaper of general circulation in the Town of Great Falls in Cascade County, as proof of compliance with the public notice requirements.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving SME-HGS of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*.

10. ARM 17.8.760 Additional Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those applications that require an environmental impact statement.

11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.

G. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.

2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is a listed source because it is a fossil-fuel fired steam-electric generating plant having more than 250 MMBtu/hr heat input capacity. Furthermore, the facility's emissions of PM, PM_{10}, NO_X, SO_2, and CO are greater than 100 tons per year; therefore, the facility is a major source under the New Source Review Prevention of Significant Deterioration (PSD) program.

H. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:

   a. PTE > 100 tons/year of any pollutant;

   b. PTE > 10 tons/year of any one Hazardous Air Pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or

   c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #3423-00 for SME-HGS, the following conclusions were made:

   a. The facility's PTE is greater than 100 tons/year for PM, PM_{10}, NO_X, SO_2, and CO.

b. The facility's PTE is greater than 10 tons/year for any one HAP and greater than 25 tons/year for all HAPs.

c. This source is not located in a serious PM_{10} nonattainment area.

d. This facility is subject to NSPS requirements under 40 CFR 60, Subpart(s) A, Da, Db, Y, and OOO.

e. This facility is subject to NESHAP standards under 40 CFR 60, subpart DDDDD and ZZZZ, as applicable.

f. This source is a Title IV affected source.

g. This source is not a solid waste combustion unit.

h. This source is not an EPA designated Title V source.

Based on the above information, the SME-HGS facility is a major source of air pollutants as defined under the Title V operating permit program; therefore, a Title V Operating Permit is required. SME-HGS submitted an application for a major source Title V operating permit concurrent with the submittal of the application for Montana Air Quality Permit #3423-00.

III. BACT Determination

A BACT determination is required for each new or modified source of emissions. SME-HGS shall install on the new or modified source of emissions the maximum air pollution control capability that is technically practicable and economically feasible, except that the BACT shall be utilized.

Under the current permit action, SME-HGS proposed a coal-fired power plant incorporating a CFB Boiler for the production of steam to be routed to a steam turbine, which in turn drives an electric generator capable of producing electrical power. The United States Environmental Protection Agency's (EPA) Draft New Source Review Workshop Manual (October 1990) (NSR Manual) states that, "historically, EPA has not considered the BACT requirement a means to re-define the design of the source when considering available control technologies." However, the NSR Manual goes on to indicate "…this is an aspect of the New Source Review – Prevention of Significant Deterioration permitting process in which states have the discretion to engage in a broader analysis if they so desire." Based on the analysis provided below, the Department does not believe that redefining the source is appropriate in this case.

In support of the Department's position on this issue, a recent EPA policy/guidance statement titled *Best Available Control Technology Requirements for Coal-Fired Power Plants,* authored by Stephen D. Page, Director, EPA Office of Air Quality, Planning, and Standards (December 13, 2005), provides that inclusion of technologies such as integrated gasification combined cycle (IGCC) in the BACT analysis for a coal-fired power plant, such as that proposed in this case, constitutes re-definition of the source and is not appropriate under the BACT analysis and determination process.

Despite the above-cited reasons for not requiring consideration of other energy production processes, during the research and development phase leading to the proposed SME-HGS project, SME-HGS evaluated various alternative energy technologies including the following: Wind; Solar - Photovoltaic; Solar - Thermal; Hydroelectric; Geothermal; Biomass; Biogas; Municipal Solid Waste; Natural Gas Combined Cycle; Microturbines; Pulverized Coal (PC) Boilers; CFB Boilers; and

IGCC. This analysis is compiled in a document created for the U.S. Department of Agriculture, Rural Utility Service (RUS) titled, A*lternative Evaluation Study* (AES). A copy of this document is available for review on the RUS website at www.usda.gov/rus/water/ees/eis.htm and in Appendix D of the SME-HGS application for this air quality permit. This document constitutes a detailed study of alternative energy technologies that were analyzed for future power requirements. The purpose of the AES, as stated in the AES document is "…to determine *an appropriate source of wholesale electric energy and related services post 2008…Provide an analysis of alternatives that SME-HGS has considered to meet its wholesale energy and related supply obligations currently met through the use of power purchase agreements…The alternatives studied by SME-HGS were evaluated in terms of cost effectiveness, technical feasibility, and environmental soundness."*

Additional Evaluation of IGCC and PC Technology

As previously stated, the Department determined that re-defining the proposed CFB coal-fired power project is not appropriate in this case. However, because IGCC and PC technologies represent available and technically feasible electrical power production technologies using coal as fuel, the following information has been summarized to provide additional basis for rejecting these technologies as BACT for the proposed SME-HGS project based on technical, environmental, and economic factors.

IGCC Power Generation

Based on the analysis included in the SME-HGS application materials and independent Department research, the Department determined that IGCC represents an available and potentially technically feasible strategy for the production of electricity using coal. However, the Department determined that IGCC is technically, economically, and environmentally infeasible for the purpose of meeting the SME-HGS wholesale energy and related supply obligations to its energy cooperative customers.

As provided in the NSR Manual (Section B-19), an analysis of technical feasibility should include an evaluation of the capabilities of the technology for project specific application. At the time of draft permit issuance, IGCC has not been adequately demonstrated to provide acceptable reliability, with current approaches to improving reliability resulting in less efficient facilities thereby negatively impacting the cost-competitiveness of IGCC for a base-load power generation project. Currently, IGCC incurs an approximate 20% increase in project cost-effective values when compared to CFB power production projects. Therefore, the Department determined that the application of IGCC for the proposed SME-HGS project presents currently un-resolvable reliability concerns leading to unacceptable project cost increases.

Further, based on Department analysis of existing and currently operational similar sized IGCC plant operations, the Department determined that criteria pollutant emissions from IGCC plants, when compared to CFB technology, result in relatively little or no additional environmental protection. The Department understands that the carbon sequestration (greenhouse gas reduction) capabilities of the IGCC technology potentially represents a significant environmental benefit associated with the application of this technology when compared to historically prevalent coal-fired power plant projects (CFB and PC). However, greenhouse gasses, such as carbon dioxide (CO_2), are not currently regulated under the Montana or federal Clean Air Act. Therefore, because IGCC results in relatively little increased regulated environmental protection, the environmental benefits associated with IGCC greenhouse gas sequestration capabilities do not justify application of this technology for the proposed project.

As summarized above, the Department determined that, at this time, IGCC constitutes a technically, economically, and environmentally infeasible alternative electric power production alternative for the proposed SME-HGS project; therefore, IGCC is eliminated from further consideration under the BACT analysis and determination process.

PC-Boiler Power Generation

Based on the analysis included in the SME-HGS application materials and direct recent and historical Department experience in permitting PC-fired electrical power production projects, the Department determined that PC-fired electrical power production represents an available, technically feasible, and cost-effective strategy for the production of electricity using coal. However, the Department determined that PC-fired electrical power generation does not constitute BACT in this case considering the environmental benefits associated with the proposed CFB coal-fired power project when compared to a PC coal-fired power project.

Operation of a PC-fired boiler in place of the proposed CFB Boiler for the SME-HGS project would result in significantly increased emissions of SO_2, CO, PM_{10}, and total HAPs and relatively similar emissions of NO_x and mercury (specific HAP). Therefore, because SME-HGS proposed a CFB electrical power generation project and the CFB technology would result in less emissions of regulated air pollutants when compared to the PC-fired technology, the Department determined that PC-fired electrical power generation does not constitute BACT in this case.

Project BACT Applicability

The Department determined that the proposed CFB coal-fired power plant represents the most appropriate technology to supply energy to SME-HGS customers taking into consideration technical, environmental, and economic factors. Coal-fired electrical power generation, specifically CFB coal combustion is carried forward into the following BACT analysis and determination process. The following BACT analysis addresses available methods of controlling air pollutant emissions from the following affected equipment:

- CFB Boiler: SO_2, filterable PM, PM_{10} (filterable and condensable), NO_x, CO, VOC, H_2SO_4, acid gasses (HCl and HF), trace metals, radionuclides, and mercury.
- Coal, Limestone, and Ash (Bottom and Fly Ash) Material Processing, Handling, Transfer, and Storage Operations: PM/PM_{10}
- Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed Heater: PM_{10}, NO_x, CO, SO_2, and VOC.
- Cooling Tower: PM/PM_{10}
- Haul Roads/Truck Traffic: PM/PM_{10}
- CFB Boiler Refractory Brick Curing Heaters: PM_{10}, NO_x, CO, SO_2, and VOC.

The Department reviewed the following control options, as well as previous BACT determinations for similar permitted sources in order to make the following pollutant specific BACT determinations.

A. CFB Boiler BACT Analysis and Determination

1. SO_2 Emissions

Sulfur oxide (SO_x) emissions from fossil fuel combustion consist primarily of SO_2. Additional compounds of SO_x also form at a much lower quantity and consist of sulfur trioxide (SO_3) and gaseous sulfates. These compounds form as the sulfur in the fossil fuel is oxidized during the combustion process. SME-HGS is proposing to use Powder

River Basin (PRB) sub-bituminous coal as the CFB Boiler fuel source and, as such, has analyzed the use of low-sulfur coal for the proposed project.
Low sulfur coal is typically considered coal with sulfur content at or below 1.0% by weight. Sulfur content and heating content of coal can vary between coal mine and coal seam, which can impact SO_2 emissions from the source. High sulfur coal is typically between 1% and 5% sulfur by weight. Coal analyzed for the proposed project will typically have sulfur content less than 0.8% by weight and heating values greater than 8,600 Btu/lb.

A. Identification of Available SO_2 Control Strategies/Technologies

Several techniques can be used to reduce SO_2 emissions from CFB Boiler fossil fuel combustion. SO_2 control options can be divided into pre-combustion strategies (e.g., combusting low sulfur fuels, fuel blending, coal cleaning, etc.), combustion techniques, and post-combustion controls typically characterized as flue gas de-sulfurization (FGD) units (e.g., wet scrubbers, dry scrubbers, etc.). The following available SO_2 control options/technologies/strategies were evaluated for the proposed project:

i. CFB Boiler with High-Sulfur Coal
ii. CFB Boiler with Low-Sulfur Coal (Fuel Blending or Switching)
iii. CFB Boiler with Limestone Injection
iv. CFB Boiler with Coal Cleaning
v. CFB Boiler with FGD
   a. Wet Lime Scrubber/Wet Limestone Scrubber
   b. Dual Alkali Wet Scrubber
   c. Spray Dry Absorber
   d. Dry-Sorbent Injection
   e. Circulating Dry Scrubber
   f. Hydrated Ash Re-injection (HAR)
vi. CFB Boiler with Low-Sulfur Coal and Coal Cleaning
vii. CFB Boiler with Low-Sulfur Coal and FGD
viii. CFB Boiler with Low-Sulfur Coal Limestone Injection
ix. CFB Boiler with High or Low-Sulfur Coal, Coal Cleaning, and FGD
x. CFB Boiler with High or Low-Sulfur Coal, Limestone Injection, and Coal Cleaning
xi. CFB Boiler with High or Low-Sulfur Coal, Limestone Injection, and FGD
xii. CFB Boiler with High or Low-Sulfur Coal, Limestone Injection, Coal Cleaning, and FGD

The following text provides a brief overview of the above-cited SO_2 control options/technologies/strategies that have been evaluated for the proposed project.

i. CFB Boiler with High-Sulfur Coal

SO_2 emissions from a CFB Boiler with no control are strictly dependent on the sulfur content of the coal being fired. The coal for a CFB Boiler is crushed to a specific size and injected into the CFB Boiler. The coal mixes with the bed material and circulates through the boiler until all of the coal is combusted. The bed material can be made up of stone, sand, and/or limestone. The use of limestone as a bed material is a common industry practice as a first stage SO_2 control strategy.

ii. CFB Boiler with Low-Sulfur Coal (Fuel Blending or Switching)

Another potential control option for reducing SO_2 emissions is to reduce the amount of sulfur contained in the coal by using low-sulfur coal (e.g., current project proposal) or by blending low-sulfur coal with relatively higher sulfur coal (e.g., Midwestern United States bituminous coal). Low-sulfur coal is used as a means to decrease the SO_2 emissions without installing SO_2 add-on control devices. By blending low sulfur coal with high sulfur coal or by switching from high sulfur coal to a lower sulfur coal, SO_2 emissions will decrease. When low-sulfur coal is readily available, fuel blending or switching can be a cost-effective means to reduce SO_2 emissions. CFB Boilers are typically not sensitive (from an operational standpoint) to different types of coal or solid fuels. This is one of the benefits of a CFB Boiler.

iii. CFB Boiler with Limestone Injection

In a CFB Boiler, crushed limestone ($CaCO_3$) is fed to the combustor and becomes part of the solid medium that makes up the combustion bed. Within the combustion zone, lime (CaO) is formed by calcining the $CaCO_3$. SO_2 formed during the combustion process combines with the calcined CaO to form gypsum ($CaSO_4$), a stable byproduct, or $CaSO_3$ as shown in the following reactions:

$$SO_2 + CaO + \tfrac{1}{2}O_2 \rightarrow CaSO_4$$

or

$$SO_2 + CaO \rightarrow CaSO_3$$

The SO_2 removal equation shows that one mole of calcium is required to capture one mole of sulfur. Therefore, the theoretical minimum Ca/S ratio required for the removal of a given sulfur concentration is 1/1, assuming 100% utilization of the sorbent. However, the actual removal efficiency that can be achieved in practice for a given unit is dependent on several factors including the size and porosity of the lime, temperature of the combustion bed, residence time within the combustion bed, mixing, and uncontrolled SO_2 concentration. In practice, it has been found that approximately 50% of the SO_2 will be removed at a Ca/S ratio of 1. As the Ca/S ratio increases, a greater amount of SO_2 will be removed, but with diminishing return. Limestone injection is an integral part of the CFB Boiler process; however, the actual limestone injection rate varies from unit to unit as the sulfur in the coal or fuel varies.

iv. CFB Boiler with Coal Cleaning

Various coal cleaning processes may be employed to reduce the coal sulfur content. Physical coal cleaning removes mineral sulfur (such as pyrite) but is not effective in removing organic sulfur. Chemical cleaning and solvent refining processes are being developed to remove organic sulfur. Coal cleaning has generally been used on high mineral, high sulfur, coal for power plants without FGD systems with some success. In some studies, coal-cleaning processes have been noted to reduce the feed coal sulfur content by 1% in high sulfur coal with sulfur contents up to 5%. This equates to an approximate 20% reduction in total sulfur-in-coal. Coal cleaning requires water and/or chemicals for removing the sulfur, pyrite, and other materials; consequently, a wastewater stream is produced by the coal cleaning system, which must be treated before discharge from the facility.

v. CFB Boiler with FGD

Post-combustion methods for CFB Boilers mainly consist of FGD and are typically classified as either wet or dry systems. Wet and dry FGD are well-established SO_2 control options. Wet FGD removes SO_2 with a wet lime or limestone slurry as compared to dry FGD, which injects dry lime or limestone and produces a dry by-product that is removed with the fly ash in the particulate control device (e.g., fabric filter baghouse (FFB)). Dry FGD, as the name applies, does not use water and does not require a wastewater disposal system. The following text provides a brief overview of available FGD systems:

a. Wet Lime/Limestone Scrubber

The wet lime scrubbing process uses alkaline slurry made by adding lime (CaO) to water. The alkaline slurry is sprayed into the exhaust stream and reacts with the SO_2 in the flue gas. Insoluble calcium sulfite ($CaSO_3$) and calcium sulfate ($CaSO_4$) salts are formed in the chemical reaction that occurs in the scrubber. The salts are removed as a solid waste by-product. The waste by-product is mainly $CaSO_3$, which is difficult to dewater. Solid waste by-products from wet lime scrubbing are typically managed in dewatering ponds and landfills.

Wet limestone scrubbers are very similar to wet lime scrubbers. However, the use of limestone ($CaCO_3$) instead of CaO requires different feed preparation equipment and a higher liquid-to-gas ratio. The higher liquid-to-gas ratio typically requires a larger absorbing unit. The $CaCO_3$ slurry process also requires a ball mill to crush the $CaCO_3$ feed.

Forced oxidation of the scrubber slurry can be used with either the lime or limestone wet FGD system to produce gypsum solids instead of calcium sulfite by-product. Forced oxidation of the scrubber slurry provides a more stable by-product and reduces the potential for scaling in the FGD. The gypsum by-product may be sold for other uses, reducing the quantity of solid waste that needs to be disposed of in a landfill.

Wet lime/limestone scrubbers can achieve SO_2 control efficiencies of approximately 95% or greater when used on boilers burning higher sulfur bituminous coals, but may be less efficient when the boiler is combusting lower sulfur coals, such as that proposed for the current project. The actual control efficiency of a wet lime/limestone FGD system depends on several factors, including the uncontrolled SO_2 concentration entering the scrubber.

b. Dual Alkali Wet Scrubber

Dual-alkali scrubbers use a sodium-based alkali solution to remove SO_2 from the combustion exhaust gas. The process uses both sodium-based and calcium-based compounds. The sodium-based reagents absorb SO_2 from the exhaust gas, and the calcium-based solution (lime or limestone) regenerates the spent liquor. Calcium sulfites and sulfates are precipitated and discarded as sludge, and the regenerated sodium solution is returned

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to the absorber loop. The dual-alkali process requires lower liquid-to-gas ratios than scrubbing with lime or limestone. The reduced liquid-to-gas ratios generally mean smaller reaction units; however, additional regeneration and sludge processing equipment is necessary.

A sodium-based scrubbing solution, typically consisting of a mixture of sodium hydroxide, sodium carbonate, and sodium sulfite, is an efficient SO_2 control reagent. However, the high cost of the sodium-based chemicals may limit feasibility of such an installation on a generating unit size of 100 MW or larger utility boiler. In addition, the process generates a less stable sludge that can create material handling and disposal issues. The control efficiency is similar to the wet lime/limestone scrubbers at approximately 95% or greater. As with the wet lime/limestone scrubbers, control efficiencies are highly dependent upon the uncontrolled SO_2 concentration entering the scrubber.

c. Spray Dryer Absorber (SDA)

The typical SDA uses lime slurry and water injected into a tower to remove SO_2 from the combustion gases. The towers must be designed to provide adequate contact and residence time between the exhaust gas and the slurry in order to produce a relatively dry by-product. The process equipment associated with an SDA typically includes an alkaline storage tank, mixing and feed tanks, an atomizer, spray chamber, particulate control device, and a recycle system. The recycle system collects solid reaction products and recycles them back to the spray dryer feed system to reduce alkaline sorbent use. SDAs are a commonly used dry scrubbing method in large industrial and utility boiler applications. SDAs have demonstrated the ability to achieve greater than 95% SO_2 reduction. Again, control efficiencies are highly dependent upon the uncontrolled SO_2 concentration entering the scrubber.

d. Dry Sorbent Injection

Dry sorbent injection involves the injection of powdered or hydrated sorbent (typically alkaline) directly into the flue gas exhaust stream. Dry sorbent injection systems are simple systems, and generally require a sorbent storage tank, feeding mechanism, transfer line and blower, and injection device. The dry sorbent is typically injected countercurrent to the gas flow through a Venturi orifice. An expansion chamber is often located downstream of the injection point to increase residence time and contact efficiency. Particulates generated in the reaction are controlled in the system's particulate control device. SO_2 control efficiencies for dry sorbent injection systems are approximately 50%, but if the sorbent is hydrated lime, then 80% or greater removal can be achieved. These systems are commonly called lime spray dryers. Once again, control efficiencies are highly dependent upon the uncontrolled SO_2 concentration entering the scrubber.

e. Circulating Dry Scrubber

A third type of dry scrubbing system, the circulating dry scrubber (CDS), uses a circulating fluidized bed of dry hydrated lime reagent to remove SO_2. Flue gas passes through a Venturi orifice at the base of a vertical reactor tower and is humidified by a water mist. The humidified flue gas then enters a fluidized bed of powdered hydrated lime where SO_2 is removed. The dry by-product produced by this system is routed with the flue gas to the unit's particulate removal system.

f. Hydrated Ash Re-Injection (HAR) System.

The HAR process is a modified dry FGD process developed to increase utilization of un-reacted lime (CaO) in the CFB ash and any free CaO left from the furnace burning process. The hydrated ash re-injection process will further reduce the SO_2 concentration in the flue gas. The actual design of a HAR system is vendor-specific and hydrated ash re-injection type systems may be referred to as a Flash Dry Absorber™ (Alstom trade name) or a polishing scrubber.

In a hydrated ash re-injection system, a portion of the collected ash and lime is hydrated and re-introduced into a reaction vessel located ahead of the fabric filter inlet. In conventional boiler applications, additional lime may be added to the ash to increase the mixture's alkalinity. For CFB applications, sufficient residual CaO is available in the ash and additional lime is not required. It is estimated that potential SO_2 emissions would be reduced by approximately 90 to 95% in the CFB with an additional 60 to 80% reduction achieved with the addition of a HAR system. The overall control efficiency would be approximately 97% to 98% with low sulfur coal and even greater with high sulfur coal fuel.

vi. CFB Boiler with Low-Sulfur Coal and Coal Cleaning

As stated previously, coal cleaning is typically performed on high-sulfur coals. The economics of cleaning low-sulfur coal show this to be an expensive method with relatively little benefit of additional reduction in sulfur.

vii. CFB Boiler with Low-Sulfur Coal and FGD

Low-sulfur coal is typically used to reduce overall SO_2 emissions from a CFB Boiler. However, the control efficiency decreases as the inlet SO_2 decreases with a lower-sulfur coal.

viii. CFB Boiler with Low-Sulfur Coal Limestone Injection

As stated previously, limestone can be injected in the CFB Boiler as bed material, which can help reduce SO_2 emissions. Low sulfur coal would not require as much limestone injection as a high sulfur coal to achieve an equivalent SO_2 emission rate.

ix. CFB Boiler with High or Low-Sulfur Coal, Coal Cleaning, and FGD

As stated previously, coal cleaning can remove approximately 20% of the boiler SO_2 emissions. Coal cleaning is typically applied to high-sulfur coals on systems without FGD. When FGD systems are installed, coal cleaning is typically not justified due to limited additional SO_2 reduction realized for a relatively high cost.

x. CFB Boiler with High or Low-Sulfur Coal, Limestone Injection, and Coal Cleaning

As stated previously, coal cleaning is typically performed on high sulfur coals with no additional SO_2 control. The cost of cleaning coal prior to a CFB with limestone injection is expensive with relatively little benefit of reduction in SO_2 emissions through the reduction of sulfur-in-coal.

xi. CFB Boiler with High or Low-Sulfur Coal, Limestone Injection, and FGD

FGD systems can be added as a "polishing" scrubber on a CFB Boiler with limestone injection. This control option typically can remove SO_2 emissions at control efficiency greater than 97% with low-sulfur coal and can achieve higher control efficiency with a high sulfur coal. The CFB Boiler technology with low sulfur coal, limestone injection, and HAR FGD SO_2 control strategy has been proposed by SME-HGS for the project.

xii. CFB Boiler with High or Low-Sulfur Coal, Limestone Injection, Coal Cleaning, and FGD

As stated previously, coal cleaning is typically performed on high sulfur coals for use in boilers with no additional SO_2 control. The economics of cleaning coal prior to a CFB with limestone injection and FGD is expensive with very little benefit of reduction in sulfur.

B. Technical Feasibility Analysis

SME-HGS is proposing to use low sulfur coal with an average sulfur content of approximately 0.7% sulfur by weight. Therefore, although high sulfur coal is technically feasible, all control options for high sulfur coal are eliminated from further evaluation. Since coal cleaning is typically performed on high sulfur coals, and provides minimal additional benefit when performed on low sulfur coal, all control options with coal cleaning are eliminated from further evaluation.

The circulating dry scrubber has limited application, and has not been used on large CFB Boilers. Furthermore, circulating dry scrubber systems result in high particulate loading to the unit's particulate control device. Because of the high particulate loading, the pressure drop across a fabric filter would be unacceptable; therefore, electrostatic precipitators (ESP) are generally used for particulate control. For reasons further discussed in the filterable PM (filterable and condensable) BACT analysis for the CFB Boiler, the Department determined that FFB constitutes BACT for CFB Boiler particulate control. Based on limited technical data from non-comparable applications and engineering judgment, the Department determined that CDS is not technically feasible with a CFB Boiler equipped with FFB particulate control. Therefore, the CDS will not be evaluated further.

Although a dry sorbent injection system may be technically feasible, it is not practical for use with a CFB. The CFB flue gas contains excess un-reacted lime and heavy ash particles that will be re-injected back into the CFB combustion bed. A dry sorbent injection system would simply add additional unreacted lime to the flue gas. Furthermore, SO_2 control efficiencies for dry sorbent injection systems are typically around 50% on units with a much higher uncontrolled SO_2 concentration in the flue gas. If used in conjunction with a CFB unit (with a relatively low SO_2 concentration in the flue gas), the control efficiency would be expected to be something less than 50%. Because the dry sorbent injection system is not practical with a CFB, and because the control efficiency of the dry sorbent system is lower than the control efficiency of other post-combustion control options, the system will not be evaluated further.

Summary Table: SO_2 Control Option Infeasibility	
SO_2 Control Option	**Basis for Infeasibility**
All Control Options with High Sulfur Fuel	SME-HGS is proposing to use low sulfur coal
All Control Options with Low Sulfur Fuel and Coal Cleaning	Coal cleaning is considered ineffective with low sulfur coal because it is mostly organic sulfur and does not react to cleaning as well as the higher sulfur content bituminous coals.
CFB with or without Limestone Injection with Low Sulfur Coal and Dry Sorbent Injection	Not as effective an SO_2 option as dual-alkali, SDA, or hydrated ash re-injection. Eliminated from further evaluation.
CFB with or without Limestone Injection with Low Sulfur Coal and Circulating Dry Scrubber	Limited actual experience and not considered technically feasible because of the high particulate loading and excess pressure drop across a FFB.

C. Ranking of Available and Technically Feasible SO_2 Control Options by Efficiency

Wet scrubbing systems (without additional control options) are capable of removing approximately 90-95% of SO_2 emissions from higher sulfur coals. Though various reagents such as lime, limestone, or magnesium-enhanced lime all have different SO_2 removal efficiencies, overall system efficiency is maintained by operating with a slurry feed rate that is appropriate for the reagent being used. For the present analysis, the wet FGD system will be evaluated with an upstream fabric filter baghouse (FFB) followed by a wet lime scrubber. Particulate control is required upstream from the scrubber to maintain scrubber efficiency.

Dry FGD systems are reported to be capable of removing up to 95% of the SO_2 in flue gas streams resulting from combustion of high-sulfur coal. These systems must include downstream particulate control equipment since the FGD adds particulate to the gas stream. FFBs and electrostatic precipitators (ESPs) provide essentially equivalent particulate control efficiency. The dry FGD system will be evaluated with an FFB since it potentially enhances SO_2 and sulfuric acid mist (H_2SO_4) removal efficiency. As the exhaust gas passes through a filter cake containing alkaline ash and un-reacted reagent, additional SO_2 is removed. For this reason, the system configuration of a dry FGD in combination with an ESP will not be further evaluated for the proposed project.

The combination of a CFB Boiler with limestone injection and an FGD can have an overall SO_2 control efficiency of approximately 97% to 98%. This level of collection efficiency is achieved due to the reaction time allowed for the lime in both the CFB furnace as well as the FGD.

Summary Table: SO_2 Control Option Rank by Efficiency		
SO_2 Control Option	**Emission Rate (lb/MMBtu)[a]**	**SO_2 Control Efficiency**
CFB with Limestone Injection, Low Sulfur Coal, and Wet Lime/Limestone Scrubber	0.038	97.3%
CFB with Limestone Injection, Low Sulfur Coal, and Dual-Alkali Wet Scrubber	0.038	97.3%
CFB with Limestone Injection, Low Sulfur Coal, and Spray Dry Absorber	0.038	97.3%
CFB with Limestone Injection, Low Sulfur Coal, and Hydrated Ash Reinjection	0.038	97.3%
CFB with Limestone Injection, Low Sulfur Coal (Fuel Blending or Switching)	0.08	94.4%
CFB Boiler (without Limestone Injection) with Low Sulfur Coal and Wet Lime Scrubber	0.10	93%
CFB Boiler (without Limestone Injection) with Low Sulfur Coal and Wet Limestone Scrubber	0.10	93%
CFB Boiler (without Limestone Injection) with Low Sulfur Coal and Dual-Alkali Wet Scrubber	0.16	88.7%
CFB Boiler (without Limestone Injection) with Low Sulfur Coal and Spray Dry Absorber	0.16	88.7%
CFB Boiler (without Limestone Injection) with Low Sulfur Coal and Dry Sorbent Injection	0.80	43.7%
CFB Boiler (without Limestone Injection) with Low Sulfur Coal (without control)	1.42	---
[a] Based on a 30-day rolling average		

D. Evaluation of Control Technologies Including Environmental, Economic, and Energy Impacts

The following paragraphs evaluate environmental, economic, and energy impacts associated with the remaining SO_2 control options on a CFB Boiler with limestone injection. All control options/strategies without limestone injection have been eliminated from further BACT consideration because SME-HGS proposed limestone injection technology and because a CFB Boiler with limestone injection represents greater SO_2 control efficiency when compared to CFB without limestone injection.

i. Environmental Impacts

Wet FGD systems emit some level of mist that poses negative environmental impacts related to acid gas emissions (H_2SO_4, HCl, and HF), fine particulate emissions, and near and far-range visibility degradation. Dry FGD systems avoid these problems because the technology does not produce mist and because emissions from the absorber must pass through a filter cake of alkaline material collected in the downstream FFB before exhausting to the atmosphere. Another negative environmental impact associated with a wet FGD system is related to water usage. A wet FGD system uses approximately 20% more water than a dry FGD.

Both wet and dry systems produce solid waste streams containing fly ash and spent lime or limestone and these wastes are generally disposed of in a landfill area or stored in surface impoundments. The wet dual-alkali system uses sodium-based chemicals, which generates a less stable sludge than wet lime/limestone scrubber sludge. This can create material handling and disposal issues of concern.

Even though wet FGD systems use more water and generate a wastewater sludge, wet FGD systems cannot be eliminated from further investigation under the BACT analysis and are thereby evaluated further for economic and energy impacts. The dual-alkali wet scrubber will be eliminated from further investigation due to the material handling and disposal issues (e.g., leachate polluting the ground water causing long-term storage issues) associated with the sludge byproducts.

ii. Economic Impacts

Department verified economic impacts associated with CFB Boilers for each of the above FGD systems were compared in the SME-HGS application using estimated annualized capital, operating, and maintenance costs. Cost estimates were provided from commercial suppliers of this type of equipment. Where appropriate, constant operation and maintenance factors were identified and applied consistently to control options. As reported in the application, the cost effective value for CFB with limestone injection, low-sulfur coal, and wet lime/limestone scrubber is approximately \$27,365/ton SO_2 removed; the cost effective value for CFB with limestone injection, low sulfur coal, and SDA is approximately \$7939/ton SO_2 removed; and the cost effective value for CFB with limestone injection, low sulfur coal, and HAR is approximately \$4,054/ton SO_2 removed. Based on the cost-effective values provided above, CFB with limestone injection, low sulfur coal, and HAR is deemed economically feasible for the affected unit and all other control options are deemed economically infeasible for the affected unit in this case. A detailed cost analysis is included in the application for this air quality permit.

iii. Energy Impacts

Both wet and dry FGD systems require electricity to operate. The wet FGD system uses electricity primarily for the ID fan, re-circulation pumps, reagent handling, and for wet waste dewatering. The dry FGD uses electricity primarily for the ID fan, lime/limestone handling equipment and FFB blowers. Wet FGD system power consumption is approximately 40% greater than that of the dry FGD system. With a HAR system, there is no recirculation pump, wet waste dewatering and reduced power consumption for the reagent (lime/limestone) handling system. None of the control options are eliminated based on energy impacts.

E. SO_2 BACT Determination

SME-HGS proposed the use of CFB Boiler technology with limestone injection, low sulfur coal, and HAR, to maintain compliance with a proposed SO_2 BACT emission limit of 0.038 lb/MMBtu (30-day average). Based on Department verified information contained in the SME-HGS application for Permit #3423-00 and taking into consideration technical, environmental, and economic factors, the Department determined that the proposed SO_2 emission control strategy and emission limit constitute BACT in this case. This BACT determined control option constitutes an approximate 97% SO_2 reduction efficiency.

Other recent SO_2 BACT determinations for coal-fired power plants were researched in the RACT/BACT/LAER Clearinghouse (RBLC) and Western US agency websites. The Department verified data from these websites is summarized in the application. The SME-HGS BACT determined SO_2 emission limit is at the low end of all other recently permitted similar source SO_2 BACT determinations, world-wide. The only facilities with permitted and BACT determined SO_2 emission limits lower than SME-HGS are the AES facility in Puerto Rico and the proposed NEVCO facility in Utah. The applicable SO_2 BACT emission limit for both of these facilities is 0.022 lb/MMBtu. To the best of the Department's knowledge, as of the date of permit issuance, compliance with the applicable SO_2 BACT emission limit had not been demonstrated at the AES facility or the NEVCO facility.

The Department determined that the CFB Boiler operating under the BACT determined control requirements is capable of meeting the established SO_2 BACT emission limit of 0.038 lb SO_2/MMBtu (30-day average). Further, the Department determined that the periodic SO_2 source testing, the applicable provisions contained in the Acid Rain Program (40 CFR 72-78), applicable continuous monitoring, and the applicable recordkeeping and reporting requirements will adequately monitor compliance with the permitted SO_2 BACT limit(s).

2. Filterable PM Emissions

Particulate matter emissions consist of filterable and condensable particulate. Filterable PM resulting from the proposed SME-HGS project is comprised of ash from the combustion of fuel, noncombustible metals present in the fuel, and unburned carbon resulting from incomplete combustion. Filterable PM is material that is in particulate form within the boiler stack and thus collects on the filter of a particulate sampling train. Condensable particulates include condensable organic compounds and minerals (in vapor form) that pass through the filter on a sampling train and are collected in glass impingers that contain a chilled wet solution to condense the vapors from the exhaust stream.

This BACT analysis focuses on control technologies for filterable PM. PM_{10} (filterable and condensable) is addressed later in the BACT analysis for the proposed project (see PM_{10} (filterable and condensable) BACT Analysis and Determination).

A. Identification of Available Filterable PM Control Strategies/Technologies

Several techniques can be used to reduce filterable PM emissions from fossil fuel combustion. Three of the most commonly available and effective methods for control of filterable PM emissions are listed below:

i. Wet scrubbers,
ii. Electrostatic precipitators (ESP), and
iii. Fabric filter baghouses (FFB)

The above-cited control strategies and/or combinations thereof, as detailed in the following table, can be used to effectively control filterable PM/PM_{10}.

Summary Table: Available Filterable PM Control Options		
Emitting Unit	**Control Option**	**Combined Control Option**
CFB Boiler	Wet or Dry ESP	Wet Scrubber with Wet ESP
	FFB with Fiberglass Bags	
	FFB with Specialty Bags	Wet Scrubber with FFB
	Wet/Dry Scrubber	

A general description of the ESP, FFB, and wet scrubber control technologies is described below. Only the control device is described, not each control option listed above.

i. Wet Scrubbers

Wet scrubbers typically use water to impact, intercept, or diffuse a particulate-laden gas stream. With impaction, particulate matter is accelerated and impacted onto a surface area or into a liquid droplet through devices such as venturi or spray chamber. When using interception, particles flow nearly parallel to the water droplets, which allow the water to intercept the particles. Interception works best for submicron particles. Spray-augmented scrubbers and high-energy venturi employ this mechanism. Diffusion is used for particles smaller than 0.5 micron and where there is a high temperature difference between the gas and the scrubbing liquid. The particles migrate through the spray along lines of irregular gas density and turbulence, contacting droplets of approximately equal energy.

Six particulate scrubber designs are used in wet scrubber control applications: spray, wet dynamic, cyclonic spray, impactor, Venturi, and augmented. In all of these scrubbers, impaction is the main collection mechanism for particles larger than 3 microns. Since smaller sized particles respond to non-inertial capture, a high density of small liquid droplets is needed to trap the particles. This is done at the price of high-energy consumption due to hydraulic or velocity pressure losses (William Vatavuk, *Estimating Costs of Air Pollution Control*, 1990). Wet scrubbers used specifically for particulate control are not commonly used on large utility boilers because of the high pressure drop to remove particulate to levels equivalent to those achieved with an FFB or ESP. Wet scrubbers are commonly designed for SO_2 removal instead of particulate control.

ii. ESP

An ESP is a particulate control device that uses electric forces to move particles out of the gas stream and onto collector plates. The particles are given an electric charge by forcing them to pass through the corona that surrounds a highly charged electrode, frequently a wire. The electrical field then forces the charged particles to the opposite charged electrode, usually a plate. Solid particles are removed from the collection electrode by a shaking process know as “rapping.” ESPs may be configured in several ways including the plate wire precipitator, the flat plate precipitator, the tubular precipitator, the wet precipitator, and the two-stage precipitator. These descriptions are outlined in the EPA *OAQPS Cost Control Manual* for ESP control.

The plate wire precipitator is the most common variety. It is commonly installed on coal fired boilers, cement kilns, solid waste incinerators, paper mill recovery boilers, petroleum refining catalytic cracking units, sinter plants, and different varieties of furnaces. Plate wire precipitators are designed to handle large volumes of gas. The flat plate precipitator is designed to use flat plates instead of wires for high-voltage electrodes. Small particle sizes with low-flow velocities are ideal for the flat plate precipitator. The flat plate precipitator usually handles gas flows ranging from 100,000 to 200,000 actual cubic feet per minute (acfm). Tubular precipitators are typically parallel tubes with electrodes running along the axis of the tubes. Tubular precipitators have typical applications in sulfuric acid plants, coke oven byproduct gas cleaning, and steel sinter plants. Wet precipitators can be any of the three previously discussed precipitators but with wet collection plates instead of dry collection plates. A wet precipitator aids in further collection of particles by preventing the collected ash from being re-entrained in the exhaust stream during the rapping of the walls, a problem common to dry precipitators. The disadvantages are the complexity of handling the wash and disposal of the slurry.

Finally, two-stage precipitators are parallel in nature (i.e., the discharge and collecting electrodes are side by side). Two-stage precipitators are designed for indoor applications, low gas flows below 50,000 acfm, and submicrometer sources emitting oil mists, smokes, fumes, and other sticky particulates. Two-stage systems are specialized types of devices that are very limited in applications.

Dry ESPs may be used downstream of a dry FGD unit to collect the dry FGD media and the ash formed during fuel combustion. However, they do not enhance SO_2 or SO_3 control. Dry ESPs are not suited for use downstream of wet FGD systems due to the high moisture content of the gas stream and the resulting stickiness of the particles. Wet ESPs may be used downstream of a wet FGD unit to capture both residual flue gas particulate and H_2SO_4 that may have formed in the wet FGD unit.

iii. FFB

FFBs consist of one or more isolated compartments containing rows of fabric filter bags or tubes. The exhaust stream passes through the fabric where the filterable particulate is retained on the upstream face of the bags, while the cleaned gas stream is vented to the atmosphere or to another pollution control device. FFBs collect particle sizes ranging from submicron to several hundred microns at gas temperatures up to approximately 500°F. Specialty bags can be used to achieve lower particulate emission rates or with stack temperatures above 500°F. FFBs can be categorized by the types of cleaning devices (shaker, reverse-air, and pulse-jet), direction of the gas flow, location of the system fan, and/or the gas flow quantity. Typically, the type of cleaning method distinguishes the FFB.

Advantages to FFBs are the high collection efficiency (in excess of 99%) and the collection of a wide range of particle sizes. The operational disadvantages of FFBs are limits on gas stream temperatures above 500°F (for typical installations), high-pressure drops, wet gas streams, and issues resulting from gas or particles that are corrosive and/or sticky in nature.

FFBs are not used downstream of a wet FGD system due to the high moisture content of the exhaust gas, which will saturate and ultimately plug the fabric filters. When used downstream of a dry FGD system, the FFB provides additional sulfur oxide control. The alkaline filter cake continues to react with and remove gaseous SO_2 and SO_3 as they pass through the filters. The alkaline filter cake also captures acid gas mist that may have formed in the exhaust system.

B. Technical Feasibility Analysis

Wet scrubbers designed for particulate control are technically infeasible on large utility boilers because of the high-pressure drops. FFB and ESP particulate control devices are commonly used on large utility boilers and are examined further for BACT applicability.

C. Ranking of Available and Technically Feasible Filterable PM/PM_{10} Control Options by Efficiency

FFBs and ESPs have proven capabilities in removing greater than 99% of the filterable PM from the exhaust gas stream generated by processes similar to the SME-HGS CFB Boiler. FFBs are generally specified for use downstream of a dry FGD system. The following table ranks the filterable PM control efficiency for the specified control options.

Summary Table: Filterable PM Control Option Rank by Efficiency

Filterable PM/PM_{10} Technology	Emission Rate (lb/MMBtu)	Estimated Control Efficiency
CFB with FFB with Teflon-Coated Bags	0.012	99.85%
CFB with FFB with Fiberglass Bags	0.015	99.81%
CFB with ESP	0.018	99.77%
CFB with No Add-on Control	7.78	---

D. Evaluation of Control Technologies Including Environmental, Economic, and Energy Impacts

The following paragraphs evaluate environmental, economic, and energy impacts associated with the Filterable PM control options on a CFB Boiler with limestone injection.

i. Environmental Impacts

The predominant environmental impact from controlling particulate in an FFB or ESP is related to the fly ash that is collected. The fly ash needs to be properly handled and deposited. SME-HGS is proposing to dispose the fly ash and bed ash in an on-site monofill. Further, an ESP does not provide the additional co-benefit SO_2/SO_3 collection due to the alkaline filter cake on the bags, but has not been eliminated based on environmental impacts.

ii. Economic Impacts

Department verified economic impacts associated with filterable particulate control options were compared in the SME-HGS application using estimated annualized capital, operating, and maintenance costs. Where appropriate, constant operation and maintenance factors were identified and applied consistently to control scenarios. Department verified and detailed information regarding economic impacts is contained in the application for this air quality permit.

The annual operating cost for Teflon-coated bags is approximately $500,000 more than the operating cost for standard fiberglass bags. The increase in annual cost is mainly associated with more expensive bags, and a smaller portion of the annual cost increase is associated with additional operating and maintenance costs. Despite the increase in costs associated with the use of Teflon-coated bags, the Department determined that an emission limit of 0.012 lb/MMBtu represents an achievable and cost-effective limit. As reported in the application, the annual cost-effective value for Teflon-coated bags for the proposed project is approximately $83/ton filterable PM removed as compared to approximately $78/ton filterable PM removed using standard fiberglass bags. Based on the cost-effective values provided above, all control options are deemed economically feasible for the affected unit in this case. A detailed cost analysis is included in the application for this air quality permit.

iii. Energy Impacts

Each of the control options require power in the form of fan horsepower to overcome the control device pressure drop. However, energy impacts do not eliminate any of the control options.

E. Filterable PM BACT Determination

SME-HGS proposed the use of FFB to maintain compliance with a proposed filterable PM BACT emission limit of 0.015 lb/MMBtu. Based on Department verified information contained in the SME-HGS application for this air quality permit and taking into consideration technical, environmental, and economic factors, the Department determined that the proposed FFB PM control strategy constitutes BACT in this case. However, the Department determined that the proposed emission limit of 0.015 lb/MMBtu does not constitute BACT in this case.

The FFB provides better particulate control than an ESP, is widely used in the coal-fired power generation industry, and was analyzed and is required as part of the SO_2 BACT control determination. An FFB on a CFB with limestone injection and HAR provides a co-benefit of SO_2/SO_3 control, whereas an ESP does not provide this co-benefit control.

The Department determined that maintaining compliance with a limit of 0.012 lb/MMBtu constitutes BACT in this case. In the BACT analysis contained in the application, SME-HGS states that discussions with baghouse manufacturers and vendors indicates a limit of 0.012 lb/MMBtu will not be guaranteed without significant increases in costs in order to cover any risks associated with performance guarantees and liquidated damages. However, the Department determined that the cost-effective values incurred by SME-HGS in order to meet a filterable PM emission limit of 0.012 lb/MMBtu are well within industry norms and constitute BACT in this case. Further, the Department determined that the BACT-determined FFB is capable of reducing visible emissions from the CFB Boiler stack to a level that will not exceed 20% opacity averaged over 6 consecutive minutes except for one 6-minute period per hour of not greater than 27% opacity. The Department determined that these opacity limits constitute BACT in this case.

Further, the BACT determined filterable PM emission limit and opacity limits are consistent with the values reported in the RBLC for other recently permitted and similar sources, including recently permitted sources permitted and operating in Montana. The data from the RBLC website is summarized in the application.

The Department determined that the CFB Boiler operating under the BACT determined control requirements is capable of meeting the established filterable PM BACT emission limit of 0.012 lb/MMBtu and 33.25 lb/hr (0.012 lb/MMBtu * 2770.6 MMBtu/hr average boiler heat input capacity) and the visible emissions standard of less than 20% opacity averaged over 6 consecutive minutes except for one 6-minute period per hour of not greater than 27% opacity. Further, the Department determined that the periodic filterable PM source testing, continuous opacity monitoring, and the applicable recordkeeping and reporting requirements will adequately monitor compliance with the permitted filterable PM and opacity BACT limit(s).

3. NO_x Emissions

NO_x is formed by thermal oxidation of nitrogen in the combustion air and by oxidation of nitrogen in the fuel. Thermal NO_x is formed in the high temperature region of the flame or combustion zone of the affected combustion unit. The major factors influencing thermal NO_x formation are temperature, residence time within the combustion zone, and concentration of nitrogen and oxygen in the inlet air. The amount of fuel NO_x formed is wholly dependent on the amount of nitrogen compounds contained in the fuel.

A. Identification of Available NO_x Control Strategies/Technologies

Applicable NO_x control technologies can be divided into two main categories: combustion controls, which limit NO_x production, and post-combustion controls, which destroy NO_x after formation.

The following specific add-on technologies were identified as having the potential to reduce NO_x emissions from a CFB Boiler:

Emitting Unit	Individual Control Options	Dual Combined Control Options
CFB Boiler	Low Excess Air (LEA)	Combination of LEA, FGR, OFA, and LNB
	Flue Gas Recirculation (FGR)	
	Overfire Air (OFA)	Combination of LEA, FGR, OFA, and/or LNB and SCR
	Low NOx Burners (LNB)	
	Selective Catalytic Reduction (SCR)	Combination of LEA, FGR OFA, and/or LNB and SNCR
	Selective Non-Catalytic Reduction (SNCR)	

A general description of the NO_x control options listed in the table above is described in the following text. Only the control device/strategy is described, not each control option listed above.

i. Low Excess Air (LEA)

LEA operation involves lowering the amount of combustion air to the minimum level compatible with efficient and complete combustion. Limiting the amount of air fed to the furnace reduces the availability of oxygen for the formation of fuel NO_x and lowers the peak flame temperature, which inhibits thermal NO_x formation.

Emissions reductions achieved by LEA are limited by the need to have sufficient oxygen present for flame stability and to ensure complete combustion. As excess air levels decrease, emissions of CO, hydrocarbons and unburned carbon increase, resulting in lower boiler efficiency. Other impediments to LEA operation are the possibility of increased corrosion and slagging in the upper boiler because of the reducing atmosphere created at low oxygen levels. This option cannot be utilized on CFB due to the level of air needed to fluidize the bed.

ii. Flue Gas Recirculation (FGR)

FGR is a flame-quenching technique that involves recirculating a portion of the flue gas from the economizers or the air heater outlet and returning it to the furnace through the burner or windbox. The primary effect of FGR is to reduce the peak flame temperature through absorption of the combustion heat by relatively cooler flue gas. FGR also serves to reduce the O_2 concentration in the combustion zone. This option can not utilized on CFB due to the level of air needed to fluidize the bed.

iii. Overfire Air (OFA)

OFA allows staged combustion by supplying less than the stoichiometric amount of air theoretically required for complete combustion through the burners. The remaining necessary combustion air is injected into the furnace through overfire air ports. Having an oxygen-deficient primary combustion zone in the furnace lowers the formation of fuel NO_x. In this atmosphere, most of the fuel nitrogen compounds are driven into the gas phase. Combustion occurring over a larger portion of the furnace lowers peak flame temperatures. Use of a cooler, less intense flame limits thermal NO_x formation.

Poorly controlled OFA may result in increased CO and hydrocarbon emissions, as well as unburned carbon in the fly ash. These products of incomplete combustion result from a decrease in boiler efficiency. OFA may also lead to reducing conditions in the lower furnace that in turn may lead to corrosion of the boiler. This option cannot be utilized on CFB due to the level of air needed to fluidize the bed.

iv. Low NO_x Burners (LNB)

LNB integrate staged combustion into the burner creating a fuel-rich primary combustion zone. Fuel NO_x formation is decreased by the reducing conditions in the primary combustion zone. Thermal NO_x is limited due to the lower flame temperature caused by the lower oxygen concentration. The secondary combustion zone is a fuel lean zone where combustion is completed. LNB may result in increased CO and hydrocarbon emissions, decreased boiler efficiency, and increased fuel costs. This option cannot be utilized on CFB due to the level of air needed to fluidize the bed.

v. Selective Catalytic Reduction (SCR)

SCR is a post-combustion gas treatment technique that uses a catalyst to reduce NO and NO_2 to molecular nitrogen and water. Ammonia (NH_3) is commonly used as the reducing agent. The basic reactions are:

$$4\ NH_3 + 4\ NO + O_2 \rightarrow 4\ N_2 + 6\ H_2O$$
$$8\ NH_3 + 6\ NO_2 \rightarrow 7\ N_2 + 12\ H_2O$$
$$2\ NO_2 + 4\ NH_3 + O_2 \rightarrow 3\ N_2 + 6\ H_2O$$

Ammonia is vaporized and injected into the flue gas upstream of the catalyst bed, and combines with NO_x at the catalyst surface to form an ammonium salt intermediate. The ammonium salt intermediate then decomposes to produce elemental nitrogen and water. The catalyst lowers the temperature required for the chemical reaction between NO_x and ammonia.

Technical factors that impact the effectiveness of this technology include the catalyst reactor design, operating temperature, type of fuel fired, sulfur content of the fuel, design of the ammonia injection system, and the potential for catalyst poisoning. SCR has been demonstrated to achieve high levels of NOx reduction in the range of 80% to 90% control for a wide range of industrial combustion sources, including PC and stoker coal-fired boilers and natural gas-fired boilers and turbines. SCR has not been demonstrated on a CFB Boiler in the United States. Typically, installation of the SCR is upstream of the particulate control device (e.g., baghouse). However, calcium oxide (from a dry scrubber) in the exhaust stream can cause the SCR catalyst to plug and foul, which would lead to an ineffective catalyst. SCRs are classified as a low or high dust SCR. A low dust SCR is usually applied to natural gas combustion units or after a particulate control device. High dust SCR units can be installed on solid fuel combustion units before the particulate control device. However, a high dust SCR cannot be installed on a CFB Boiler prior to the particulate control device because the high alkaline particulate will contaminate and possibly plug the catalyst. Therefore, the exhaust stream after a particulate control device on a CFB Boiler would need to be reheated to maintain an effective operating temperature of the catalyst.

vi. Selective Non-Catalytic Reduction (SNCR)

SNCR involves the non-catalytic decomposition of NO_x to nitrogen and water. A NO_x reducing agent, typically ammonia or urea, is injected into the upper reaches of the furnace. Because a catalyst is not used to drive the reaction, temperatures of 1600°F to 2100°F are required. The basic reactions are:

Ammonia: $4\ NH_3 + 4NO + O_2 \rightarrow 4N_2 + 6H_2O$
Urea: $CO(NH_2)_2 + 2NO + \frac{1}{2}O_2 \rightarrow 2N_2 + CO_2 + H_2O$

Typical NO_x control efficiencies range from 40% to 60% depending on inlet NO_x concentrations, fluctuating flue gas temperatures, residence time, amount and type of nitrogenous reducing agent, mixing effectiveness, acceptable levels of ammonia slip, and presence of interfering chemical substances in the gas stream. SNCR has been applied to a number of different types of combustion sources. SNCR has been widely implemented for NO_x control on new coal-fired CFBs throughout the United States.

B. Technical Feasibility Analysis

LNB, OFA, LEA, and FGR are used to reduce flame temperature and reduce the thermal NO_x; therefore, these control options separately or in combination with another control option, including SCR and SNCR, are technically ineffective on a CFB Boiler that has inherently low combustion temperatures and relatively lower thermal NO_x emissions. These control options separately or in combination with another control option including SCR and SNCR are technically infeasible. The remaining NO_x control options cannot be eliminated based on technical infeasibility.

C. Ranking of Available and Technically Feasible NO_x Control Options by Efficiency

Various information sources evaluated by the Department through the NO_x BACT analysis process assigned varying NO_x control efficiencies for each of the identified available NO_x control technologies/strategies. The following analysis uses the average of expected control efficiencies reported for each strategy:

NO_x Control Option	**NO_x Emission Rate (lb/MMBtu)**	**Estimated NO_x Control Efficiency**
CFB Boiler with SCR	0.014	90.00%
CFB Boiler with SNCR	0.07	50.00%
CFB Boiler without Controls	0.14	0.00%

D. Evaluation of Control Technologies Including Environmental, Economic, and Energy Impacts

The following text evaluates the environmental, economic, and energy impacts associated with the NO_x control options on a CFB Boiler.

i. Environmental Impacts

The environmental impacts from both SCR and SNCR result from the handling of the anhydrous ammonia. Spent catalyst from an SCR will have to be properly disposed as a possible hazardous waste. An SCR unit would have to be installed downstream of the baghouse to reduce fouling of the catalyst.

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Therefore, as an example, natural gas would have to be used to reheat the exhaust gas to optimal temperature for the SCR unit. The combustion of the natural gas would cause additional NO_x, CO, VOC, and PM_{10} emissions into the atmosphere. Even though there are environmental concerns associated with SCR and SNCR, these NO_x control options cannot be eliminated based on these concerns.

ii. Energy Impacts

SCR would cause significant backpressure in the CFB Boiler leading to lost boiler efficiency and, thus, a loss of power production. Along with the power loss, SME-HGS would be subject to the additional cost of reheating the exhaust gas, which would be expensive at the current price of natural gas. The energy impacts from an SNCR are minimal and an SNCR does not cause a loss of power output from the facility. Even though these are energy impact concerns, the control options cannot be eliminated based on these concerns. The impacts of additional cost due to reheating the exhaust gas are included in the annual cost of operating an SCR unit, which is presented in the economic impact analysis.

iii. Economic Impacts

Department verified economic impacts associated with NO_x control options were compared in the SME-HGS application using estimated annualized capital, operating, and maintenance costs. Cost estimates for SCR and SNCR were derived from Chapter 4 in the *OAQPS COST Control Manual* (EPA 452/B-02-001). Where appropriate, assumptions were made from suggested/typical data that were supplied in the manual, and if data was not available from the manual, best engineering judgment was used. As reported in the application, the cost effective value for SNCR is approximately \$2137/ton of NO_x removed and the cost effective value for SCR is approximately \$12,562/ton of NO_x removed. Based on the cost-effective values provided above, SNCR is deemed economically feasible for the affected unit and SCR is deemed economically infeasible for the affected unit in this case. A detailed cost analysis is included in the application for this air quality permit.

E. NO_x BACT Determination

SME-HGS proposed the use of SNCR to maintain compliance with a proposed NO_x BACT emission limit of 0.07 lb/MMBtu (30-day rolling average). Based on Department verified information contained in the SME-HGS application for this air quality permit and taking into consideration technical, environmental, and economic factors, the Department determined that the proposed NO_x emission control strategy and emission limit constitute BACT in this case. This BACT determined control option will provide an approximate 90% NO_x reduction efficiency.

SCR was eliminated based on the high cost per ton of NO_x removed. Further, since the SCR unit would have to be installed downstream from the permitted and BACT determined FFB to eliminate fouling and excessive loading of the catalyst, the CFB exhaust gas would need to be reheated. Reheating the exhaust gas is a significant factor in the high annual cost of SCR and leads to a substantial increase in emissions from the reheat process summarized. Finally, the Department is unaware of any CFB Boiler permitted or in operation in the United States, which has an SCR unit installed for NO_x emission control.

The BACT determined NO_x emission limit is equal to the lowest NO_x BACT emission rates contained in the RBLC. Further, two of the boilers permitted with NO_x BACT emission limits of 0.07 lb/MMBtu, respectively, are CFB Boilers that employ SNCR. The data from the RBLC website is summarized in the application.

The Department determined that the CFB Boiler operating under the BACT-determined control requirements is capable of meeting the established NO_x BACT emission limit of 0.07 lb NO_x/MMBtu (30-day rolling average). Further, the Department determined that the periodic NO_x source testing, continuous NO_x emission monitoring, and the applicable recordkeeping and reporting requirements will adequately monitor compliance with the permitted NO_x BACT limit(s).

4. CO Emissions

CO emissions from a CFB coal-fired boiler are typically controlled using proper design and combustion techniques. Typical CO control technologies (e.g., catalytic and thermal oxidizers) are available; however, they are not typically considered appropriate for coal-fired boilers because of high particulate loading, catalyst fouling, and/or high cost to reheat the exhaust gas.

A. Identification of Available CO Control Strategies/Technologies

The following control options are evaluated as available CO control options for the proposed SME-HGS project:

i. CFB Boilers with Proper Design and Combustion (no add-on control); and
ii. CFB Boilers Catalytic or Thermal Oxidizers.

The following text provides a brief overview of the above-cited CO control options/technologies/strategies that have been evaluated for the proposed project.

i. Proper Design and Combustion (No Add-On Control)

In an ideal combustion process, all of the carbon and hydrogen contained within the fuel is oxidized to carbon dioxide (CO_2) and water (H_2O). The emission of CO in a combustion process is the result of incomplete fuel combustion. Reduction of CO emissions can be accomplished by controlling the combustion temperature, residence time, and available oxygen. Normal combustion practice at the facility will involve maximizing the heating efficiency of the fuel in an effort to minimize fuel usage. This efficiency of fuel combustion will also minimize CO formation.

ii. Catalytic or Thermal Oxidation of Post-Combustion Gases

Oxidizers or incinerators use heat to destroy CO in the gas stream. Incineration is an oxidation process that ideally breaks down the molecular structure of an organic compound into carbon dioxide and water vapor.

Temperature, residence time, and turbulence of the system affect CO control efficiency. A thermal incinerator generally operates at temperatures between 1,450 and 1,600ºF. Heat recovery between 35% and 70% can be realized with recuperative systems and up to 95% can be realized with regenerative systems. The thermal oxidation system analyzed for the main boiler is a regenerative thermal oxidation (RTO) system with 95% heat recovery. Regenerative systems are typically designed for exhaust flow rates between 10,000 and 100,000 standard cubic feet per minute (scfm). Recuperative systems are typically designed for exhaust flow rates between 500 and 50,000 scfm. Regenerative systems typically have higher capital costs than recuperative systems, but capital costs are typically offset by savings on auxiliary fuel use.

Catalytic incineration is similar to thermal incineration; however, catalytic incineration generally allows for oxidation at temperatures ranging from 600 to 1,000ºF and can achieve up to 70% heat recovery. The catalyst systems are typically metal oxides such as nickel oxide, copper oxide, manganese dioxide, or chromium oxide. Noble metals such as platinum and palladium may also be used. Fixed bed or fluid bed catalytic incinerators can be used on combustion exhaust streams and can achieve up to 70% heat recovery. A fixed bed catalytic incinerator with 70% heat recovery is examined in this BACT analysis because of its comparatively lower capital cost.

B. Technical Feasibility Analysis

For the purposes of this BACT analysis, proper design and combustion control and catalytic and thermal oxidation are considered technically feasible, although oxidation is not typically applied to coal-fired boilers. No available CO control options are eliminated due to technical infeasibility.

C. Ranking of Available and Technically Feasible CO Control Options by Efficiency

Various information sources evaluated by the Department through the CO BACT analysis process assigned varying CO control efficiencies ranging from 70% control for good combustion practices to 95% for the CO oxidation control technologies/strategies. To be conservative, the SME-HGS application considered 90% control efficiency for the top oxidation control. The following table ranks the CO control options.

CO Control Option	**CO Emission Rate (lb/MMBtu)**	**Estimated Control Efficiency**
CFB Boiler with Thermal Oxidation	0.01	90%
CFB Boiler with Catalytic Oxidation	0.01	90%
CFB Boiler with Proper Design and Combustion Practices (no add-on control)	0.10	---

D. Evaluation of Control Technologies Including Environmental, Economic, and Energy Impacts

The following text evaluates the environmental, economic, and energy impacts associated with the CO control options on a CFB Boiler.

i. Environmental Impacts

Catalytic oxidation results in adverse environmental impact from the handling of the spent catalyst and may have to be disposed of as a hazardous waste. A catalytic oxidation unit would have to be installed downstream of the FFB to reduce fouling of the catalyst; therefore, the exhaust gas would require reheating to achieve optimal CO reduction. The combustion of the additional fuel for reheating purposes would cause an increase in NO_x, SO_2, CO, VOC, and PM_{10} emissions. However, the control options cannot be eliminated based on these concerns alone.

ii. Energy Impacts

The additional consumption of fuel to reheat the exhaust gas would result in energy impacts. With current market prices for fuel, this strategy would also be very expensive. Even though these energy impacts exist, the control options cannot be eliminated based on these concerns.

iii. Economic Impacts

Department verified economic impacts associated with CO control options were compared in the SME-HGS application using estimated annualized capital, operating, and maintenance costs. Cost estimates for catalytic or thermal oxidation were derived from Section 3, Chapter 2 (9/2000) in the *OAQPS COST Control Manual*. Where appropriate, assumptions were made from suggested/typical data that were supplied in the manual and if data was not available from the manual, best engineering judgment was used. As reported in the application, the cost effective value for thermal oxidation is approximately \$6916/ton of CO removed and the cost effective value for catalytic oxidation is approximately \$4373/ton of CO removed. Based on the cost-effective values provided above, all control options are deemed economically infeasible for the affected unit in this case. A detailed cost analysis is included in the application for this air quality permit.

E. CO BACT Determination

SME-HGS proposed the use of good combustion practices with no additional control to maintain compliance with a proposed CO BACT emission limit of 0.10 lb/MMBtu (1-hr average). Based on Department verified information contained in the SME-HGS application for this air quality permit and taking into consideration technical, environmental, and economic factors, the Department determined that the proposed CO emission control strategy and emission limit constitute BACT in this case.

Catalytic and thermal oxidation were eliminated based on the high cost per ton of CO removed and because the increased fuel consumption associated with reheating the gas stream would result in additional environmental impacts.

The BACT determined CO emission limit is equal to the lowest CFB Boiler CO BACT emission rates contained in the RBLC. Two non-CFB boilers listed in the RBLC have lower emission limits, but these two sources do not have a control device and rely on good combustion practices for CO control. The data from the RBLC website is summarized in the application.

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The Department determined that the CFB Boiler operating under the BACT-determined control requirements is capable of meeting the established CO BACT emission limit of 0.10 lb CO/MMBtu (1-hr average). Further, the Department determined that the periodic CO source testing and the applicable recordkeeping and reporting requirements will adequately monitor compliance with the permitted CO BACT limit(s).

5. VOC Emissions

VOC emissions from a CFB coal-fired boiler are typically controlled using proper design and combustion techniques that were identified in the CO BACT analysis. Typical VOC control technologies (e.g., catalytic and thermal oxidizers) are available; however, they are not typically considered appropriate for coal-fired boilers because of high particulate loading, catalyst fouling, or high cost to reheat the exhaust gas.

A. Identification of Available VOC Control Strategies/Technologies

The following control options were evaluated for the CO control options and will be evaluated for the VOC control options. A description of each control technology is provided in the CO BACT analysis:

i. CFB Boilers with Proper Design and Combustion (no add-on control); and
ii. CFB Boilers with Catalytic or Thermal Oxidizers.

B. Technical Feasibility Analysis

For the purposes of this BACT analysis, proper design and combustion control, catalytic oxidation, and thermal oxidation will be considered technically feasible, although oxidation is not typically applied to coal-fired boilers. No available VOC control options are eliminated due to technical infeasibility.

C. Ranking of Available and Technically Feasible VOC Control Options by Efficiency

Various information sources evaluated by the Department through the VOC BACT analysis process assigned varying VOC control efficiencies ranging from 70% for good combustion practices to 95% for the VOC oxidation control technologies/ strategies. To be conservative, the SME-HGS application considered 90% control efficiency for the top oxidation control. The following table ranks the VOC control options.

VOC Control Option	**VOC Emission Rate (lb/MMBtu)**	**Estimated Control Efficiency**
CFB Boiler with Thermal Oxidation	0.0003	90%
CFB Boiler with Catalytic Oxidation	0.0003	90%
CFB Boiler with Proper Design and Combustion Practices (no add-on control)	0.003	---

D. Evaluation of Control Technologies Including Environmental, Economic, and Energy Impacts

The following text evaluates the environmental, economic, and energy impacts associated with the VOC control options on a CFB Boiler.

i. Environmental Impacts

Catalytic oxidation results in adverse environmental impact from the handling of the spent catalyst and may have to be disposed of as a hazardous waste. A catalytic oxidation unit would have to be installed downstream of the FFB to reduce fouling of the catalyst; therefore, the exhaust gas would require reheating to achieve optimal VOC reduction. The combustion of the additional fuel for reheating purposes would cause an increase in NO_x, SO_2, CO, VOC, and PM_{10} emissions. However, the control options cannot be eliminated based on these concerns alone.

ii. Energy Impacts

The additional consumption of fuel would result in energy impacts from reheating the exhaust. With current market prices for natural gas, this strategy would also be very expensive. Even though these energy impacts exist, the control options cannot be eliminated based on these concerns.

iii. Economic Impacts

Department verified economic impacts associated with VOC control options were compared in the SME-HGS application using estimated annualized capital, operating, and maintenance costs. Cost estimates for catalytic or thermal oxidation were derived from Section 3, Chapter 2 (9/2000) in the *OAQPS COST Control Manual*. Where appropriate, assumptions were made from suggested/typical data that were supplied in the manual, and, if data was not available from the manual, best engineering judgment was used. As reported in the application, the cost effective value for thermal oxidation is approximately $222,928/ton of VOC removed and the cost effective value for catalytic oxidation is approximately $142,546/ton of VOC removed. Based on the cost-effective values provided above, all control options are deemed economically infeasible for the affected unit in this case. A detailed cost analysis is included in the application for this air quality permit.

E. VOC BACT Determination

SME-HGS proposed the use of good combustion practices with no additional control to maintain compliance with a proposed VOC BACT emission limit of 0.003 lb/MMBtu (1-hr average). Based on Department verified information contained in the SME-HGS application for this air quality permit and taking into consideration technical, environmental, and economic factors, the Department determined that the proposed VOC emission control strategy and emission limit constitute BACT in this case.

Catalytic and thermal oxidation were eliminated based on the high cost per ton of VOC removed and because the increased fuel consumption associated with reheating the gas stream would result in additional environmental impacts.

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The BACT determined VOC emission limit is among the lowest CO BACT emission rates contained in the RBLC for PC or CFB Boiler technologies. Further, the permitted VOC BACT emission rate of 0.003 lb/MMBtu matches recently permitted VOC BACT limits permitted for operation in Montana. The data from the RBLC website is summarized in the application.

The Department determined that the CFB Boiler operating under the BACT-determined control requirements is capable of meeting the established VOC BACT emission limit of 0.003 lb VOC/MMBtu (1-hr average). Further, the Department determined that the periodic VOC source testing and the applicable recordkeeping and reporting requirements will adequately monitor compliance with the permitted VOC BACT limit(s).

6. H_2SO_4, Acid Gases (HCl and HF), Trace Metals, and Condensable PM_{10} Emissions

Sulfuric acid mist, acid gases (primarily HF and HCl), trace metals (including lead), and condensable PM_{10} are grouped together in this BACT evaluation because these pollutants are a major component of condensable PM_{10}. Other inorganic and organic species (e.g., ammonium bisulfate and certain VOCs) can also contribute to condensable PM_{10}. Control options from a CFB boiler are typically limited to the available SO_2 and/or filterable PM/PM_{10} control options.

H_2SO_4, acid gases (HCl and HF), trace metals (including lead), and condensable PM_{10} generally form in the exhaust system of a boiler. The formation is dependent upon several factors including residence time within specific temperature ranges, flue gas moisture content, combustion conditions, and concentrations of chlorine, fluorine, and trace metals in the coal.

Sulfuric Acid Mist (H_2SO_4)

H_2SO_4 is typically created when SO_3 in the flue gas reacts with water. SO_3 is formed during the combustion process in a coal-fired boiler. H_2SO_4 mist in boiler flue gas generally forms in three phases as described below:

Sulfur in the boiler fuel oxidizes to form sulfur dioxide (SO_2).

$$S + O_2 \rightarrow SO_2$$

A portion of the SO_2 further oxidizes to sulfur trioxide (SO_3).

$$SO_2 + \frac{1}{2} O_2 \rightarrow SO_3$$

SO_3 reacts with water in the exhaust stream or the atmosphere to form H_2SO_4.

$$SO_3 + H_2O \rightarrow H_2SO_4$$

Because H_2SO_4 mist is created in several steps, control strategies can be approached in a variety of ways that may be applied individually or in combination. Control strategies generally focus on reducing the amount of SO_2 and SO_3 in the flue gas, capturing sulfuric acid mist aerosol particles, and controlling exhaust system conditions to limit mist formation.

Acid Gases (HCl and HF)

Acid gases can be controlled to different degrees by standard control technologies for other criteria pollutants (primarily with SO_2 and filterable PM control technologies).

Trace Metals (Including Lead)

Depending on the physical and chemical properties of a metal and boiler combustion conditions, some metals can be emitted in the gas phase, while others may be emitted as particulates and will tend to be captured either in the fly or bed ash. Metals emitted from coal combustion include: arsenic, beryllium, cadmium, chromium, manganese, and lead and based on the physical and chemical properties of these listed metals, most would be emitted as particulate matter. A smaller percentage of these metals and other metals may also be emitted as volatiles and condensable particulates.

Condensable Particulate

Condensable particulate can be controlled to different degrees by controlling the components that make up condensable particulate (H_2SO_4 mist, acid gases, volatile trace metals, etc.) with standard control technologies for other criteria pollutants (primarily SO_2 and filterable PM control technologies).

A. Identification of Available H_2SO_4, Acid Gases (HCl and HF), Trace Metals, and Condensable PM_{10} Emissions Control Strategies/Technologies

Available control technologies for H_2SO_4 mist, acid gases (HCl and HF), trace metals (including lead), and condensable PM_{10} emissions from a CFB Boiler are listed below:

i. Wet FGD;
ii. Wet FGD followed by wet ESP;
iii. Dry FGD followed by FFB or ESP; and
iv. No additional add-on control.

The following text provides a brief overview of the above-cited control options/technologies/strategies that have been evaluated for the proposed project.

i. Wet FGD

Wet FGD is limited in its ability to control H_2SO_4 mist and acid gas emissions for two reasons. First, the moisture inherent in the system, combined with the sudden cooling created by the slurry spray, tends to create sulfuric acid mist and acid gases (two significant components of condensable PM_{10}). Second, because the condensable particulates are extremely small, they are not effectively captured by the washing action of the wet FGD. A wet FGD system would be expected to control sulfuric acid mist and acid gas (including HF) emissions with efficiency less than 25%.

ii. Wet FGD Followed by Wet ESP

Wet ESPs can control H_2SO_4mist and acid gases with a very high efficiency. Not all of the SO_3 in the gas stream is converted to sulfuric H_2SO_4 mist, which results in an overall H_2SO_4 mist control efficiency for this system of approximately 90% (other acid gases will also be collected at an efficiency of

90%). Use of an FFB downstream of a wet scrubber is not technically feasible, the high moisture content of the flue gas exiting the scrubber would cause the filter cake to agglomerate, clogging the filter and making the filter cleaning extremely difficult.

iii. Dry FGD Followed by FFB or ESP

Dry FGD systems, including SDAs and fly-ash reinjection systems, are generally capable of controlling SO_3 (and H_2SO_4) and acid gases with an efficiency of at least 90%. As noted above, a particulate control device is required following a dry FGD system to collect the injected reagent particles. While ESPs and FFBs provide essentially the same level of particulate control, FFBs have the potential to enhance SO_2, SO_3, and HF removal efficiency as the exhaust gas passes through a filter cake containing alkaline ash and unreacted reagent. FFBs also have a high removal efficiency of trace metals and may provide some additional control for other acid gases.

B. Technical Feasibility Analysis

None of the identified available H_2SO_4, acid gas (HCl and HF), trace metals (including lead), and condensable PM_{10} control technologies are technically infeasible. Therefore, no available control options are eliminated at this stage.

C. Ranking of Available and Technically Feasible H_2SO_4, Acid Gas (HCl and HF), Trace Metals (including lead), and condensable PM_{10} Control Options by Efficiency

The following table summarizes the available control options, their respective potential control efficiency values, and their ranking for the purposes of this BACT analysis. Limited data is available on control efficiencies for these pollutants; therefore, the proposed CFB Boiler may not perform to the exact control efficiencies highlighted in the table.

Technology	**H_2SO_4 Control Efficiency**	**Acid Gas Control Efficiency**	**Trace Metal Control Efficiency**	**Condensable PM_{10} Control Efficiency**
Dry FGD &FFB or ESP	90%	80%	90%	90%
Wet FGD & Wet ESP	90%	90%	80%	90%
Wet FGD	25%	80%	70%	80%
No Add-On Control	---	---	---	---

The top two control alternatives potentially provide similar H_2SO_4 and condensable PM_{10} control efficiency, while the top two differ in acid gas and trace metal control efficiencies. Because SME-HGS proposes to implement one of these two top alternatives based on SO_2 and filterable PM BACT analysis, no further analysis is required for H_2SO_4, acid gases, trace metals, and condensable PM_{10} control.

D. Evaluation of Control Technologies Including Environmental, Economic, and Energy Impacts

The environmental, economic, and energy impacts associated with the available H_2SO_4, acid gas, trace metals, and condensable PM_{10} control options are the same as the impacts addressed in the BACT analyses for SO_2 and filterable PM emissions. Because these control strategies have been determined to constitute BACT for SO_2 and filterable PM, no additional environmental, economic, and energy impacts will be realized through the control of H_2SO_4, acid gas, trace metals, and condensable PM_{10}, through utilization of these co-benefit control strategies.

E. H_2SO_4, Acid Gas, Trace Metals, and Condensable PM_{10} BACT Determination

H_2SO_4

As previously stated, either of the two top technologies for H_2SO_4 mist control will reduce emissions by 90%. SME-HGS proposes a CFB Boiler combusting low sulfur coal with dry FGD followed by an FFB to maintain compliance with a proposed H_2SO_4 BACT emission limit of 0.0054 lb/MMBtu. Based on Department verified information contained in the SME-HGS application for this air quality permit and taking into consideration technical, environmental, and economic factors, the Department determined that the proposed H_2SO_4 emission control strategy and emission limit constitute BACT in this case.

This emission rate, although not the lowest, compares favorably to similar facilities in the RBLC and is lower than the BACT-determined emissions rates for the recently permitted Gascoyne CFB Boiler and the two most recent coal-fired utilities permitted for operation in Montana. The data from the RBLC website is summarized in the application.

The Department determined that the CFB Boiler operating under the BACT-determined control requirements is capable of meeting the established H_2SO_4 BACT emission limit of 0.0054 lb/MMBtu over any 1-hour time period. Further, the Department determined that the periodic source testing and the applicable recordkeeping and reporting requirements contained in the permit will adequately monitor compliance with the permitted BACT limit(s).

Acid Gases

As previously stated, either of the two top technologies for acid gas control will reduce emissions by 80% to 90%. SME-HGS proposes a CFB Boiler combusting low sulfur coal with dry FGD followed by an FFB to maintain compliance with a proposed HF BACT emission limit of 0.0017 lb/MMBtu and a proposed HCl BACT emission limit of 0.0021 lb/MMBtu. Based on Department verified information contained in the SME-HGS application for this air quality permit and taking into consideration technical, environmental, and economic factors, the Department determined that the proposed emission control strategy and emission limit(s) for HF and HCl, respectively, constitute BACT in this case.

These BACT-determined acid gas emission rates, although not the lowest, compare favorably to similar facilities in the RBLC, representing an average BACT emission rate for those sources contained in the RBLC. The data from the RBLC website is summarized in the application.

The Department determined that the CFB Boiler operating under the BACT-determined control requirements is capable of meeting the established HF and HCl BACT emission limits of 0.0017 lb/MMBtu and 0.0021 lb/MMBtu over any 1-hour time period, respectively. Further, the Department determined that the periodic source testing and the applicable recordkeeping and reporting requirements contained in the permit will adequately monitor compliance with the permitted BACT limit(s).

Trace Metals (including Lead)

As previously stated, either of the two top technologies for trace metals control will reduce emissions by 80% to 90%. SME-HGS proposes a CFB Boiler combusting low sulfur coal with dry FGD followed by an FFB as BACT for trace metals. SME-HGS proposes the PM_{10} emission rate as a surrogate emission limit for trace metal emissions.

The Department determined that the CFB Boiler operating under the BACT-determined control requirements is capable of meeting the established PM_{10} surrogate emission limit of 0.026 lb/MMBtu. Further, the Department determined that the periodic source testing (PM_{10}) and the applicable recordkeeping and reporting requirements contained in the permit will adequately monitor compliance with the permitted BACT limit.

PM_{10}

The PM_{10} emission rate is calculated based on the assumed components that make up the condensable PM_{10} fraction plus the BACT-determined filterable PM emission limit. The following table presents the emissions rates for the components that are assumed to make up the condensable PM_{10} fraction as well as the BACT-determined filterable PM emission rate.

Component	**Emission Rate (lb/MMBtu)**
HCl	0.0021
HF	0.0017
H2SO4	0.0054
VOC	0.0030
Ammonium Bisulfate	0.0015
Trace Metals	0.0002
Organic Condensables	0.0005
Total Condensables	**0.014**
Filterable PM	0.012
PM_{10} Limit	0.026*

* PM_{10} BACT-determined emission limit equals the condensable PM_{10} fraction plus the BACT-determined filterable PM limit

As previously stated, either of the two top technologies for the pollutants making up the condensable PM_{10} fraction will reduce emissions by 80% to 90%. SME-HGS proposes a CFB Boiler combusting low sulfur coal with dry FGD followed by an FFB to maintain compliance with a PM_{10} emission limit of 0.026 lb/MMBtu. Based on Department verified information contained in the SME-HGS application for this air quality permit and taking into consideration technical, environmental, and economic factors, the Department determined that the proposed emission control strategy and the Department-established emission limit for condensable PM_{10} constitutes BACT in this case.

The BACT-determined PM_{10} emission rate, although not the lowest, compares favorably to similar facilities in the RBLC. The data from the RBLC website is summarized in the application.

The Department determined that the CFB Boiler operating under the BACT-determined control requirements is capable of meeting the established PM_{10} emission limit of 0.026 lb/MMBtu. Further, the Department determined that the periodic source testing and the applicable recordkeeping and reporting requirements contained in the permit will adequately monitor compliance with the permitted BACT limit(s).

7. Mercury Emissions

Coal contains trace levels of a variety of metals and other elements or compounds. Mercury is one of those trace elements. Emissions of mercury into the atmosphere have been identified as a health concern principally due to its capacity to react chemically with the environment to form a toxic compound – methyl mercury – that accumulates through the aquatic food chain with a potential to threaten human populations. Depending on its chemical form, mercury can persist in the atmosphere and travel vast distances before being deposited on terrestrial features.

When coal burns, mercury is released in one of three forms, or species: elemental mercury vapor, oxidized mercury vapor, or mercury adsorbed to the surface of a solid particle. The different species of mercury respond differently to different types of control technologies.

Elemental mercury is the most difficult of the three mercury species to control. To date, no technologies have been demonstrated in field-testing to consistently and significantly reduce elemental mercury emissions. Most research is focused on developing effective means for converting elemental mercury to one of the other two species of mercury.

Oxidized mercury is water soluble and generally more reactive than elemental mercury. Because of this, technologies for controlling SO_2 emissions have demonstrated promise for controlling oxidized mercury emissions as well. Research has shown a strong correlation between coal chlorine content and the proportion of oxidized mercury in coal combustion products. Under specific conditions, the addition of chlorine or other halides has been shown to promote mercury oxidation.

Particulate mercury may be controlled with FFBs and/or ESPs – devices commonly used to control particulate emissions from coal combustion processes. The proportion of particulate mercury emissions appears to be related to the amount of oxidized mercury. Oxidized mercury is more readily adsorbed to the surface of particles such as coal ash, FGD media, or activated carbon than is elemental mercury. Higher levels of unburned carbon (UBC) in the ash have also been shown to favor mercury adsorption.

Department of Energy, U.S. Environmental Protection Agency, and Industry Research

For the last several years the Department of Energy/National Energy Technology Laboratory (DOE/NETL) and the Electric Power Research Institute (EPRI) have evaluated mercury removal technologies for potential application to the power generation industry. However, the Department and SME-HGS have been unable to find research specifically evaluating control of mercury emissions from CFB Boilers.

A recent white paper from the EPA ("the technology review report") describes and summarizes the status of test programs throughout the country aimed at understanding and improving capabilities for reducing mercury emissions from coal-fired electric generators ("*Control of Mercury Emissions from Coal Fired Electric Utility Boilers: An Update*," Air Pollution Prevention and Control Division, National Risk Management Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency; February 18, 2005). Results have varied greatly, from an actual increase of mercury emissions to over 90 percent mercury removal efficiency.

It has long been recognized that coal quality is a primary determining factor in mercury removal effectiveness. Bituminous coal generally contains higher levels of chlorine and UBC, and has therefore proven to provide enhanced capacity for mercury reduction. Conversely, subbituminous coal and lignite, often grouped as the single category of "low rank coal," generally contain low concentrations of chlorine and UBC. Control of mercury emissions resulting from combustion of these fuels has proven to be highly variable.

Mercury emissions control research, as it relates to coal-fired power generation, has followed two general paths: characterizing and enhancing co-benefits from existing control equipment (sometimes referred to as "native capture"), and development of mercury-specific control technologies. The two paths at times intermingle since mercury-specific control technologies often must be used in tandem with native capture. For example, modified or standard powdered activated carbon injection (ACI) is one of the most promising mercury-specific control technologies under certain conditions. Once injected into the exhaust stream, however, it must be captured by a particulate emissions control device. Following are some concluding observations from the EPA's technology review report:

- "Assuming sufficient RD&D of representative technologies, new and existing systems installed to control NO_x and SO_2 (e.g., SCR+FGD+FFB) have the potential to achieve 90%+ control of mercury for bituminous coal-fired boilers. Subbituminous and lignite systems appear to require mercury oxidation technology and/or additional advanced sorbents to achieve these levels."
- "It is believed that ACI and enhanced multi-pollutant controls will be available after 2010 for commercial application on most, if not all, key combinations of coal type and control technology to provide mercury removal levels between 60 and 90%. Also, optimized multi-pollutant controls may be available in the 2010-2015 timeframe for commercial application on most, if not all, key combinations of coal type and control technology to provide mercury removal levels between 90 and 95%."
- "The principle concerns relating to broad-scale use of mercury controls are the reliability of mercury reductions possible and the risks of adverse side effects. To the extent that required mercury reductions are within the capabilities of the technology with minimum risks of side effects, mercury controls could be considered available. However, as discussed in this paper, there remain some questions regarding their performance relative to broad-scale use. These questions are being investigated in ongoing efforts."

<u>Project Coal Supply</u>

SME-HGS is proposing to use Powder River Basin (PRB) subbituminous coal as the CFB Boiler fuel source. Specifically, SME-HGS is currently considering purchasing coal from one of the following three southeastern Montana coal mines: Spring Creek, Decker, and/or Absaloka coal mines. Coal quality data from two of these sources indicates average coal mercury content is 0.05-0.07 ppmw, compared with a national average of 0.17 ppmw ("Mercury in U.S. Coal – Abundance, Distribution, and Modes of Occurrence," USGS Fact Sheet FS-095-01, September 2001; available at pubs.usgs.gov/fs/fs095-01/fs095-01.pdf). The upper 95 percent confidence level mercury content value from these coal analyses is 0.13 ppmw. The corresponding uncontrolled mercury emission rate, assuming all of the mercury in the coal is released to the atmosphere, would be 10.0 lb/TBtu or 230 lb/yr.

A. Identification of Available Mercury Control Strategies/Technologies

The following paragraphs describe alternative technologies that are being evaluated for feasibility and effectiveness of controlling mercury emissions from electric utility boilers as presented in the 2005 EPA technology review report. The technologies are grouped into the following categories:

i. Native Controls:

a. Particulate Controls
b. SO_2 Controls
c. NO_x Controls
d. SDA/FFB Controls

ii. Enhanced Controls

a. Fuel Blending
b. Oxidizing Chemicals
c. UBC Enhancement
d. Mercury Specific Catalyst
e. Improvement of Wet FGD Mercury Capture

iii. Sorbent Injection: Add-on mercury control equipment; and

iv. Additional Alternatives

The following text provides a brief overview of the above-cited control options/technologies/strategies that have been evaluated for the proposed project.

i. Native Controls

Native controls include mercury removal accomplished by existing controls for NO_x, SO_2, and particulate.

a. Particulate Controls

Survey and test data indicate that ESPs provide limited mercury emissions control. Because the control they do provide results from the capture of particulate-bound mercury, its effectiveness depends on the relative amount of particulate mercury speciation. FFBs have been demonstrated to be relatively more effective at controlling mercury emissions from bituminous and low rank coals. This appears to be due to the effect of the ash-cake that collects on the surface of the filters. The cake enhances gas-particle interactions, promoting adsorption of oxidized mercury and, where there is adequate chlorine, oxidation of elemental mercury.

b. SO_2 Controls

Wet FGD scrubbers have demonstrated mercury removal efficiencies ranging from less than 50% to approximately 75% for bituminous coal. No data were found that evaluated effectiveness when burning low rank coal. Because oxidized mercury – which is generally present in high proportion for bituminous coal – is water soluble, wet FGD removal effectiveness would be expected to be higher than has been observed. It is thought that wet FGD systems tend to promote chemical reduction of oxidized mercury to elemental mercury, resulting in subsequent re-emission.

While evaluations of mercury emissions from CFB Boilers do not appear in the literature, one of the primary advantages of CFB Boiler technology is the reduction of SO_2 emissions, which in turn may benefit mercury capture in the exhaust gas stream. Potential for mercury capture co-benefits associated with CFB technology will be addressed in a subsequent portion of this analysis.

c. NO_x Controls

SCR units appear to enhance oxidation of elemental mercury when burning bituminous coal, but limited data indicate marginal effectiveness when burning subbituminous coal.

d. SDA/FFB Systems

Emissions control systems consisting of spray dryer absorbers (SDAs) and FFBs have been demonstrated to provide over 90 percent mercury control efficiency for bituminous coal combustion. Average control efficiency when burning subbituminous coal is approximately 25 percent. This low effectiveness – less than has been observed with FFBs alone – is thought to be the result of HCl removal by the SDA. It is thought that bituminous coal contains enough excess chlorine that HCl scrubbing by the SDA is not a limiting factor for that coal rank.

ii. Enhanced Controls

Enhanced controls include mercury control strategies accomplished through the enhancement of existing controls.

a. Fuel Blending

Replacing a portion of PRB subbituminous coal with bituminous coal has been evaluated with mixed results ("Evaluation of Sorbent Injection for Mercury Control," Quarterly Technical Report, Reporting Period:April 1, 2005 – June 30, 2005; Sharon Sjostrom; available at www.netl.doe.gov/coal/E&WR /mercury/control-tech/sorbent-injection2.html.). In one short-term test, mercury capture increased from approximately 25 percent to nearly 80 percent. At another facility, no additional mercury capture was observed.

b. Oxidizing Chemicals

Limited short-term testing has been conducted on the effects of introducing chlorine and other halogens into the combustion system. The test results vary depending on boiler type, coal quality, and downstream pollution control equipment. Test results show some promise for adding these chemicals with ACI to achieve high levels of mercury emission reduction. However, further evaluation of impacts to operations has been recommended in addition to further evaluation of effectiveness over various conditions and durations.

c. UBC Enhancement

Derivative data from field tests have provided evidence that increasing the portion of unburned carbon (UBC) in coal ash enhances mercury capture. Adjusting combustion conditions to increase ash UBC levels will require evaluation on a case-by-case basis of detrimental effects to boiler operation and efficiency.

d. Mercury-Specific Catalysts

Testing is ongoing regarding the effectiveness and feasibility of injecting oxidizing chemicals or employing catalyst systems designed to facilitate oxidation of elemental mercury.

e. Improvement of Wet FGD Mercury Capture

Limited testing has been conducted on the potential for SCR and an injected chemical additive to improve elemental mercury oxidation and to limit or eliminate chemical reduction of oxidized mercury in a wet FGD system. Results from the tests, which so far have been carried out only on bituminous coal, indicate that SCR and/or chemical additives can improve overall mercury capture in a wet FGD/ESP system firing bituminous coal.

iii. Sorbent Injection

Injection of various sorbents into the boiler exhaust stream has been the primary technology under evaluation that is specific to mercury control (i.e., it does not rely on a co-benefit of controlling some other pollutant). This technology was identified as having potential to reduce mercury emissions from coal-fired electric utility boilers because of its successful history of application to waste incinerators for the same purpose. Sorbent injection technology used in waste incinerators is not directly transferable to electric utility boilers, however, due to significant differences in operational requirements and in exhaust gas characteristics such as mercury concentrations, chemical makeup, and volume.

As suggested by the name, sorbent injection technology works by providing active surfaces that promote adsorption of exhaust mercury. The result is particulate-bound mercury that can be captured by particulate emissions control equipment such as an ESP or FFB. Standard ACI has proven to be effective for improving mercury emissions from bituminous coal on a relatively consistent basis. Its effectiveness on subbituminous coal emissions is dependent upon facility and operating parameters, and has been consistently lower than that observed with bituminous coal. Recent research suggests that the levels of chlorine and sulfur in the combustion gases are key in determining mercury capture efficiency.

Several alternative injection media have been and continue to be evaluated to address deficiencies and concerns associated with ACI. One class of alternative media consists of standard ACI that has been treated with a halogen, most commonly boron. The treatment serves to enhance elemental mercury oxidation and overall mercury adsorption. Initial results from several short-term tests indicate that halogenated ACI could potentially be more effective at mercury removal than standard ACI over a range of parameters while offering other benefits. Several evaluations of this technology are ongoing, and additional tests are planned.

Other specialty sorbent materials have been identified and are being evaluated for specific applications. These materials are being developed and evaluated primarily for the purposes of reducing control costs and improving potential for beneficial use of the collected ash.

iv. Additional Alternatives

An additional mercury control alternative, one that was not discussed in the EPA technology review report, is to treat the coal in order to remove a portion of its mercury prior to combustion. A joint venture company, the Alaska Cowboy Coal Power Consortium, has demonstrated in small-scale tests that their process for drying low rank coals can also remove a portion of the coal's mercury content. It has yet to be demonstrated on a full scale.

B. Technical Feasibility Analysis

The NSR Manual describes two key criteria for determining whether an alternative control technology is technically feasible. According to the NSR Manual, a technology must be "available" and "applicable" in order to be considered technically feasible. A technology is available "if it has reached the licensing and commercial sales stage of development." An identified alternative control technique may be considered presumptively applicable if "it has been or is soon to be deployed (e.g., is specified in a permit) on the same or similar source type." The following paragraphs evaluate the technical feasibility of the alternative control technologies identified above by applying these criteria of availability and applicability.

i. Native Controls

Insofar as technologies applied to control emissions of other pollutants also provide mercury control co-benefits, these technologies are considered technically feasible.

ii. Enhancement of Existing Controls

None of the native control enhancement technologies described above have demonstrated widespread applicability to coal-fired utility boilers on a full-scale basis. Further, and more importantly, none have been evaluated on any level for applicability to CFB Boiler technology. For these reasons, identified native control enhancement technologies are considered to be technically infeasible for application to the SME-HGS. The Department has recently determined that mercury capture enhancement technologies are generally not technically feasible. In the analysis of a recent permit for a PC electrical utility boiler the Department stated: "The Department determined that enhanced FGD is not currently an available control strategy and thus is not a suitable candidate for a full-scale mercury BACT control system at this time" (Montana Air Quality Permit #3185-02, Final: 05/16/05; page 29).

iii. Sorbent Injection

While sorbent injection technology has been tested under a variety of conditions, it is still being evaluated as an applicable control technology for mercury emissions. Its applicability has not been demonstrated on a full-scale CFB Boiler. Based on two recently permitted coal-fired electrical generating units in Montana accepting conditions requiring ACI installation for mercury control and the availability of vendor guarantees on ACI, the Department determined that sorbent injection is available. The following citations provide further information regarding this determination. Also, under the current BACT analysis, SME-HGS proposed, and the Department required, mercury control equipment (IECS) that is equivalent to ACI/sorbent injection.

- The DOE Office of Fossil Energy has recently published a circular that describes ACI as the most promising near-term mercury control technology, but it qualifies that observation by stating that "the process applied to coal-fired boilers is still in its early stages and its effectiveness under varied conditions…is still being investigated." It further states, "technology to cost-effectively reduce mercury emissions from coal fired power plants is not yet commercially available" ("Mercury Emissions Control R&D," updated June 21, 2005; available at http://www.fossil.energy.gov/programs/powersystems/pollutioncontrols/overview_mercurycontrols.html).
- As noted above, the EPA technology review document concludes, "It is believed that ACI and enhanced multipollutant controls will be available after 2010 for commercial application on most, if not all, key combinations of coal type and control technology to provide mercury removal levels between 60 and 90%. Also optimized multi-pollutant controls may be available in the 2010-2015 timeframe for commercial application on most, if not all, key combinations of coal type and control technology to provide mercury removal levels between 90 and 95%" ("Control of Mercury Emissions from Coal Fired Electric Utility Boilers: An Update," Air Pollution Prevention and Control Division, National Risk Management Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency; February 18, 2005).

iv. Additional Alternatives

Coal drying, with the co-benefit of mercury removal, has not been proven on a large scale and is not commercially available. It is therefore not technically feasible.

C. Ranking of Available and Technically Feasible Mercury Control Options by Efficiency

The only remaining alternative mercury control technologies are those that provide mercury control co-benefits while reducing emissions of other pollutants. As noted above, the native controls that have been evaluated for mercury control effectiveness are wet and dry (or semi-dry) FGD scrubbers for SO_2 control; ESPs and FFBs for particulate control; and, to a lesser extent, SCR for NO_x control. These systems, individually and in combination, have demonstrated wide variability with respect to mercury reduction efficiency – anywhere from zero to over 90 percent. Effectiveness depends largely on coal quality (especially chlorine content), but also on a host of other design and operational parameters.

SME-HGS is proposing to control NO_x emissions with an SNCR system, SO_2 emissions by CFB technology that employs limestone and hydrated ash reinjection, and particulate emissions with an FFB. The combined air pollution control system is referred to as an integrated emissions control system (IECS). As part of evaluating the performance of CFB in combusting PRB coal, SME-HGS conducted a pilot-scale test burn in February 2005. The test burn was conducted in an ALSTOM Power test facility using 80 tons of Montana PRB coal and 20 tons of Montana limestone (80 tons of coal would be combusted in approximately 30 minutes in the SME-HGS main boiler when firing at full capacity). A summary of the test results is included in Section 3.12 of the application for this air quality permit and a complete copy of the test burn report is in Appendix I of the application for this air quality permit.

The pilot test results indicate a potential for approximately 88% (0.7 lb/TBtu) mercury removal in a CFB combustor with HAR and fabric filter controls. This level of mercury control is much greater than most utility boilers burning subbituminous coal and utilizing native control systems. It is also near the high end of values observed in the many test programs that have been and are being conducted on subbituminous coal combustion in utility boilers. However, the test burn alone does not provide sufficient data to allow boiler manufacturers to confidently extrapolate the data and guarantee mercury emissions control in a full-scale CFB unit with IECS.

The Department has recently become aware of emissions testing at East Kentucky Power Cooperative Gilbert Unit 3 during the summer of 2005. This testing program included measurements of mercury emissions on a CFB Boiler equipped with an HAR, SNCR and FFB. Short-term testing results showed stack mercury emissions of 1.0 lbs/Trillion Btu (TBtu) and 89.5% control of the input mercury from coal. While these test results are very promising, Gilbert Unit 3 burns eastern bituminous coal with a relatively high chlorine content (0.031% during test period) from many different sources in Kentucky and Illinois. For comparison, Spring Creek coal has a chlorine content of <0.01%. Recent research conducted by ADA-ES, with support from DOE/NETL, EPRI and industry partners, confirms that available chlorine is a key factor in oxidizing elemental mercury in the combustion gases and in controlling mercury emissions from PRB coal ("Full-Scale Evaluations of Mercury Control for Units Firing Powder River Basin Coals" Sjostrom, Sharon, *et al.*, ADA-ES, O'Palko, Andrew, USDOE/NETL, Chang, Ramsay, EPRI. DATE not given).

D. Evaluation of Control Technologies Including Environmental, Economic, and Energy Impacts

For a discussion of collateral economic, energy, and environmental impacts associated with the proposed CFB Boiler and associated controls, refer to previous sections of this BACT analysis.

E. Mercury BACT Determination

SME-HGS proposed a mercury emissions floor and to conduct continuous mercury-specific monitoring of the CFB Boiler technology including limestone injection, SNCR, HAR, and FFB control, collectively termed the integrated emission control system (IECS), as mercury BACT for the proposed project. Further, as necessary, SME-HGS proposed the installation and operation of additional mercury emissions control technologies to establish scientifically justifiable and site-specific mercury emissions reductions above and beyond the permitted and BACT determined mercury floor emissions levels. The SME-HGS proposed mercury emissions floor was a maximum mercury emission rate expressed as either:

- 80% mercury reduction, based on a 12-month rolling average, or
- 2.0 lb mercury/TBtu, based on a 12-month rolling average.

Based on Department verified information contained in the SME-HGS application for this air quality permit, including mercury specific source testing results obtained through the simulated and comprehensive combustion, performance, and emission testing program conducted prior to application, and taking into consideration technical, environmental, and economic factors, the Department determined that the proposed mercury emission control strategy and mercury floor emission limit(s) do not constitute BACT in this case. Considering the above-cited information as well as a recent mercury specific BACT determination for a similar source permitted for operation in Montana, the Department determined that the appropriate mercury BACT emissions limit(s) for the proposed project incorporating the IECS is either:

- 90% mercury reduction, based on a 12-month rolling average, or
- 1.5 lb mercury/TBtu, based on a 12-month rolling average.

The two-part limit accounts for two complementary operational factors. First, coal quality is not constant, even within a given coal deposit. At the extremely low values under consideration, a small proportional change in coal mercury content can have a significant impact in compliance potential. Second, control efficiencies generally decrease as inlet concentrations decrease, particularly as inlet concentrations become very low, as in the case of mercury concentrations in utility boiler exhaust. If SME-HGS should receive coal with higher than normal mercury content, it may be difficult to comply with the lb/TBtu limit, but compliance with the percent reduction requirement would be achievable. Conversely, if a particular coal supply contains less mercury than normal, the percent reduction requirement may be less readily attainable while the emission rate may be more so.

To confirm the performance of the CFB Boiler and IECS in reducing mercury emissions, SME-HGS will be required to monitor and analyze mercury control performance data after commencement of commercial operations and to report this information to the Department. The results of the final analysis will then be used to confirm compliance with the BACT-determined mercury emissions limit(s).

If the CFB Boiler operating with the IECS is unable to demonstrate compliance with the mercury limits established through the BACT determination, SME-HGS is required to achieve the BACT-determined mercury reductions/limits through the installation and operation of mercury-specific emission controls. Within 18 months after commencement of commercial operations, SME-HGS shall install and operate an activated carbon injection control system or, at SME-HGS's request and as approved by the Department, an equivalent technology (equivalent in removal efficiency) to comply with the applicable mercury BACT emission limits.

8. Radionuclide Emissions

Most natural materials, including coal, contain trace quantities of radioactive components. When coal is combusted, radionuclides are contained in the combustion gases. Radionuclides from a CFB Boiler are emitted primarily as particulate matter. Pollution control equipment that is used to remove PM as described in the CFB Boiler filterable PM BACT determination will also effectively remove radionuclides. The Department determined that radionuclides can be controlled by more than 95% with traditional PM/PM_{10} control equipment (e.g., FFB or ESP).

A. Identification of Available Radionuclide Control Strategies/Technologies

The two most effective and available control options for radionuclides are an FFB and ESP as described in the CFB Boiler BACT determination for filterable PM emissions. Other less effective control options are also listed in the CFB Boiler BACT determination for filterable PM.

B. Technical Feasibility Analysis

FFB and ESP are technically feasible.

C. Ranking of Available and Technically Feasible NO_x Control Options by Efficiency

FFB and ESP control options have the capability of controlling radionuclides by more than 95%, although FFBs are slightly more effective, particularly for smaller particulate matter.

D. Evaluation of Control Technologies Including Environmental, Economic, and Energy Impacts

Both FFB and ESP would produce a solid waste stream, with a wet ESP creating a wet solid waste stream. No significant environmental, economic, or energy impacts are identified as being associated with the use of an FFB or ESP, although an ESP would require more energy than a FFB. In addition, when an FFB is downstream of a dry FGD unit, additional SO_2 is removed, along with acid gases and H_2SO_4 mist that have formed in the exhaust stream, thereby, providing additional co-benefit pollution control.

E. Radionuclide BACT Determination

SME-HGS proposed the use of an FFB as BACT for radionuclide emissions. Based on Department verified information contained in the SME-HGS application for this air quality permit and taking into consideration technical, environmental, and economic factors, the Department determined that the FFB emission control strategy constitutes BACT for radionuclides in this case.

Because an FFB will achieve slightly better control than an ESP and FFB control is deemed BACT for filterable PM. The Department determined that the filterable PM BACT emission limit will act as a surrogate BACT emission limit for radionuclides. The BACT determination for radionuclides is consistent with previous Department BACT determinations for radionuclides. Further, the Department determined that the periodic source testing (filterable PM) and applicable recordkeeping and reporting requirements contained in the permit will adequately monitor compliance with the permitted BACT requirements.

B. Coal, Limestone, and Ash (Fly and Bed Ash) Material Handling and Storage Operations BACT Analysis and Determination

The following BACT determination was conducted for PM/PM_{10} emissions resulting from both the handling and storage of coal, used as primary CFB Boiler fuel; limestone, used for CFB injection technology and SO_2 control; and ash (fly and bed-ash) produced by coal combustion in the CFB Boiler. The BACT analysis is broken down in to two parts including material handling operations and material storage operations.

1. Material Handling PM/PM_{10} Emissions

Material handling at the SME-HGS facility includes the transfer and conveying of coal, limestone, and ash. PM/PM_{10} emissions will be emitted from the conveying, handling, and transferring of these materials. The application for this permit lists all of the conveyors and material handling transfer points located throughout the SME-HGS facility.

Typically, limestone and coal are moved within a facility using belt conveyors and bucket elevators. Ash is typically moved via pneumatic conveyors. Both methodologies have the potential to create particulate emissions.

As the flow of material passes through the transfer or drop point to a conveyor, particulate emissions are generated. The quantity of particulate emissions generated by a transfer point varies with the volume of material passing through the point, the particle size distribution of the material, the moisture content of the material, and the exposure to prevailing winds at the transfer point. EPA's AP-42, Section 13.2.4 describes a methodology and provides equations to calculate uncontrolled particulate emissions from both batch and continuous process transfers, or drop point transfers, with an emission factor rating of A, giving the equation the highest level of confidence.

A. Identification of Available PM/PM_{10} Control Strategies/Technologies

Methods of controlling particulate emissions from conveyors and transfer points have been developed, which can significantly reduce emissions rates. These methods are based on several principles: reducing the amount or flowrate of material passing through the transfer point, passing larger sized material and minimizing the small particle size content of the material, increasing the moisture content of the material to increase agglomeration of fine material, and shielding or enclosing the transfer point to protect the transfer point from wind. Enclosures often include fan-powered FFB to collect any airborne particulate at a common point for re-use or disposal.

As previously stated, there are a number of available control technologies that can theoretically be employed to control PM/PM_{10} emissions from materials handling sources. The following table summarizes available controls for PM/PM_{10} emissions from conveyors and transfer points.

Technology	Description
Wet Dust Suppression / Wetted Material	A water spray or fogger adds water to the material being handled with or without surfactant. Emissions are prevented through agglomerate formation by combining small dust particles with larger particles or with liquid droplets. Water retained by the material prevents emissions from storage systems and downstream transfers.
Enclosure (including partial enclosure)	Structures or underground placement can be used to shelter conveyors and material transfer points from wind to prevent particulate entrainment. Enclosures can either fully or partially enclose the source.
Enclosure with ESP	Conveyors can be enclosed and have emissions-laden air collected from the enclosure and ducted to an ESP. An ESP uses electrical forces to move entrained particles in the air onto a collection surface. A cake of particulate forms on the collection surface, which is periodically "rapped" by a variety of means to dislocate the particulate, which drops down into a hopper for collection and disposal or reuse.
Enclosure with FFB	Conveyors are often enclosed and emissions-laden air is collected and ducted to the FFB. Pneumatic conveyors are typically sealed with the exception of a FFB or bin vent on the air discharge. In either case, the air-flow passes through tightly woven or felted fabric, causing particulates in the flow to be collected on the fabric by sieving and other mechanisms. As particulate collects on the filter, collection efficiency increases. However, as the dust cake thickness increases so does the pressure drop across the bags. Bags are intermittently cleaned by mechanisms such as shaking the bag, pulsing air through the bag, or temporarily reversing the airflow direction. Material cleaned from the bags is collected in a hopper at the bottom of the FFB.

B. Technical Feasibility Analysis

The technologies listed in the above table are considered technically feasible, with the following exceptions. Since the proposed emergency coal storage pile is not enclosed, having an enclosed transfer point to the pile is considered technically infeasible. As a result, adding FFB or ESP to the enclosure is also considered technically infeasible; therefore, these strategies are removed from further consideration for that transfer point.

Ash handling from temporary storage (e.g., silo) to permanent storage (e.g., monofill) by enclosure with ESP or FFB control is not an industry accepted practice. Fly ash consists primarily of fine particles, which easily become airborne, and bed ash has a significant portion of fine particles. These materials are not suitable for collection with these listed technologies, as the baghouse or ESP will pick up a significant portion of the material stream and quickly become overloaded. Therefore, these strategies are removed from further consideration for ash handling.

C. Ranking of Available and Technically Feasible PM/PM_{10} Control Options by Efficiency

The following table summarizes the available control options, their respective potential control efficiency values, and their ranking for the purposes of this BACT analysis.

Technology	Estimated Control Efficiency	Rank
Enclosure with FFB	99.5%	1
Enclosure with ESP	Up to 99%	2
Enclosure	Varies with Degree of Enclosure 3-Sided Enclosure = 50% Complete Enclosure = 90%	3
Wet Dust Suppression (including water spray with or without surfactant and wet material	50%	4
No Add-On Control	---	5

D. Evaluation of Control Technologies Including Environmental, Economic, and Energy Impacts

The following text provides a brief discussion of the available control options and an analysis of BACT applicability in this case.

i. Enclosure with FFB

For most of the proposed sources, an enclosure with FFB dust collector control has been deemed technically feasible. FFB operations and maintenance are relatively simple. FFB are generally considered an industry standard for material transfer point particulate control and are deemed economically feasible in this case. Because FFB provides the highest level of control, no further evaluations are necessary for sources with proposed with FFB control.

ii. Enclosure with ESP

Because ESPs can theoretically attain up to 99% control efficiency, ESP control was evaluated. The ESP could only be used to control the limestone and ash particulate emissions and not for coal handling because of the high explosion potential of coal dust collection in an ESP. ESPs are not typically used for control of limestone or ash handling emissions due to the high initial costs of installation, complexity, and technical difficulty of operations. Costs associated with the technical obstacles have not been quantified in this analysis. Industry norms indicate, however, that use of ESPs for particulate control from material handling transfer points is unduly complex and cost prohibitive. Therefore, the use of enclosures with an ESP is eliminated from further consideration in this BACT analysis.

iii. Enclosures

Using enclosure structures or underground placement to shelter material from wind entrainment is often an economic means to control PM/PM_{10} emissions. Enclosures can either fully or partially enclose the source and control efficiency is dependent on the level of enclosure. Enclosures are considered for the coal pile reclaim hopper, belt feeder and transfer to Conveyor CC03. All of this equipment is located underground, and covered by the coal pile. The emergency storage pile has no regularly scheduled use. Only a very small fraction of the total coal consumed at the SME-HGS facility is anticipated to go through the storage pile. As such, SME-HGS believes the cost of providing additional control by the installation of an enclosure is difficult to quantify and would result in relatively large cost/ton effectiveness figures. Complete enclosure provides the highest level of control of the remaining alternatives.

iv. Wet Dust Suppression

Wet dust suppression works by causing fine particles to agglomerate through the introduction of moisture into the material stream. The agglomerated particles resist entrainment by wind. Because use of wet dust suppression techniques, including fogging water spray with or without surfactant, can achieve control efficiency of 50% or greater, wet dust suppression was evaluated.

Wet dust suppression is not always a practical control alternative. Occasionally, moisture may interfere with further processing such as screening or grinding where agglomeration is counterproductive. In addition, application of additional moisture in fuel handling operations can increase fuel costs and/or cause upset combustion conditions. In some cases, water may not be readily available and piping water to the site may be cost-prohibitive. Finally, using water sprays when the temperatures are below freezing causes operational difficulties.

When using wet dust suppression, the decision to use or not to use surfactants is often somewhat discretionary and based on availability of a water source. Addition of surfactants to the water lowers its surface tension and improves wetting efficiency. As a result, less water is used and application is required less frequently. Wet dust suppression is particularly applicable to ash handling activities. Ash is often mixed with small quantities of water in a pug mill before disposal.

E. Material Handling PM/PM_{10} Emissions BACT Determination

In summary, SME-HGS proposed the use of the highest level of control that is technically and practically feasible for the affected material handling PM/PM_{10} emission sources.

Proposed BACT for coal, limestone, and ash handling conveyors will be partial or full enclosures. Coal/limestone belt conveyors will be partially enclosed with a cover that extends past the conveyor belt, or is fully contained within a building. The limestone bucket elevator conveyors will be fully enclosed, and the ash handling pneumatic conveyors will be fully enclosed and sealed.

SME-HGS proposes to use enclosures with FFB or bin vent control as BACT for PM/PM_{10} on almost all of the material transfer emission points. Enclosure with a baghouse or bin vent provides the most effective control and is considered the industry norm for control of materials handling transfer points. Based on Department verified information contained in the application for this permit, the following exceptions to the material transfer point BACT determination of FFB or bin vent control apply in this case: Complete enclosure is BACT for PM/PM_{10} on the transfer points at the emergency coal pile to reclaim hoppers, reclaim hopper to belt feeder, and belt feeder to Conveyor CC03 because FFB or ESP control would not be cost-effective due to the relatively low potential to emit of the sources since the transfer points are located beneath (i.e., underground) the emergency coal pile. Further, enclosures for these sources is the most cost effective control given the infrequent operation of the equipment.

Further, the Department determined that wet dust suppression constitutes BACT for PM/PM_{10} emissions from the fly ash and bed ash conveyor and transfer emission points (removal from the silo). The FFB, ESP, and enclosure control options are technically infeasible. Wet dust suppression is proposed for ash handling after the pug mill for removal from the plant collection system. Wet dust suppression and partial enclosure (i.e., lowering well) are also proposed for the transfer of coal to the emergency coal storage pile because the FFB and ESP control options are practically infeasible for a single transfer point that will operate intermittently.

A review of the EPA's RBLC database shows that the proposed BACT presented in the sections above conforms to similar sources recently permitted under the PSD program. The data from the RBLC website is summarized in the application.

The Department determined that the affected material handling and transfer points operating under the proposed control requirements and the established FFB and bin vent emission limit(s) of 0.005 gr/dscf and 0.01 gr/dscf, respectively, constitute BACT in this case. Further, the Department determined that the periodic PM/PM_{10} source testing and the applicable recordkeeping and reporting requirements will adequately monitor compliance with the permitted material transfer BACT requirements.

2. Material Storage PM/PM_{10} Emissions

Materials stored at the SME-HGS facility include coal, limestone, fly ash and bed ash. particulate emissions will be emitted from the storage of these materials. Storage of these materials in large quantities, as required by a coal-fired power plant of this size, has historically been accomplished with piles. More recently, control technologies have been applied to the storage of these materials.

Sections 13.2.4 and 13.2.5 of AP-42 describe the process by which storage piles generate fugitive particulate emissions. The quantity of particulate emissions generated by a storage pile varies with several factors, including wind speed acting upon the surface of the pile, threshold friction velocity of the pile, frequency of disturbance of the pile, and area of disturbance of the pile. Threshold friction velocity takes into account materials makeup of the pile, material size distribution and moisture content of the material in the pile. Emissions are only generated when the wind speed acting upon the pile exceeds the friction threshold velocity.

A storage pile of aggregate material, such as coal, limestone or ash, is typically composed of pieces of material of different sizes, including non-erodible elements of the

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material (greater than 1 cm in diameter) mixed with smaller, erodible material sizes, including silt. The pile surface has a finite availability of the erodible portion of material, which tends to be removed from the pile rapidly during a wind event. This is referred to as erosion potential of the pile. Since undisturbed piles quickly lose their erosion potential during a wind gust, emissions are significantly reduced until the pile is disturbed, when the erosion potential is restored. If a crust is formed on the pile due to erosion, precipitation, water spray or surfactant application, the emission potential is significantly reduced because of the resulting increase of the threshold friction velocity of the pile.

Methods of controlling particulate emissions from the storage of materials have been developed which can significantly reduce fugitive emissions from storage of materials. These methods are similar to the transfer point emissions reduction methods, and are based on several principles:

- Minimizing material transfers to and from the pile (pile disturbances),
- Storing larger sized material and minimizing the small particle size content of the material,
- Increasing the moisture content of the material to increase agglomeration and cementation of fine material to larger particles, and
- Shielding or enclosing the materials to protect from wind erosion

Enclosures may include fan-powered fabric filter baghouses or un-powered bin vent filters to collect airborne particulate.

A. Identification of Available PM/PM_{10} Control Strategies/Technologies

A number of available control technologies can theoretically be employed to control PM/PM_{10} emissions from materials storage. The following table summarizes available controls for PM/PM_{10} emissions.

Technology	**Description**
Inactive Storage Pile with No Additional Control	An inactive storage pile minimizes or eliminates disturbances which reduces the erosion potential of the pile. It also allows a crust to form on the pile over time, which helps resist erosion by increasing the pile's threshold friction velocity.
Inactive Storage Pile with Wind Fence	An inactive pile with a wind barrier or wind fence builds upon the control listed above by reducing the wind speed that acts upon the pile surface. This minimizes the number of times that the wind velocity exceeds the threshold friction velocity, thereby reducing the number of emission events or the duration of emission events.
Inactive Storage Pile with a Permanent Wet Suppression System and Wind Fence	An inactive pile with compaction and wet suppression builds upon the control listed for an inactive storage pile alone. Compaction and wet suppression actively promote the formation of a crust on the pile by increasing the amount of agglomeration or cementing of the surface materials. This significantly increases the threshold friction velocity of the surface and reduces erosion potential. This strategy works especially well with materials that bond together with water application, such as ash. Wind fences may or may not be applied with this option depending on the additional control a wind fence may add to the overall control of this option.

Enclosure	Using structures or underground placement to shelter material from windentrainment. Enclosures can either fully or partially enclose the source.
Enclosure with FFB or Bin Vent	Emissions-laden air is collected from the enclosure and ducted to the FFB or bin vent. The flow passes through tightly woven or felted fabric, causing particulates in the flow to be collected on the fabric by sieving and other mechanisms. As particulate collects on the filter, collection efficiency increases. However, as the dust cake thickness increases so does the pressure drop across the bag.

B. Technical Feasibility Analysis

All of the potentially applicable control technologies listed above are considered technically feasible for the storage of coal, limestone, and ash.

C. Ranking of Available and Technically Feasible PM/PM_{10} Control Options by Efficiency

The following table summarizes the available options, their respective potential effectiveness values, and their ranking for this BACT analysis.

Technology	Estimated Control Efficiency	Rank
Enclosure with FFB or bin vent	99.5%	1
Inactive Storage Pile with Permanent Wet Suppression System and Wind Fence	95%	2
Inactive Storage Pile with Wind Fence	Varies with Degree of Enclosure 3-Sided Enclosure = 50% Complete Enclosure = 90%	3
Enclosure	50%	4
Inactive Storage Pile with Best Management Practices	25-90%	5
Active Storage Pile with No Add-On Control	---	6

D. Evaluation of Control Technologies Including Environmental, Economic, and Energy Impacts

The following text provides a brief discussion of the available control options and an analysis of BACT applicability in this case.

i. Enclosure with FFB or Bin Vent

If a storage system is completely enclosed, a FFB or bin vent can usually be added to the enclosure to more efficiently control particulate emissions. FFBs or bin vents on enclosures are generally considered an industry standard for particulate control on enclosed, active aggregate storage systems. Enclosures (silos) with bin vent control are proposed for short-term coal storage, limestone storage and short-term ash storage. SME-HGS proposes to use enclosure and FFB or bin vent control for all active coal, limestone, and ash storage.

ii. Enclosures

Using enclosure structures to shelter material from wind entrainment is often used to limit control particulate emissions from stored aggregate materials. Enclosures can either fully or partially enclose the source and control efficiency is dependent on the level of enclosure. Enclosures for aggregate materials often come in the form of walls around a pile, storage buildings or silos. Enclosures are generally not sealed and have emissions associated with adding and removing materials. Active storage piles are often enclosed. Inactive storage piles are generally not enclosed.

iii. Inactive Storage Pile with Permanent Wet Suppression System and Wind Fence

Applying wet dust suppression to an inactive pile contributes greatly to crust formation, which maximizes particle agglomeration on the pile surface. The agglomerated particles resist entrainment by wind on the pile surface, and minimize particulate emissions. Wet dust suppression is not without its drawbacks. Occasionally, moisture may interfere with further processing such as screening or grinding where agglomeration is counterproductive. In addition, application of additional moisture in fuel handling operations can increase fuel costs and/or cause upset combustion conditions. Using water sprays when the temperatures are below freezing causes operational difficulties. Piles are usually not watered when the ambient temperature is below freezing.

When using wet dust suppression, the decision to use or not to use surfactants is often somewhat discretionary and based on availability of a water source. Addition of surfactants to the water lowers its surface tension and improves wetting efficiency. As a result, less water is used and application is required less frequently. In the case of the coal pile, application of surfactants may be required to achieve 90% control efficiency.

iv. Inactive Storage Pile with Wind Fence

An inactive storage pile can be protected from prevailing winds with a wind barrier or wind fence. A properly designed wind barrier can effectively reduce wind speeds at the pile surface by 20 – 60%. The wind barrier should be as high as the pile, and at least as wide as the pile to achieve maximum effectiveness. Reducing wind speed acting on the pile surface reduces particle entrainment and thereby reduces particulate emissions from the stored material.

v. Inactive Pile with Best Management Practices

Using an inactive storage pile with best management practices generally includes initial compaction of material by bulldozer or other tracked heavy equipment, minimizing the number of pile disturbances, minimizing the frequency of pile disturbances, minimizing the surface area of the pile, and applying wet dust suppression to disturbed areas of the pile to help re-form a crust as necessary to reduce fugitive emissions.

vi. Active with No Additional Control

SME-HGS believes that it is not modern, standard industry practice to store coal or ash in an active pile without further emissions controls. Recent BACT determinations show that additional control on active or inactive piles is warranted.

SME-HGS proposes to use enclosure and baghouse or bin vent control for all active coal, limestone and ash storage. Since this option has the highest degree of particulate control, no economic analysis of this option has been performed for active storage. Economic impacts associated with the PM/PM_{10} control options for inactive storage piles of coal and ash listed above were compared using estimated annualized capital, operating, and maintenance costs. Cost estimates were supplied by SME-HGS and its engineering contractors. If data was not available from SME-HGS, best engineering judgment was used. Detailed information regarding economic impacts is contained in the application for this air quality permit.

E. Material Storage PM/PM_{10} Emissions BACT Determination

SME-HGS proposes to use a combination of enclosures (silos) with bin vent control for active storage of coal, limestone, and ash, and best management practices for the emergency coal storage and ash storage. Based on Department verified information contained in the SME-HGS application for this air quality permit and taking into consideration technical, environmental, and economic factors, the Department determined that the proposed PM/PM_{10} emission control strategies and applicable emission limits constitute BACT in this case. The following table lists the proposed BACT control requirements and emissions limits, as applicable.

Material Stored	**Method**	**Applicable Limit**
Active Coal Storage	Coal Silo and Coal Bunkers with FFB Control	0.005 gr/dscf
Inactive Coal Storage – Emergency Coal Storage Pile	Inactive Storage Pile with Best Management Practices	NA
Limestone Storage	Limestone Silo and Limestone Bunkers with FFB Control	0.005 gr/dscf
Short-Term Ash Storage	Fly-Ash Silo and Bed-Ash with bin vent Control	0.01 gr/dscf
Long-Term Ash Storage	Inactive Storage Pile with Best Management Practices until Monofill is Capped	NA

Based on Department verified information contained in the application and taking into consideration technical, environmental, and economic factors, the Department determined that enclosure in silos with FFB or bin vent control for active coal, limestone, and short-term ash storage constitutes BACT in this case. Enclosure with FFB or bin vent control provides the highest level of particulate control, with reasonable costs and minimal adverse environmental impacts. Normal material flow consists of loading the coal and limestone bunkers on a daily basis from the enclosed coal and limestone silos, through the tripper conveyor system. The bunkers will be enclosed and controlled by baghouse DC4. The coal silo will be enclosed and controlled by baghouse DC2. The limestone silo will be enclosed and controlled by baghouse DC5. After the fly ash is removed from the FFB associated with the boiler exhaust gas stream, the ash will be temporarily stored in ash silo AS1, which is enclosed and controlled by a bin vent filter, DC6. Bed ash removed from the boiler will be temporarily stored in the bed ash silo AS2, which is enclosed and controlled by bin vent DC7.

Based on Department verified information contained in the application and taking into consideration technical, environmental, and economic factors, the Department determined that an inactive storage pile, with best management practices, including compaction and wet dust suppression as necessary (i.e., water truck application) constitutes BACT for emergency reserve storage of coal and long-term storage of ash prior to capping of the open on-site ash storage cell. SME-HGS will be submitting, separate from the air quality permit application, a solid waste management plan for the long-term storage of the ash in the monofill. Based on the emission inventory prepared for the SME-HGS facility, the inactive emergency coal storage pile is estimated to emit 1.63 tons per year of PM_{10} (based on conservative emission calculations). Recent PSD permitting actions show this storage method constitutes BACT. The Department determined that the addition of a wind fence or permanent wet suppression system to the inactive coal pile yields a minimal additional control of particulate emissions once the coal pile is compacted and becomes encrusted. The cost analysis supplied in the application for this air quality permit shows that the control options with higher particulate control have extremely high costs on a dollar per ton of PM_{10} removed basis. Detailed information regarding the cost analysis is contained in the application for this permit action. The Department determined that these costs are excessive and far above industry norms for PM_{10} control. Therefore, all additional control options above best management practices for inactive coal storage have been eliminated from further consideration under this BACT analysis.

Based on Department verified information contained in the application, the Department determined that an inactive storage pile, with best management practices, including compaction and wet dust suppression as necessary (i.e., water truck application), constitutes BACT for storage of ash prior to capping of the open monofill cell. SME-HGS proposes to mix fly ash and bed ash with small quantities of water in the pug mill after removal from the ash silos. The ash-water mixture is hauled to the ash monofill, where it is pushed into location and compacted. Ash, when mixed with small quantities of water, forms a cement-like material that has very low wind erosion potential. The monofill is composed of cells, formed by excavating earthen material from the cell location and using that material to form a berm around the monofill cell. The monofill has a “built-in” wind barrier, due to the construction of the monofill cells, which are partially below grade and considered “bermed.”

Based on the emission inventory prepared for the SME-HGS facility, the inactive ash storage pile is estimated to emit 1.62 tons per year of PM_{10} (based on conservative emission calculation equations). All of the additional controls identified in the application for this permit yield minimal particulate removal with extremely high cost effective values. Detailed information regarding the cost analysis is contained in the application for this permit action. Therefore, the BACT analysis eliminates these methodologies on an economic basis. Although the RBLC database does not explicitly show any BACT determinations for ash storage or disposal in a monofill, the Department determined that an inactive ash storage pile, with best management practices, including compaction and wet dust suppression as necessary (i.e., water truck application) constitutes BACT in this case.

The proposed BACT technologies conform to similar sources recently permitted under the PSD program that are listed in the RBLC database. The data from the RBLC website is summarized in the application.

The Department determined that the affected material storage emission sources operating under the proposed control requirements and the established FFB and bin vent emission limit(s) of 0.005 gr/dscf and 0.01 gr/dscf, respectively, constitute BACT in this case. Further, the Department determined that the periodic PM/PM_{10} source testing and the applicable recordkeeping and reporting requirements will adequately monitor compliance with the permitted material storage BACT requirements.

C. Cooling Tower PM/PM_{10} Emissions BACT Analysis and Determination

A wet cooling tower will be used at the SME-HGS facility to dissipate waste heat from the generating system. The proposed cooling tower will be a fan-induced draft, counter-flow design. Latent heat of water evaporation is used to provide the cooling effect. The design circulating water rate is 102,800 gallons per minute (gpm). Approximately 2,250 gpm of the cooling water will be evaporated by the cooling tower.

The cooling tower provides direct contact between the cooling water flow and air passing through the tower. Some of the cooling water becomes entrained in the air stream and carried out of the tower as water droplets (in liquid phase). Water lost in the liquid phase is known as “drift.” The drift loss is independent of water lost to evaporation. When the drift droplets evaporate, dissolved solids crystallize and create particulate emissions. The particulate emissions consist of mineral matter and chemicals used for corrosion control in the piping systems. PM/PM_{10} emissions from the cooling tower are estimated in the emissions inventory at 13.5 tons per year.

Factors that affect PM/PM_{10} emission rates from wet cooling towers include: air and water flow patterns, the amount of total dissolved solids (TDS) in the cooling cycle water, circulating water volumes, the number of cooling tower concentration cycles and operation and maintenance practices.

1. Identification of Available PM/PM_{10} Control Strategies/Technologies

The Department is only aware of one control technology for PM_{10} emissions from wet cooling towers: drift eliminators. Drift eliminators work by intercepting as many water droplets as possible from the airflow leaving the cooling tower, thus minimizing PM_{10} emissions. Drift eliminators are designed to cause sudden directional changes to the air flow and the inertia of the water droplets causes them to impact the eliminator surfaces. The drift is then collected and returned to the cooling water flow. The drift eliminators also help minimize the amount of make-up water required for the cooling tower cycle operation. High efficiency drift eliminators of modern design can control the drift to less than 0.005% of the cooling tower circulating water flow.

2. Technical Feasibility Analysis

Drift eliminators are technically feasible and commonly employed for wet cooling tower operations such as that proposed by SME-HGS.

3. Ranking of Available and Technically Feasible PM/PM_{10} Control Options by Efficiency

Add-on PM/PM_{10} control would result in no additional control of PM/PM_{10} emissions resulting from wet cooling tower operations. The only available PM/PM_{10} control strategy/technology identified for the proposed cooling tower is a drift eliminator. Drift eliminators are capable of an approximate 90% reduction in particulate emissions resulting from wet cooling tower operations.

4. Evaluation of Control Technologies Including Environmental, Economic, and Energy Impacts

The cooling tower design proposed by SME-HGS incorporates high efficiency drift eliminators. Because this control technology has the highest PM/PM_{10} control efficiency, no further analysis is required.

5. Cooling Tower PM/PM_{10} Emissions BACT Determination

The top technology (drift eliminators), for cooling tower PM/PM_{10} control will reduce emissions by at least 90%. SME-HGS proposes to install, operate and maintain high efficiency drift eliminators on the cooling tower. The proposed design includes a drift rate of 0.002% circulating flow. The resulting potential PM/PM_{10} emission rate is 3.09 lb/hr, or 13.52 tons per year. This is equivalent to a normalized rate of 0.50 pounds of PM_{10} emitted per million gallons of circulating water (lbs/MMgal).

The BACT determined PM/PM_{10} emission rate of 0.002% of circulating flow is one of the lowest values reported in the RBLC for other recently permitted and similar sources. The data from the RBLC website is summarized in the application.

The Department determined that the installation, operation and maintenance of high efficiency drift eliminators on the cooling tower and a PM/PM_{10} emission limit of 0.002% of circulating flow constitute BACT in this case. Further, the Department determined that the periodic PM/PM_{10} source testing and the applicable recordkeeping and reporting requirements will adequately monitor compliance with the permitted material storage BACT requirements.

D. Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed BACT Analysis and Determination

The following BACT analysis evaluates NO_x, CO, SO_2, PM/PM_{10}, and VOC emissions from the intermittent and limited use of the Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed Heater for support and emergency operations at the SME-HGS facility.

The Auxiliary Boiler will run on #2 diesel fuel-oil, natural gas, or propane and will only be operated during startup, shutdown, commissioning of the CFB Boiler and during extended downtimes of the CFB Boiler during the winter months to aid in the prevention of freezing of the CFB Boiler components. The Emergency Generator and Emergency Fire Pump will run only on #2 diesel fuel oil and operate only during emergencies and during required equipment maintenance. The Coal Thawing Shed Heater will operate only on propane or natural gas during times when the coal is frozen in the coal train cars.

1. Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed NO_x Emissions

   NO_x will be formed during the combustion of natural gas, propane, or diesel fuel in the Auxiliary Boiler, Emergency Generator, Emergency Firewater Pump, and Coal Thawing Shed Heater. Three fundamentally different mechanisms produce NO_x during the combustion of hydrocarbon fuels. The formation of NO_x is dominated by the thermal mechanism, which involves the thermal dissociation and subsequent reaction of nitrogen (N_2) and oxygen (O_2) molecules in the combustion air. Most of the "thermal NO_x" is formed in the high temperature flame zone near the burners or in the combustion chambers. The amount of thermal NO_x formed is directly proportional to oxygen concentration, peak temperature, and time of exposure to peak temperature. Virtually all thermal NO_x is formed in the region of the flame at the highest temperature. Maximum thermal NO_x production occurs at a slightly lean fuel-to-air ratio due to the excess availability of oxygen for reaction with the nitrogen in the air and fuel.

   A second mechanism for the formation of NO_x, termed "prompt NO_x," occurs through early reactions of nitrogen molecules in the combustion air and hydrocarbon radicals present in the fuel. The prompt NO_x reactions occur within the flame and are usually negligible when compared to the amount of thermal NO_x. However, prompt NO_x levels may become significant when technologies are applied that control thermal NO_x to ultra-low levels.

   A third mechanism, "fuel NO_x," stems from the evolution and reaction of fuel-bound nitrogen compounds with oxygen. The contribution of this mechanism to the total NO_x depends entirely on the nitrogen content in the fuel. For natural gas, propane, and fuel oil, the contribution of fuel NO_x is usually negligible.

   A. Identification of Available NO_x Control Strategies/Technologies

      NO_x emissions from the Auxiliary Boiler, Emergency Generator, Emergency Firewater Pump, and Coal Thawing Shed Heater can be reduced by several different methods. The following list presents methods listed in the RACT/BACT/LAER database and other technologies that are applicable to natural gas combustion processes:

      i. Selective Catalytic Reduction (SCR);
      ii. Selective Non-Catalytic Reduction (SNCR);
      iii. Low Temperature Oxidation (LoTOx);
      iv. Dry Low NOX (Staged Combustion);
      v. Non-Selective Catalytic Reduction (NSCR);
      vi. Wet Controls;
      vii. Innovative Catalytic Systems (SCONOX and XONON);
      viii. Process Limitations; and
      ix. Proper Design (no additional control).

      These control technologies may be applied individually or in combination. A brief discussion of each type of control technology that was not presented in the Main Boiler NOx BACT is presented below.

i. SCR

A detailed discussion of SCR NO_x control technology is included in the CFB Boiler NO_x BACT analysis.

ii. SNCR

A detailed discussion of SNCR NO_x control technology is included in the CFB Boiler NO_x BACT analysis.

iii. Low Temperature Oxidation ($LoTO_x$)

Oxygen and nitrogen are injected at ~380°F to transform NO and NO_2 into N_2O_5 using an ozone generator and a reactor duct. N_2O_5, which is soluble, dissociates into N_2 and H_2O in a wet scrubber. Requirements of this system include a wet scrubber, oxygen, and a cooling water supply. Scrubber effluent treatment must also be provided. The estimated control efficiency of the system is 80-90%.

iv. Dry Low NO_x

Dry technologies may be identified as dry low NO_x (DLN) burners, dry low emissions (DLE), or $SoLoNO_x$. These technologies incorporate multiple stage combustors that may include premixing, fuel-rich zones that reduce the amount of O_2 available for NO_x production, fuel-lean zones that control NO_x production through lower combustion temperatures, or some combination of these. A quench zone may also be present to control gas temperature. Almost all new process heaters/boilers presently being manufactured incorporate these technologies into their combustor designs to some extent. These systems typically result in 40-60% reduction in NO_x.

v. Non-Selective Catalytic Reduction

An NSCR unit controls NO_x emissions by using available CO and residual hydrocarbons in the exhaust of a rich-burn internal combustion engine as an NO_x reducing agent. Without the catalyst, in the presence of oxygen, the hydrocarbons will be oxidized instead of reacting with the NO_x. As the excess hydrocarbon and NO_x pass over a honeycomb or monolithic catalyst (usually a combination of noble metals such as platinum, palladium, and/or rhodium), the reactants are reduced to N_2, H_2O, and CO_2.

The noble metal catalyst usually operates between 800°F and 1,200°F; therefore, the unit would normally be mounted near the engine exhaust to maintain a high enough temperature to allow the various reactions to occur. In order to achieve maximum performance, 80% to 90% reduction of NO_x concentration, the engine must burn a rich fuel mixture, causing the engine to operate less efficiently. The NSCR can only be applied to rich-burn engines and not to the Auxiliary Boiler.

vi. Wet Controls

Water or steam injection technology has been well demonstrated to suppress NO_x emissions from gas turbines, but it is not commonly used to control NO_x on process heaters or boilers. The injected fluid increases the thermal mass by dilution and thereby reduces peak temperatures in the flame zone. NO_x reduction efficiency increases as the water-to-fuel ratio increases. For maximum efficiency, the water must be atomized and injected with homogeneous mixing throughout the combustor. This technique reduces thermal NO_X, but may actually increase the production of fuel NO_x. Depending on the initial NO_x levels, wet injection may reduce NO_x by 60% or more.

vii. Innovative Catalytic Systems

Innovative catalytic technologies integrate catalytic oxidation and absorption technology. In the $SCONO_x$ process, CO and NO are catalytically oxidized to CO_2 and NO_x; the NO_2 molecules are subsequently absorbed on the treated surface of the $SCONO_x$ catalyst. Ammonia is not required. The limited emissions data for this process reflects that there is an associated increase in HAP emissions when applying this technology. $SCONO_x$ technology has recently been applied to combined cycle turbine generation facilities, since steam produced by a heat recovery steam generator (HRSG) is required in the process.

The XONON system is applicable to diffusion and lean-premix combustors. It utilizes a flameless combustion system where fuel and air react on a catalyst surface, preventing the formation of NO_X while achieving low CO and unburned hydrocarbon emission levels. The overall combustion system consists of the partial combustion of the fuel in the catalyst module followed by completion of combustion downstream of the catalyst. Initial partial combustion produces no NO_x and downstream combustion occurs in a flameless homogeneous reaction that produces almost no NO_x. The system is totally contained within the combustor and is not an add-on control device. This technology has not been fully demonstrated.

viii. Process Limitations

The amount of NO_x and other pollutants formed by fossil fuel combustion can be reduced proportionately by limiting operating hours or reducing fuel consumption.

B. Technical Feasibility Analysis

Innovative catalytic systems typically installed on combustion turbines are technically infeasible to install on the Auxiliary Boiler, Emergency Generator, Emergency Firewater Pump, and Coal Thawing Shed Heater.

LoTOx and wet controls are technically impractical on the Auxiliary Boiler, Emergency Generator, Emergency Firewater Pump, and Coal Thawing Shed Heater as these types of control options have never been installed on emergency use equipment and equipment in intermittent use. SCR and SNCR are classified as technically infeasible on small emergency use equipment. These controls are brought forward for the Auxiliary Boiler and Coal Thawing Shed Heater since these units are planned to operate more frequently and potentially for longer durations than the emergency equipment.

DLN technology is technically infeasible on spark or compression ignition reciprocating internal combustion engines. Therefore, DLN is eliminated from use on the Emergency Generator and Emergency Firewater Pump.

NSCR technology is technically infeasible on the Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed Heater because an NSCR technology requires a lean oxygen exhaust stream (<1% O2). These four units will operate with a rich oxygen exhaust stream.

C. Ranking of Available and Technically Feasible NO_x Control Options by Efficiency

The following table ranks the available and technically feasible control options according to control effectiveness and includes the no additional add-on control and process limitations control strategies.

NO_x Control Option	**Auxiliary Boiler and Coal Thawing Shed Heater Control Efficiency**	**Emergency Generator and Emergency Fire Water Pump Control Efficiency**
SCR	80-90%	Technically Infeasible
NSCR	Technically Infeasible	Technically Infeasible
DLN (Auxiliary Boiler only)	40-60%	Technically Infeasible (Except Coal Thawing Shed Heater)
SNCR	40-60%	Technically Infeasible
Process Limitations	Varies with Limitation	Varies with Limitation
Proper Design (no additional Control	N/A	N/A

D. Evaluation of Control Technologies Including Environmental, Economic, and Energy Impacts

No environmental or energy impacts exist for the NO_x control options for the Auxiliary Boiler or Coal Thawing Shed Heater that would eliminate the control option. The application provides a detailed economic evaluation for the Auxiliary Boiler. No economic cost analysis is provided for the Coal Thawing Shed Heater because the only add-on control option is a DLN burner, which will be employed on the heater.

The control efficiency used for the SCR was 90%, SNCR was 50%, and DLN was 50%. The DLN equipment cost for the Auxiliary Boiler was provided by Nebraska Boilers, and the DLN equipment cost for the Coal Thawing Shed Heater was based on a ratio of the Auxiliary Boiler DLN cost and the heat input values for the Auxiliary Boiler and Coal Thawing Shed Heater. The SCR and SNCR equipment costs were derived from equations in OAQPS Section 4 – NO_x Controls (10/2000). Capital costs were annualized at 10% for 10 years as recommended by OAQPS. As reported in the application, the Auxiliary Boiler cost effective value for SCR is approximately $36,925/ton of NO_x removed; for SNCR the cost effective value is approximately $18,514/ton NO_x removed; and for DLN the cost effective value is

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approximately \$1341/ton NO_x removed. The Coal Thawing Shed Heater cost effective value for SCR is approximately \$158,172/ton of NO_x removed; for SNCR the cost effective value is approximately \$179,635/ton NO_x removed; and for DLN the cost effective value is approximately \$16,678/ton NO_x removed. Based on the cost-effective values provided above, the Department determined that DLN constitutes a cost-effective control option for the Auxiliary Boiler in this case. Further, based on the cost-effective values provided above, all control options are deemed economically infeasible for the Coal Thawing Shed Heater in this case. A detailed cost analysis is included in the application for this air quality permit.

E. Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed NO_x Emissions BACT Determination

Based on the annual cost-effectiveness of DLN, the Department determined that NO_x BACT control for the Auxiliary Boiler is DLN burners with process limits in this case. Further, based on Department verified information contained in the application for this air quality permit and the NO_x BACT analysis summarized previously, the Department determined that NO_x BACT for the Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed Heater is proper design and combustion practices and process limitations. The unit specific process limitations are included in the following table.

Combustion Unit	Process Limitation	Annual Hours of Operation
Auxiliary Boiler	Start-Up, Shutdown and Commissioning Operation Only	850
Emergency Generator	Emergency Use and Required Equipment Maintenance Operation Only	500
Emergency Fire Water Pump	Emergency Use and Required Equipment Maintenance Operation Only	500
Coal Thawing Shed Heater	Necessary Coal Thawing Operation Only	240

SME-HGS did not propose any NO_x emission limits (BACT or otherwise) on the Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed Heater because these units will only operate during limited situations. The Department determined that the enforceable process limits and fuel specifications constitute BACT for the affected units. Further, the Department determined that the Emergency Fire Water Pump and Coal Thawing Shed Heater operations do not warrant emission limitations due to limited potential NO_x impact associated with enforceable limitations. However, in order to protect the ambient air quality impact analysis conducted for this air quality permit, the Department determined that non-BACT NO_x emission limit(s) of 46.79 lb/hr (1-hr averaging time) for the Auxiliary Boiler and 41.20 lb/hr (1-hr averaging time) for the Emergency Generator are necessary.

2. Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed CO Emissions

A. Identification of Available CO Control Strategies/Technologies

Control of CO and VOC can be achieved through oxidation of post-combustion gases with or without a catalyst. The following is a list of available CO control technologies:

i. Oxidation Catalyst;
ii. Thermal Oxidation;
iii. NSCR;
iv. Process Limitations; and
v. Proper Design (no additional control).

The oxidation catalyst and thermal oxidation control options are described in detail in the CFB Boiler BACT analysis. NSCR has been described in the NO_x BACT analysis in the previous section. NSCR has the ability to control NO_x and CO from rich-burn internal combustion engines.

B. Technical Feasibility Analysis

NSCR technology is technically infeasible on the Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed Heater because an NSCR technology requires a lean oxygen exhaust stream (<1% O2). These four affected units will operate with a rich oxygen exhaust stream. The other available CO control options are technically feasible.

C. Ranking of Available and Technically Feasible CO Control Options by Efficiency

The following table ranks the control options according to control effectiveness.

CO Control Options for Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed Heater	**Percent Reduction**
Catalytic Oxidation	80-90%
Thermal Oxidation	80-90%
Process Limitation	Varies with Limitation
Proper Design and Operation (no add-on control)	N/A

D. Evaluation of Control Technologies Including Environmental, Economic, and Energy Impacts

No environmental or energy impacts exist for the CO control options for the Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed Heater that would eliminate the control option. The application for this air quality permit provides an economic evaluation for the four affected emitting units. The control efficiency for thermal and catalytic incineration is 90% and equipment costs were derived from the equation in OAQPS Chapter 2 – Incinerators (9/2000). Capital costs were annualized at 10% for 10 years as recommended by OAQPS. As reported in the application, the Auxiliary Boiler cost effective value for thermal oxidation is approximately $78,794/ton of CO removed and the catalytic oxidation cost effective value is approximately $64,829/ton CO removed. The Emergency Generator cost effective value for thermal oxidation is approximately $157,653/ton of CO removed and the catalytic oxidation cost effective value is approximately $280,198/ton CO removed. The Emergency Fire Water Pump cost effective value for thermal oxidation is approximately $354,202/ton of CO removed and the catalytic oxidation cost effective value is approximately $585,551/ton CO removed. The Coal Thawing Shed Heater cost effective value for thermal oxidation is approximately $163,320/ton of CO removed and the catalytic oxidation cost effective value is approximately $253,926/ton CO removed. Based on the cost-effective values provided above, all control options are deemed economically infeasible for the affected units in this case. A detailed cost analysis is included in the application for this air quality permit.

E. Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed CO Emissions BACT Determination

Based on Department verified information contained in the application for this air quality permit and the CO BACT analysis summarized previously, the Department determined that CO BACT for the Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed is proper design and combustion practices and the process limitations included in the following table.

Combustion Unit	**Process Limitation**	**Annual Hours of Operation**
Auxiliary Boiler	Start-Up, Shutdown and Commissioning Operation Only	850
Emergency Generator	Emergency Use and Required Equipment Maintenance Operation Only	500
Emergency Fire Water Pump	Emergency Use and Required Equipment Maintenance Operation Only	500
Coal Thawing Shed Heater	Necessary Coal Thawing Operation Only	240

SME-HGS did not propose any CO emission limits (BACT or otherwise) on the Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed Heater because these units will only operate during limited situations. The Department determined that the enforceable process limits and fuel specifications constitute BACT for the affected units. Further, the Department determined that the Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed Heater operations do not warrant emission limitations due to limited potential CO impact associated with enforceable limitations. However, in order to protect the ambient air quality impact analysis submitted with the application for this air quality permit, the Department determined that a non-BACT CO emission limit of 18.6 lb/hr (1-hr averaging time) for the Auxiliary Boiler is necessary.

3. Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed SO_2 Emissions

A. Identification of Available SO_2 Control Strategies/Technologies

The following is a list of available SO_2 control technologies.

i. Wet or dry FGD;
ii. Low sulfur fuels;
iii. Process limitations; and
iv. No additional control.

Wet and dry flue gas desulfurization control options are described in the SO_2 CFB Boiler BACT. Using low sulfur fuels such as propane, pipeline quality natural gas, and low sulfur diesel is an effective SO_2 emissions control strategy.

B. Technical Feasibility Analysis

Wet and dry FGD on the Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed Heater are considered technically infeasible because these emitting units will be intermittently operating on gaseous or liquid fuel with low sulfur concentrations. Wet and dry FGD are typically employed on solid fuel or gaseous and liquid fuel that have high sulfur contents and high potential SO_2 emissions. Natural gas, propane, and #2 diesel fuel oil are required by regulation to have relatively low sulfur concentrations. Therefore, the Department determined that wet and dry FGD control options are considered technically infeasible for the control of SO_2 from the affected units in this case.

C. Ranking of Available and Technically Feasible SO_2 Control Options by Efficiency

The following table ranks the available and feasible SO_2 control options according to control effectiveness.

SO_2 Control Options	**Percent Reduction**
Low Sulfur Fuels	Varies
Process Limitations	Varies with Limitation
No Additional Controls	N/A

D. Evaluation of Control Technologies Including Environmental, Economic, and Energy Impacts

No economic, environmental, or energy impacts exist for the available and feasible SO_2 control options that would eliminate the control options from further evaluation. An economic analysis is not provided for the remaining control options listed because SME-HGS proposed the use of low sulfur fuels and process limitations.

E. Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed SO_2 Emissions BACT Determination

Based on Department verified information contained in the application for this air quality permit and the SO_2 BACT analysis summarized previously, the Department determined that SO_2 BACT for the Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed is the combustion of low sulfur fuels only and the process limitations included in the following table.

Combustion Unit	Process Limitation	Annual Hours of Operation
Auxiliary Boiler	Start-Up, Shutdown and Commissioning Operation Only	850
Emergency Generator	Emergency Use and Required Equipment Maintenance Operation Only	500
Emergency Fire Water Pump	Emergency Use and Required Equipment Maintenance Operation Only	500
Coal Thawing Shed Heater	Necessary Coal Thawing Operation Only	240

SME-HGS did not propose any SO_2 emission limits (BACT or otherwise) on the Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed Heater because these units will only operate during limited situations. The Department determined that the enforceable process limits and fuel specifications constitute BACT for the affected units. Further, the Department determined that the Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed Heater operations do not warrant emission limitations due to limited potential SO_2 impact associated with enforceable limitations. However, in order to protect the ambient air quality impact analysis submitted with the application for this air quality permit, the Department determined that an effects-based non-BACT SO_2 emission limit of 12.63 lb/hr (3-hr averaging time) for the Auxiliary Boiler is necessary.

4. Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed PM/PM_{10} Emissions

A. Identification of Available PM/PM_{10} Control Strategies/Technologies

The following is a list of available PM/PM10 control technologies.

i. Fabric Filter Baghouse;
ii. Electrostatic Precipitator;
iii. Low Ash Fuels;
iv. Process Limitations; and
v. No Additional Control.

Fabric filter baghouses and ESPs are described in the PM/PM_{10} Main Boiler BACT.

B. Technical Feasibility Analysis

Fabric filter baghouses are technically infeasible control options for the emergency generator and emergency fire water pump because the exhaust temperature is too hot for fabric filter bags. The remaining available control options are assumed to be technically feasible for the Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed Heater. All of the available control options are technically feasible for the Auxiliary Boiler.

C. Ranking of Available and Technically Feasible PM/PM_{10} Control Options by Efficiency

The following table ranks the available and feasible PM/PM_{10} control options according to control effectiveness.

PM/PM_{10} Control Technology	**Percent Reduction**
FFB (Auxiliary Boiler and Coal Thawing Shed)	99%+
ESP (Auxiliary Boiler and Coal Thawing Shed)	99%+
Low Ash Fuels	Varies with Limitation
Process Limitations	Varies with Limitation
No Additional Controls	N/A

D. Evaluation of Control Technologies Including Environmental, Economic, and Energy Impacts

No environmental, or energy impacts exist for the PM/PM_{10} control options that would eliminate the control options for any of the affected emitting units. An economic impact analysis is provided for FFB and ESP control options for the Auxiliary Boiler and Coal Thawing Shed Heater based on cost data provided in the EPA fact sheets for FFB and ESP control. As reported in the application, the Auxiliary Boiler cost-effective value for FFB is approximately $153,981/ton PM/PM_{10} removed and the cost-effective value for ESP is approximately $230,971/ton PM/PM_{10} removed. The Coal Thawing Shed Heater cost-effective value for FFB is approximately $922,141/ton PM/PM_{10} removed and the cost-effective value for ESP is approximately $1,383,212/ton PM/PM_{10} removed. Based on the cost-effective values provided above, all control options are deemed economically infeasible for the affected units in this case. A detailed cost analysis is included in the application for this air quality permit.

E. Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed PM/PM_{10} Emissions BACT Determination

Based on Department verified information contained in the application for this air quality permit and the PM/PM_{10} BACT analysis summarized previously, the Department determined that PM/PM_{10} BACT for the Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed is process limitations, as indicated in the following table.

Combustion Unit	**Process Limitation**	**Annual Hours of Operation**
Auxiliary Boiler	Start-Up, Shutdown and Commissioning Operation Only	850
Emergency Generator	Emergency Use and Required Equipment Maintenance Operation Only	500
Emergency Fire Water Pump	Emergency Use and Required Equipment Maintenance Operation Only	500
Coal Thawing Shed Heater	Necessary Coal Thawing Operation Only	240

SME-HGS did not propose any PM/PM_{10} emission limits (BACT or otherwise) on the Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed Heater because these units will only operate during limited situations. The Department determined that the enforceable process limits and fuel specifications constitute BACT for the affected units. Further, the Department determined that the Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed Heater operations do not warrant emission limitations due to limited potential PM/PM_{10} impact associated with enforceable limitations. However, in order to protect the ambient air quality impact analysis submitted with the application for this air quality permit, the Department determined that a non-BACT PM/PM_{10} emission limit of 3.22 lb/hr (24-hr averaging time) for the Auxiliary Boiler is necessary.

5. Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed VOC Emissions

A. Identification of Available VOC Control Strategies/Technologies

Control of VOC and CO can be achieved through oxidation of post-combustion gases with or without a catalyst. The following is a list of available VOC control technologies.

i. Oxidation Catalyst;
ii. Thermal Oxidation;
iii. Process Limitations; and
iv. Proper Design (no additional control).

The oxidation catalyst and thermal oxidation VOC control options are described in detail in the CFB Boiler BACT analysis.

B. Technical Feasibility Analysis

Thermal and catalytic oxidation as well as process limits are considered technically feasible for all of the affected units.

C. Ranking of Available and Technically Feasible VOC Control Options by Efficiency

The following table ranks the control options according to control effectiveness.

VOC Control Options for Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed Heater	**Percent Reduction**
Catalytic Oxidation	80-90%
Thermal Oxidation	80-90%
Process Limitation	Varies with Limitation
Proper Design and Operation (no add-on control)	N/A

D. Evaluation of Control Technologies Including Environmental, Economic, and Energy Impacts

No environmental or energy impacts exist for the VOC control options for the Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed Heater that would eliminate the control option. The application for this air quality permit provides an economic evaluation for the four affected emitting units. As reported in the application, the Auxiliary Boiler cost effective value for thermal oxidation is approximately \$1,198,837/ton of VOC removed and the catalytic oxidation cost effective value is approximately $983,985/ton VOC removed. The Emergency Generator cost effective value for thermal oxidation is approximately $1,206,310/ton of VOC removed and the catalytic oxidation cost effective value is approximately $980,693/ton VOC removed. The Emergency Fire Water Pump cost effective value for thermal oxidation is approximately $3,317,579/ton of VOC removed and the catalytic oxidation cost effective value is approximately $4,098,854/ton VOC removed. The Coal Thawing Shed Heater cost effective value for thermal oxidation is approximately $2,462,650/ton of VOC removed and the catalytic oxidation cost effective value is approximately $3,724,499/ton VOC removed. Based on the cost-effective values provided above, all control options are deemed economically infeasible for the affected units in this case. A detailed cost analysis is included in the application for this air quality permit.

E. Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed VOC Emissions BACT Determination

Based on Department verified information contained in the application for this air quality permit and the VOC BACT analysis summarized previously, the Department determined that VOC BACT for the Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed is proper design with process limitations, included in the following table.

Combustion Unit	**Process Limitation**	**Annual Hours of Operation**
Auxiliary Boiler	Start-Up, Shutdown and Commissioning Operation Only	850
Emergency Generator	Emergency Use and Required Equipment Maintenance Operation Only	500
Emergency Fire Water Pump	Emergency Use and Required Equipment Maintenance Operation Only	500
Coal Thawing Shed Heater	Necessary Coal Thawing Operation Only	240

SME-HGS did not propose any VOC emission limits (BACT or otherwise) on the Auxiliary Boiler, Emergency Generator, Emergency Fire Water Pump, and Coal Thawing Shed Heater because these units will only operate during limited situations. The Department determined that the enforceable process limits and fuel specifications constitute BACT for the affected units. Further, the Department determined that the affected unit operations do not warrant emission limitations due to limited potential VOC impact associated with enforceable limitations.

E. Vehicle Traffic/Haul Roads PM/PM_{10} Emissions BACT Analysis and Determination

Fugitive PM/PM_{10} emissions will be generated at the SME-HGS facility by vehicle travel in and around the plant site. The Department determined that SME-HGS must use reasonable precautions to limit the fugitive emissions of airborne particulate matter on haul roads, access roads, parking areas, and the general plant property. SME-HGS proposed to pave the roads and parking areas around the main complex of buildings at the site to allow for unimpeded traffic flow during wet and muddy conditions. The roads further from the site complex (e.g., the haul road to the ash monofill) will be unpaved.

As previously discussed, SME-HGS proposed to use a combination of paved and unpaved roads at the site. The Department determined that best management practices including the application of water and/or chemical dust suppressants, as necessary, to the unpaved roads and the sweeping of paved roads, as necessary, constitutes BACT in this case. This is common industry practice and is typically considered BACT for fugitive road dust resulting from vehicle traffic at industrial sites.

F. CFB Boiler Refractory Brick Curing Heaters (2771 MMBtu/hr)

Section II.M.1-4 of the supplemental preliminary determination incorporates enforceable operational limits and a maximum heat input capacity limit for the proposed propane-fired CFB Boiler refractory curing heater(s). Because these enforceable operational limits restrict the allowable operating time, type of fuel, and heat input capacity of the affected units, potential emissions of all regulated pollutants from CFB Boiler refractory brick curing heater(s) operations are limited. Given the limited potential to emit of the CFB Boiler refractory curing heater(s), the Department determined that add-on control equipment would be cost prohibitive. Therefore, the Department determined that normal operation within the permit limits contained in Section II.M of the supplemental preliminary determination constitutes BACT for the affected unit(s), in this case.

The control options selected have controls and control costs comparable to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

IV. Emission Inventory

ton/year											
Emission Source	**PM**	**PM_{10}**	**NO_x**	**SO_x**	**CO**	**VOC**	**Pb**	**Hg**	**HCl**	**HF**	**H_2SO_4**
CFB Boiler (2626 MMBtu/hr)	138.0*	299.1	805.2	437.1	1150.2	34.5	0.28	0.017	24.15	19.55	62.11
Aux. Boiler (225 MMBtu/hr)	1.4	1.4	19.9	5.4	7.9	0.5	---	---	---	---	---
Emergency Generator	0.13	0.13	10.3	0.3	0.7	0.2	---	---	---	---	---
Emergency Fire Water Pump	0.04	0.04	0.9	0.03	0.2	0.03	---	---	---	---	---
Coal Thawing Shed	0.03	0.03	1.0	0.00	0.17	0.03	---	---	---	---	---
Car Unloading Baghouse (DC1)	24.4	24.4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coal Silo Baghouse (DC2)	3.6	3.6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coal Crusher Baghouse (DC3)	2.8	2.8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tripper System Baghouse (DC4)	3.8	3.8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Limestone Baghouse (DC5)	5.0	5.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fly-Ash Silo Bin Vent (DC6)	1.5	1.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bed-Ash Silo Bin Vent (DC7)	1.4	1.4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coal Pile Dressing	1.7	0.3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emergency Coal Pile Transfers	3.4	1.6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emergency Coal Pile Storage	3.3	1.6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ash Landfill (Truck Dump)	3.2	1.6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooling Tower	13.53	13.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Truck Traffic	4.8	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Heaters	0.28	0.28	9.72	0.01	1.32	0.35	---	---	---	---	---
Fuel Oil Storage Tank	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00
Refractory Brick Curing Heaters (2771 MMBtu/hr)	3.05	3.05	96.65	0.09	16.28	2.36	---	---	---	---	---
Total Emissions	**215**	**366**	**944**	**443**	**1177**	**38**	**0.28**	**0.02**	**24.15**	**19.55**	**62.11**
* CFB Boiler PM emissions represent only front-half filterable PM emissions. Total PM emissions including PM_{10} and condensable PM emissions are estimated under the column for CFB Boiler PM_{10} emissions.											
A complete emission inventory for Permit #3423-00 is on file with the Department											

CFB Boiler Emissions

Heat Input:	2626.1 MMBtu/hr (Average Annual Heat Input – SME-HGS Information)
Hours of Operation:	8760 hr/yr (Annual Potential)

Filterable PM Emissions

Emission Factor:	0.012 lb/MMBtu (BACT Limit Permit #3423-00)	
Calculations:	2626.1 MMBtu/hr * 0.012 lb/MMBtu =	31.51 lb/hr
	31.51 lb/hr * 8760 hr/yr * 0.0005 ton/lb =	138.03 ton/yr

PM_{10} Emissions (filterable and condensable)

Emission Factor:	0.026 lb/MMBtu (BACT Limit Permit #3423-00)	
Calculations:	2626.1 MMBtu/hr * 0.026 lb/MMBtu =	68.28 lb/hr
	68.28 lb/hr * 8760 hr/yr * 0.0005 ton/lb =	299.06 ton/yr

NO_x Emissions

Emission Factor:	0.07 lb/MMBtu (Annual BACT Limit Permit #3423-00)	
Calculations:	2626.1 MMBtu/hr * 0.07 lb/MMBtu =	183.83 lb/hr
	183.83 lb/hr * 8760 hr/yr * 0.0005 ton/lb =	805.16 ton/yr

SO_x Emissions

Emission Factor:	0.038 lb/MMBtu (Annual BACT Limit Permit #3423-00)	
Calculations:	2626.1 MMBtu/hr * 0.038 lb/MMBtu =	99.79 lb/hr
	99.79 lb/hr * 8760 hr/yr * 0.0005 ton/lb =	437.09 ton/yr

CO Emissions

Emission Factor:	0.10 lb/MMBtu (Annual BACT Limit Permit #3423-00)	
Calculations:	2626.1 MMBtu/hr * 0.10 lb/MMBtu =	262.61 lb/hr
	262.61 lb/hr * 8760 hr/yr * 0.0005 ton/lb =	1150.23 ton/yr

VOC Emissions

Emission Factor:	0.003 lb/MMBtu (Annual BACT Limit Permit #3423-00)	
Calculations:	2626.1 MMBtu/hr * 0.003 lb/MMBtu =	7.88 lb/hr
	7.88 lb/hr * 8760 hr/yr * 0.0005 ton/lb =	34.51 ton/yr

Hg Emissions

Emission Factor:	1.50E-06 lb/MMBtu (Annual BACT Limit Permit #3423-00)	
Calculations:	2626.1 MMBtu/hr * 1.50E-06 lb/MMBtu =	0.0039 lb/hr
	0.0039 lb/hr * 8760 hr/yr * 0.0005 ton/lb =	0.017 ton/yr

HCl Emissions

Emission Factor:	0.0021 lb/MMBtu (Annual BACT Limit Permit #3423-00)	
Calculations:	2626.1 MMBtu/hr * 0.0021 lb/MMBtu =	5.51 lb/hr
	5.51 lb/hr * 8760 hr/yr * 0.0005 ton/lb =	24.15 ton/yr

HF Emissions

Emission Factor: 0.0017 lb/MMBtu (Annual BACT Limit Permit #3423-00)
Calculations: 2626.1 MMBtu/hr * 0.0017 lb/MMBtu = 4.46 lb/hr
4.46 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 19.55 ton/yr

H_2SO_4 Emissions

Emission Factor: 0.0054 lb/MMBtu (Annual BACT Limit Permit #3423-00)
Calculations: 2626.1 MMBtu/hr * 0.0054 lb/MMBtu = 14.18 lb/hr
14.18 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 62.11 ton/yr

V. Existing Air Quality

The air quality classification for the SME-HGS project area is "Unclassifiable or Better than National Standards" (40 CFR 81.327) for the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants. However, the facility will locate in an area that has recently been re-designated attainment for CO under a limited maintenance plan. The SME-HGS facility has not been identified in any studies as impacting the previous CO nonattainment area.

Under the requirements of the PSD program, SME-HGS was required to conduct modeling to determine pollutant-specific pre-monitoring applicability. Because air modeling showed that the concentration of PM_{10} exceeded the level identified in ARM 17.8.818(7), SME-HGS was required to conduct on-site pre-monitoring for this pollutant. SME-HGS collected PM_{10} pre-monitoring data at the proposed site from November 12, 2004, through November 11, 2005. The following table lists the background monitoring data from the SME-HGS PM_{10} monitoring site. The measured PM_{10} values establish the baseline concentrations and demonstrate compliance with all applicable ambient air quality standards.

PM_{10} Pre-monitoring Results

Pollutant	Avg. Period	High Impact (ppm)	High Impact ($\mu g/m^3$)	HSH Impact (ppm)	HSH Impact ($\mu g/m^3$)	Ambient Standard[a] ($\mu g/m^3$)	% of Standard
PM_{10}	24-hr	------	23	------	19	150	13
	Annual	------	7	------	------	50	14

[a] MAAQS and NAAQS

VI. Ambient Air Impact Analysis

The nearest PSD Class I area is the Gates of the Mountains Wilderness Area located approximately 53 miles [85 kilometers (km)] southwest of the proposed site. Impacts have also been evaluated at the following other Class I areas within 250 km of the site: Scapegoat Wilderness Area, Bob Marshall Wilderness Area, Glacier National Park, Mission Mountains Wilderness Area, UL Bend Wilderness Area, and Anaconda Pintler Wilderness Area. Bison Engineering, Inc. (Bison) submitted modeling on behalf of SME-HGS.

Emissions of NO_x, SO_2, CO, PM_{10} and Pb were modeled to demonstrate compliance with the NAAQS and Montana Ambient Air Quality Standards (MAAQS) and the PSD increments. The modeling was performed in accordance with the methodology outlined in the Draft New Source Review Workshop Manual, EPA, October 1990 (NSR Manual), and Appendix W of 40 CFR 51,

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Guideline on Air Quality Models (revised), April 15, 2003. SME-HGS's Class II modeling used five years of surface and upper air meteorological data (1987-1991) collected at the Great Falls Airport National Weather Service (NWS) station.

SME-HGS submitted a significant impact analysis based on emissions from all proposed SME-HGS sources, including the CFB Boiler refractory brick curing heater(s) proposed under the supplemental preliminary determination. The modeled SME-HGS impacts are compared to the applicable Class II significant impact levels (SIL's) in Table 1. The SILs are contained in Table C-4 of the NSR Manual. The impacts exceed the SIL's for PM_{10}, NO_x and SO_2; therefore, a cumulative impact analysis is required for these pollutants to demonstrate compliance with the NAAQS/MAAQS. The radius of impact (ROI) for each pollutant and averaging period is included in Table 1.

Table 1: SME Class II Significant Impact Modeling

Pollutant	Avg. Period	Modeled Conc. ($\mu g/m^3$)	Class II SIL[a] ($\mu g/m^3$)	Significant (y/n)	Radius of Impact (km)
PM_{10}	24-hr	18.7	5 (1)[b]	Y	3.0
	Annual	3.1	1	Y	1.4
NO_x [c]	Annual	1.6	1	Y	0.7
CO	1-hr	66.2	2,000	N	------
	8-hr	26.9	500	N	------
SO_2	3-hr	13.6	25	N	------
	24-hr	7.4	5 (1)[b]	Y	0.7
	Annual	0.24	1	N	------
O_3	Net Increase of VOC: 35.6 tpy. Less than 100 tpy, source is exempt from O_3 analysis.				

[a] All concentrations are 1st-high for comparison to SIL's.
[b] If a proposed source is located w/in 100 km of a Class I area, an impact of 1 $\mu g/m^3$ on a 24-hour basis is significant.
[c] Significant impact area (SIA) based on NO_x impact (rather than NO_2).

NAAQS/MAAQS modeling was conducted for PM_{10}, SO_2, and NO_x. CO impacts from SME-HGS alone were below the modeling significance level and no additional modeling was conducted for CO emissions. The full ambient impact analysis included emissions from other industrial sources in the Great Falls area.

Modeling results are compared to the applicable NAAQS/MAAQS in Table 2. Modeled concentrations show the impacts from SME-HGS and off-site sources and include the background values. As shown in Table 2, the modeled concentrations are below the applicable NAAQS/MAAQS.

Table 2: SME-HGS NAAQS/MAAQS Compliance Demonstration

Pollu-tant	Avg. Period	Modeled Conc.[a] ($\mu g/m^3$)	Backgrnd Conc. ($\mu g/m^3$)	Ambient Conc. ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	% of NAAQS	MAAQS ($\mu g/m^3$)	% of MAAQS
PM_{10}	24-hr	10.5	23	33.5	150	22	150	22
	Annual	3.2	7	10.2	50	20	50	20
NO_2	1-hr	240[b]	75	315	------	------	564	56
	Annual	2.0[c]	6	8.0	100	8.0	94	8.5
SO_2	1-hr	87.2	35	122	------	------	1,300	9.4
	3-hr	42.7	26	68.7	1,300	5.3	------	-----
	24-hr	6.3	11	17.3	365	4.7	262	6.6
	Annual	0.8	3	3.8	80	4.8	52	7.3
Pb	Quarterly[d]	0.0005	Not. Avail.	0.0005	1.5	0.03		
	90-day[d]	0.0005	Not. Avail.	0.0005	-----	-----	1.5	0.03

[a] Concentrations are high-second high values except annual averages and SO_2 1-hr, which is high-6th-high.
[b] One-hour NOx impact is converted to NO_2 by applying the ozone limiting method, as per DEQ guidance.
[c] Annual NOx is converted to NO_2 by applying the ambient ratio method, as per DEQ guidance.
[d] SME reported the 24-hour average impact for compliance demonstration.

Cumulative impact modeling, including emissions from all PSD increment-consuming sources in the Great Falls area, was used to demonstrate compliance with the Class II PSD increments for PM_{10}, NO_x and SO_2. Class II increment modeling results are compared to the applicable PSD increments in Table 3.

Table 3: Class II PSD Increment Compliance Demonstration

Pollutant	Avg. Period	Met Data Set	Modeled Conc. ($\mu g/m^3$)	Class II Increment ($\mu g/m^3$)	% Class II Increment Consumed	Peak Impact Location (UTM Zone 12)
PM_{10}	24-hr	Great Falls 1988	10.5	30	35%	(497701, 5266846)
	Annual	Great Falls 1987	3.2	17	19%	(497701, 5267036)
SO_2	3-hr	Great Falls 1987	11.0	512	2.1%	(497100, 526076)
	24-hr	Great Falls 1991	6.3	91	6.9%	(497290, 5268077)
	Annual	Great Falls 1987	0.4	20	2.0%	(497386, 5268078)
NO_2	Annual[b]	Great Falls 1988	1.7	25	6.8%	(497386, 5268078)

a – Compliance with short-term standards is based on high-second-high impact.
b – Annual NO_x impacts are compared to the NO_2 standards.

SME-HGS submitted CALPUFF modeling to determine concentration, visibility and deposition impacts at the Class I areas within 250 km of the project site. CALMET was used to prepare meteorological data for input to CALPUFF. Meteorological data inputs to CALMET are included in Table 4.

Table 4: CALPUFF MET Data

Input Data Parameter	Model Year		
	1990	1992	1996
Number of Surface Stations	14	13	13
Number of Upper Air Stations	7	7	5
Number of Precipitation Stations	98	99	92
MM4/MM5 Data Grid Size	80 km	80 km	36 km

SME-HGS modeled PM_{10}, SO_2, and NO_x emissions from the SME-HGS project, and compared SME-HGS impacts to EPA's proposed Class I SIL's. SME-HGS's impacts exceeded the Class I SO_2 SILs at the Gates of the Mountain and Scapegoat Wilderness Areas. Modeling of PM_{10} and NO_x emissions did not show any exceedances of the Class I SILs at any of the Class I areas. Cumulative impact modeling for SO_2, including all PSD increment-consuming sources, was provided for the Class I areas. Results of the Class I cumulative impact modeling are included in Table 5 and show that the cumulative modeled concentrations are lower than the Class I PSD increments.

Table 5: Class I PSD Increment Compliance Demonstration, Peak Impacts

Pollutant	Avg. Period	Met Data Period	SME Modeled Conc. ($\mu g/m^3$)	Non-SME Modeled Conc. ($\mu g/m^3$)	Total Modeled Conc. ($\mu g/m^3$)	% Class I Increment Consumed
Gates of the Mountains						
SO_2	3-hr	July 23, 1996	1.08	1.26	2.34	9.4%
	24-hr	March 5, 1996	0.25	0.29	0.54	11%
Scapegoat Wilderness Area						
SO_2	24-hr	April 11, 1990	0.21	0.36	0.57	11%

a – Compliance with short-term standards is based on high-first-high impact.

SME-HGS used the CALPUFF modeling results and the CALPOST program to determine deposition values in the Class I areas. The results are shown in Table 6 and are compared to the deposition level of concern identified in the Federal Land Managers Air Quality Related Values Workgroup (FLAG) Phase I Report (December 2000). None of the modeled deposition impacts exceeded the FLAG level of concern. The Department concluded that no additional analysis of deposition impacts is needed.

Table 6: SME-HGS CALPUFF Deposition Modeling Results

Class I Area	1990		1992		1996	
	N (kg/ha/yr)	S (kg/ha/yr)	N (kg/ha/yr)	S (kg/ha/yr)	N (kg/ha/yr)	S (kg/ha/yr)
Ana-Pintler	0.0003	0.0004	0.0001	0.0002	0.0002	0.0002
Bob Marsh.	0.001	0.001	0.001	0.001	0.001	0.001
Gates Mtns.	0.002	0.002	0.002	0.002	0.002	0.003
Glacier NP	0.0003	0.0003	0.0003	0.0003	0.001	0.001
Mission Mtns	0.0002	0.0003	0.0005	0.001	0.0004	0.001
Scapegoat	0.001	0.001	0.001	0.001	0.002	0.002
UL Bend	0.002	0.002	0.001	0.002	0.002	0.002
FLAG Level of Concern	0.005	0.005	0.005	0.005	0.005	0.005

SME-HGS provided an analysis of the impact of the proposed project on air quality related values (AQRV) in the Class I and Class II areas. The effects of deposition on sensitive plant species and the effects of trace elements deposition on soils, plants, and animals were found to be below guideline levels contained in the USEPA screening guideline (EPA 450/2-81-078). The Department and affected FLMs have concluded that lake acidification analyses were not necessary because there are no sensitive lakes in the project impact area.

A visibility impact assessment is required under ARM 17.8.825 and ARM 17.8.1103, which states that the visibility requirements are applicable to the owner or operator of a proposed major stationary source, as defined by ARM 17.8.802(22). ARM 17.8.1106(1) requires that "the owner or operator of a major stationary source "…demonstrate that the actual emissions (including fugitive emissions) will not cause or contribute to adverse impact on visibility within any federal Class I area or the Department shall not issue a permit."

SME-HGS provided a visibility impact assessment as required under ARM 17.8.825 and ARM 17.8.1103 using the CALPUFF/CALPOST modeling system. CALPOST compares visibility impacts from the modeled source(s) to pre-existing visual range at the affected Class I areas and calculates a percent reduction in background extinction ($\%\Delta B_{ext}$). The results of SME-HGS's final visibility analysis are included in Table 7 and show six days in which the modeled $\%\Delta B_{ext}$ values from SME were ≥ 5%. Cumulative impact modeling was performed for those days to determine the $\%\Delta B_{ext}$ value from all the existing permitted PSD increment-consuming sources that could contribute to visibility reduction. The modeling showed four days with cumulative modeled $\%\Delta B_{ext}$ value greater than 10%.

Table 7: SME Final Visibility Results (Refined Methodology)

Class I Area	Met Data Year	Max. ΔB_{ext} 24-hr Average	Number of Days $\%\Delta B_{ext} \geq 5.0\%$	Peak Cumulative $\%\Delta B_{ext}$
Bob Marshall Wilderness Area	1990	1.57	0	NA
	1992	6.90	1	14.45
	1996	9.92	2	19.21
Gates of the Mountains Wilderness Area	1990	5.62	1	5.63
	1992	4.32	0	NA
	1996	5.77	1	15.05
Glacier National Park	1992	3.92	0	NA
	1996	1.21	0	NA
Scapegoat Wilderness Area	1990	2.31	0	NA
	1992	4.30	0	NA
	1996	5.31	1	13.65
UL Bend Wilderness Area	1992	2.09	0	NA
	1996	4.47	0	NA

The Department reviewed the visibility analysis and determined that the SME-HGS project alone and the cumulative impact of all permitted PSD increment-consuming sources will not cause or contribute to an adverse impact on visibility. The proposed emissions will not result in visibility impairment which the Department determines does, or is likely to, interfere with the management, protection, preservation, or enjoyment of the visual experience of visitors within the affected federal Class I area. This determination takes into account the geographic extent, intensity, duration, frequency, and time of visibility impairment, and how these factors correlate with times of visitor use of the federal Class I area, and the frequency and occurrence of natural conditions that reduce visibility.

Conclusion

The preceding analysis represents a summary of predicted ambient air quality impacts resulting from the proposed SME-HGS project. A comprehensive and complete dispersion modeling analysis demonstrating compliance with all applicable increments and standards is on file with the

Department. Based on this analysis, the Department determined that the proposed project operating in compliance with the applicable requirements contained in Permit #3423-00 is expected to maintain compliance with all applicable increments and standards as required for permit issuance.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted a private property taking and damaging assessment and determined there are no taking or damaging implications.

VIII. Environmental Assessment

The proposed SME-HGS project is subject to review under the requirements of the Montana Environmental Policy Act. A comprehensive draft environmental impact statement (EIS) is scheduled for issuance in May or June, 2006.

Permit Analysis Prepared By: M. Eric Merchant, MPH
Date: May 25, 2006

APPENDIX J
SIGNIFICANCE CRITERIA

SIGNIFICANCE DEFINITIONS
Impact:
AIR QUALITY DEGRADATION

Term	Definition
Magnitude	
Major	Would exceed a Federal or Montana standard
Moderate	Change greater than 50% of a Federal or Montana standard
Minor	Change less than 50% Federal or Montana standard or increment
Duration	
Long-term	Impact lasts more than 5 years.
Medium-term (limited or intermittent)	Impact lasts 1-5 years.
Short-term	Impact lasts less than 1 year.
Extent	
Large	Widespread impact in several directions or beyond one county in area
Medium (localized)	A compass sector (22.5 degrees) or up to one county in area
Small (limited)	A single receptor
Likelihood	
Probable	Occurs under typical operating conditions
Possible	Occurs under worst-case operating conditions
Unlikely	Occurs under upset/malfunction conditions

Source: Clean Air Act.

SIGNIFICANCE DEFINITIONS
Impact:
DOWNSTREAM WATER FLOW REDUCTIONS

Term	Definition
Magnitude	
Major	Would eliminate or sharply curtail existing aquatic life or human uses dependent upon in-stream flows or water withdrawals
Moderate	Would substantially interfere with existing aquatic life or human uses dependent upon in-stream flows or water withdrawals
Minor	Any observable reductions in existing aquatic life (diversity or biomass) or human uses dependent upon in-stream flows or water withdrawals
Duration	
Long-term	Impact lasts more than 5 years
Medium-term (limited or intermittent)	Impact lasts 1-5 years
Short-term	Impact lasts less than 1 year
Extent	
Large	Effects extend downstream beyond the Chouteau County border (Belt Creek confluence)
Medium (localized)	Effects extend downstream below Morony Dam
Small (limited)	Effects are limited to the Morony Dam pool
Likelihood	
Probable	Occurs during typical operating conditions
Possible	Occurs under worst case operating conditions
Unlikely	Occurs under upset/malfunction conditions

P-0019535

SIGNIFICANCE DEFINITIONS
Impact:
SURFACE WATER QUALITY DEGRADATION

Term	Definition	
Magnitude		
Major	Immediately observable impact (e.g., fish kills), or any contamination posing secondary health risks	
Moderate	Some observable biological response (e.g., avoidance)	
Minor	No biological response would be observed	
Duration (Duration is somewhat parameter- and criteria-specific and must be considered in that context.)	Input Oriented	Event Oriented
Long-term	Sufficient period to exhibit chronic effects	Continuous series of events greater than 1 to 2 years
Medium-term (limited or intermittent)	Sufficient to exhibit acute and some sub-acute effects	Intermittent events over a maximum of 1 to 2 years
Short-term	Sufficient period to exhibit acute effects	Single event
Extent		
Large	a. Effect over entire watershed (water body) or multiple watersheds, or b. Greater than 40% of major water body	
Medium (localized)	a. Effect greater than 25% of watershed (basin), or b. Greater than 50% of a small water body, or c. Greater than 10%, but less than 40%, of a major water body	
Small (limited)	Effect less than 25% of a single watershed, or less than 10% of a major water body. May include entire area of 1 to 2 small ponds (less than 5 acres) or a small seasonal wetland	
Likelihood		
Probable	Occurs under typical operating conditions	
Possible	Occurs under worst-case operating conditions	
Unlikely	Occurs under upset/malfunction conditions	

P-0019536

SIGNIFICANCE DEFINITIONS
Impact:
GROUNDWATER QUALITY DEGRADATION

Term	Definition	
Magnitude		
Major	Contamination that poses health risks by sharply exceeding drinking water standards and forcing well closures	
Moderate	Approaching or slightly exceeding drinking water standards on one or more parameters	
Minor	Degradation of baseline conditions on one or more parameters without approaching or exceeding standards	
Duration (Duration is somewhat parameter- and criteria-specific and must be considered in that context.)	Input-Oriented	Event-Oriented
Long-term	Sufficient period to exhibit chronic effects	Continuous series of events greater than 1 to 2 years
Medium-term (limited or intermittent)	Sufficient to exhibit acute and some sub-acute effects	Intermittent events over a maximum of 1 to 2 years
Short-term	Sufficient period to exhibit acute effects	Single event
Extent		
Large	a. Effect greater than entire aquifer, or b. Greater than 40% of a major aquifer	
Medium (localized)	a. Effect greater than 25% of a major aquifer, or b. Greater than 50% of a small aquifer, or c. Greater than 10 %, but less than 40%, of a major aquifer	
Small (limited)	Effect less than 25% of a single aquifer, or less than 10% of a major aquifer	
Likelihood		
Probable	Occurs under typical operating conditions	
Possible	Occurs under worst-case operating conditions	
Unlikely	Occurs under upset/malfunction conditions	

SIGNIFICANCE DEFINITIONS
Impact:
WETLAND DEGRADATION

Term	Definition
Magnitude	
Major	In conflict with Federal or State wetland protection programs
Moderate	-----
Minor	Wetland losses would be mitigated through consultation with Federal or State agencies
Duration	
Long-term	Impact lasts more than 5 years
Medium-term (limited or intermittent)	Impact lasts 1-5 years
Short-term	Impact lasts less than 1 year
Extent	
Large	Greater than 5% of the regional resource
Medium (localized)	2% to 5% of the regional resource
Small (limited)	Less than 2% of the regional resource
Likelihood	
Probable	Occurs under typical operating conditions
Possible	Occurs under worst case operating conditions
Unlikely	Occurs under upset/malfunction conditions

Source: Executive Order 11990: Protection of Wetlands.

P-0019538

SIGNIFICANCE DEFINITIONS
Impact:
AQUATIC BIOLOGICAL RESOURCES DEGRADATION

Term	Definition
Magnitude	
Major	Loss of any Threatened or Endangered species, loss or degradation of any critical habitat (Adverse impacts to Threatened or Endangered species are considered to be of major magnitude unless a Biological Assessment team report has been prepared which indicates otherwise)
Moderate	Decline in or loss of any sensitive species populations or habitats; loss or degradation of any unusual aquatic communities
Minor	Loss or degradation of undisturbed aquatic habitat in affected area
Duration	
Long-term	Longer than three years or enough to affect multiple generations of larger and longer-lived fish species
Medium-term (limited or intermittent)	From one full season following completion of construction to three years
Short-term	One full season following completion of construction
Extent	
Large	Effects documented at the population or habitat level
Medium (localized)	Effects documented at the groups of individual (20 -100 individuals) or localized level (Morony Reservoir)
Small (limited)	Effects are limited to scattered individuals (<20 individuals)
Likelihood	
Probable	Occurs during typical operating conditions
Possible	Occurs under worst case operating conditions
Unlikely	Occurs under upset/malfunction conditions

SIGNIFICANCE DEFINITIONS
Impact:
TERRESTRIAL BIOLOGICAL RESOURCES DEGRADATION

Term	Definition
Magnitude	
Major	Loss of any Threatened or Endangered species, loss or degradation of any critical habitat. Impacts to Threatened or Endangered species are considered to be of major magnitude unless a Biological Assessment team report has been prepared and indicate otherwise
Moderate	Loss of any sensitive species or habitats; loss or degradation of habitats
Minor	Loss or degradation of undisturbed/developed habitat in affected area
Duration	
Long-term	Longer than three years or enough to affect multiple generations of larger mammals and birds
Medium-term (limited or intermittent)	From one full season following completion of construction to three years
Short-term	One full season following completion of construction
Extent	
Large	Greater than 5% of regional (as defined by county or space center boundaries, if known) resources
Medium (localized)	2% to 5% of regional resources
Small (limited)	Less than 2% of regional resources
Likelihood	
Probable	Occurs under typical operating conditions
Possible	Occurs under worst-case operating conditions
Unlikely	Occurs under upset/malfunction conditions

SIGNIFICANCE DEFINITIONS
Impact:
INVASIVE PLANTS

Term	Definition
Magnitude	
Major	Complete infestation of noxious weed species in newly disturbed areas. Infestation spreads from newly created edge habitat outwards into previously weed-free habitat. Loss of native vegetation
Moderate	Sporadic infestation of noxious weed species. Infestation is limited to newly disturbed areas. Encroachment does not impact native vegetation
Minor	Infestation of noxious weed species in localized sections of newly disturbed areas. Encroachment does not impact native vegetation
Duration	
Long-term	Infestation persists more than one year
Medium-term (limited or intermittent)	Infestation persists six months to one year
Short-term	Infestation limited to less than six months
Extent	
Large	Greater than 50% of Project and surrounding area
Medium (localized)	10% to 50% of Project area
Small (limited)	Less than 10% of Project area
Likelihood	
Probable	Occurs under typical operating conditions
Possible	Occurs under worst-case operating conditions
Unlikely	Occurs under upset/malfunction conditions

SIGNIFICANCE DEFINITIONS
Impact:
LOSS OF PROTECTED FARMLAND

Term	Definition
Magnitude	
Major	Project would impact areas designated as either Prime Farmland or Unique Farmland currently under cultivation*
Moderate	Project would impact land designated as Unique Farmland
Minor	Project would impact areas dedicated to built-up uses, but with soils usually considered Prime
Duration	
Long-term	Permanent
Medium-term (limited or intermittent)	20 years or more
Short-term	Less than 20 years
Extent	
Large	Over 1,000 acres of prime and unique farmland is taken out of the resource base
Medium (localized)	50 to 1,000 acres of prime and unique farmland is taken out of the resource base
Small (limited)	Less than 50 acres of prime and unique farmland is taken out of the resource base
Likelihood	
Probable	Occurs under typical operating conditions
Possible	Occurs under worst-case operating conditions
Unlikely	Occurs under upset/malfunction conditions

* Prime and Unique Farmlands are recognized by the CEQ as specific protected land uses, and any potentially significant impacts to them must be identified and minimized under NEPA.

SIGNIFICANCE DEFINITIONS
Impact:
SOIL EROSION

Term	Definition
Magnitude	
Major	Secondary effects (e.g., building damage, siltation of surface water)
Moderate	Aesthetic effects
Minor	Imperceptible changes
<u>Duration</u>	
Long-term	Impact lasts more than 5 years
Medium-term (limited or intermittent)	Impact lasts 1-5 years
Short-term	Impact lasts less than 1 year
<u>Extent</u>	
Large	Greater than 5 acres of sloping ground or soils exposed
Medium (localized)	Between 1-5 acres of sloping ground or soils exposed
Small (limited)	Less than 1 acre of sloping ground or soils exposed
<u>Likelihood</u>	
Probable	Occurs under typical operating conditions
Possible	Occurs under worst-case operating conditions
Unlikely	Occurs under upset/malfunction conditions

P-0019543

SIGNIFICANCE DEFINITIONS
Impact:
SOIL CONTAMINATION

Term	Definition
Magnitude	
Major	Leaching of contaminants causes water quality degradation and health risks as defined for surface water and groundwater degradation
Moderate	(same as above)
Minor	(same as above)
Duration	
Long-term	Cumulative over operational life
Medium-term (limited or intermittent)	Recurrent, or residues accumulating
Short-term	Easily cleared up or self-remediating (e.g., biological breakdown, volatilizing)
Extent	
Large	Greater than 100 cubic yards (cu. yd.) (100 sq. yd. surface area)
Medium (localized)	Approximately 10 cu. yd. (10 sq. yd. surface area)
Small (limited)	Less than 1 cu. yd. (2 sq. yd. surface area)
Likelihood	
Probable	Occurs under typical operating conditions
Possible	Occurs under worst-case operating conditions
Unlikely	Occurs under upset/malfunction conditions

SIGNIFICANCE DEFINITIONS
Impact:
CULTURAL/ARCHAEOLOGICAL RESOURCES DEGRADATION

Term	Definition
Magnitude	
Major	Disturbance of a site listed on or eligible for listing on the National Register of Historic Places or National Historic Landmark diminishes the significance or integrity of the site
Moderate	Disturbance of a site listed on or eligible for listing on the National Register does not diminish the significance or integrity of the site
Minor	Disturbance of a site listed on or eligible for listing on the National Register of Historic Places could occur, but adverse effects are mitigated or avoided
Duration	
Long-term	Cultural resources are non-renewable; any adverse effect is permanent/long-term
Medium-term (limited or intermittent)	-----
Short-term	-----
Extent	
Large	Most of a cultural resource or site is affected (more than 50%)
Medium (localized)	Part of a cultural resource or site is affected (5 to 50%)
Small (limited)	Small portion of a cultural resource or site is affected (less than 5%)
Likelihood	
Probable	Occurs under typical operating conditions
Possible	Occurs under worst-case operating conditions
Unlikely	Occurs under upset/malfunction conditions

Sources: National Historic Preservation Act (1966 and amended); 36 CFR 800: Protection of Historic and Cultural Properties
Notes: Cultural resource properties can include archaeological (prehistoric and historic), historic sites and structures, landscapes, landmarks, Traditional Cultural Properties (TCPs), graves and sacred sites of importance to native peoples, as defined in 36 CFR 800.

SIGNIFICANCE DEFINITIONS
Impact:
LAND USE CONFLICTS

Term	Definition
Magnitude	
Major	Unavoidable, unmitigable conflict.
Moderate	Unavoidable conflict but some mitigation is possible.
Minor	Conflict can be avoided or substantially mitigated.
Duration	
Long-term	Conflict lasts more than 5 years
Medium-term (limited or intermittent)	Conflict lasts 1 to 5 years
Short-term	Conflict lasts less than 1 year
Extent	
Large	Proposed project occupies an area greater than 5% of the planning area jurisdiction
Medium (localized)	------
Small (limited)	Proposed project occupies an area less than 5% of the planning area jurisdiction
Likelihood	
Probable	Occurs under typical operating conditions
Possible	Occurs under worst-case operating conditions
Unlikely	Occurs under upset/malfunction conditions

SIGNIFICANCE DEFINITIONS
Impact:
RECREATION DEGRADATION

Term	Definition
Magnitude	
Major	Project would eliminate areas of prime or unique recreation opportunities or facilities.
Moderate	Reduction of recreational opportunities within the area.
Minor	Slight modification of recreation opportunities within the area.
Duration	
Long-term	Impact lasts more than 5 years
Medium-term (limited or intermittent)	Impact lasts 1 to 5 years
Short-term	Impact lasts less than 1 year
Extent	
Large	Users from the State of Montana or beyond
Medium (localized)	Users primarily from Cascade County and neighboring counties
Small (limited)	Predominantly local users
Likelihood	
Probable	Occurs under typical operating conditions
Possible	Occurs under worst-case operating conditions
Unlikely	Occurs under upset/malfunction conditions

SIGNIFICANCE DEFINITIONS
Impact:
HAZARDOUS WASTE EXPOSURE

Term	Definition
Magnitude	
Major	Large generator of hazardous waste (i.e., generates greater than 1000 kg of hazardous waste in a calendar month)
Moderate	Large intermittent generator of hazardous waste
Minor	Small quantity generator (i.e., generates less then 1000 kg of hazardous waste in a calendar month)
Duration	
Long-term	Generates hazardous waste for more than 5 years or throughout the life of the project
Medium-term (limited or intermittent)	Generates hazardous waste for 1-5 years or intermittently
Short-term	Generates hazardous waste only during infrequent operations
Extent	
Large	Generates hazardous waste during all phases of construction and operation
Medium (localized)	Generates hazardous waste during about one-half of the duration of construction and operation
Small (limited)	Generates hazardous waste during less than one-half of the duration of construction and operation
Likelihood	
Probable	Occurs under typical operating conditions
Possible	Occurs under worst-case operating conditions
Unlikely	Occurs under upset/malfunction conditions

SIGNIFICANCE DEFINITIONS
Impact:
SOLID WASTE ACCUMULATION OR CONTAMINATION

Term	Definition
Magnitude	
Major	Existing landfill capacity less than 2 years, or no existing capacity or groundwater contamination
Moderate	Existing landfill capacity would be depleted in 7 to 2 years; no groundwater contamination
Minor	Existing landfill capacity would be depleted in more than 7 years; no groundwater contamination
Duration	
Long-term	Siting and permitting of new disposal facility would take more than 3 years; or groundwater contamination
Medium-term (limited or intermittent)	Siting and permitting of new disposal facility would take from 1 to 3 years
Short-term	Siting and permitting of new disposal facility would take less than 1 year; no groundwater contamination
Extent	
Large	Multiple landfills needed or a large landfill needed to expand capacity (greater than 100 acres); or large groundwater contaminant plume
Medium (localized)	Moderate-sized landfill needed (40 to 100 acres)
Small (limited)	Small landfill needed (less than 40 acres)
Likelihood	
Probable	Occurs under typical facility operating conditions
Possible	Occurs under worst-case operating conditions
Unlikely	Occurs under upset/malfunction conditions

SIGNIFICANCE DEFINITIONS
Impact:
TRAFFIC CONGESTION

Term	Definition
Magnitude	
Major	Level of Service decreased to E or below; vehicle spacing is at approximately 6 car lengths
Moderate	Service level decrease to D; vehicle spacing is at or above 165 feet, or 9 car lengths
Minor	Service level remains at C or above; vehicle spacing is in range of 220 feet, or 11 car lengths
Duration	
Long-term	More than 5 years (operational period)
Medium-term (limited or intermittent)	1 to 5 years (generally equivalent to construction period)
Short-term	Less than 1 year (associated with temporary road closures)
Extent	
Large	Multiple intersections or road segments on key access routes to community
Medium (localized)	1 to 3 intersections or road segments, primarily affects traffic routes
Small (limited)	1 intersection or road segment, not key location in local system
Likelihood	
Probable	Occurs under typical operating conditions
Possible	Occurs under worst-case operating conditions
Unlikely	Occurs under upset/ malfunction conditions

SIGNIFICANCE DEFINITIONS
Impact:
NOISE

Term	Definition	
Magnitude	**A-Weighted (Humans)**	**Linear (Structures)**
Major	Greater than 100 decibel (dB) noise levels	Greater than 130 dB noise levels (15 pounds per square foot (PSF))
Moderate	Noise levels between 75 dB and 100 dB	Noise levels between 127 dB and 130 dB (10 to 15 PSF)
Minor	Noise levels less than 75 dB	Noise levels less than 127 dB (10 PSF)
Duration		
Long-term	More than 3 minutes for individual sounds; elevated noise levels persist for more than 5 years	
Medium-term (limited or intermittent)	Elevated noise levels persist for 1-5 years	
Short-term	3 minutes or less for individual sounds; elevated noise levels persist for less than 1 year	
Extent		
Large	More than 1,000 persons exposed to greater than 80 dB	
Medium	100 to 1,000 people affected	
Small	Less than 100 people affected	
Likelihood		
Probable	Occurs under typical operating conditions	
Possible	Occurs under worst-case operating conditions	
Unlikely	Occurs under upset/malfunction conditions	

SIGNIFICANCE DEFINITIONS
Impact:
ALTER SCENIC QUALITY

Term	Definition
Magnitude	
Major	A modification, which is dominant in the landscape and demands attention.
Moderate	A modification, which attracts attention, but is not dominant.
Minor	A modification, which can be seen, but does not attract attention.
Duration	
Long-term	Alteration lasts 5 years or more
Medium-term (limited or intermittent)	Alteration lasts 1 to 5 years
Short-term	Alteration lasts less than 1 year
Extent	
Large	Visual quality is altered for more than 1,000 people
Medium (localized)	Visual quality is altered for 100 to 1,000 people
Small (limited)	Visual quality is altered for less than 100 people
Likelihood	
Probable	Occurs under typical operating conditions
Possible	Occurs under worst-case operating conditions
Unlikely	Occurs under upset/malfunction conditions

Source: Bureau of Land Management: Visual Resource Management Guidelines.

SIGNIFICANCE DEFINITIONS
Impact:
DEGRADE HUMAN HEALTH AND SAFETY

Term	Definition
Magnitude	
Major	Catastrophic event resulting in loss of life, severe injuries requiring hospitalization, or major property damage or loss; chronic health effects may be debilitating or severely impair quality of life (e.g. neurological damage), or raise incidence of life-threatening diseases (e.g. lung cancer, emphysema)
Moderate	Event resulting in moderate injuries, which may require hospitalization, or moderate property damage or loss; chronic health effects may interfere with one or more bodily functions and impair quality of life
Minor	Event resulting in minor injuries, which do not require hospitalization, or minor property damage or loss; chronic health effects may cause discomfort or partially impair quality of life
Duration	
Long-term	Exposure or risk persists longer than 5 years
Medium-term (limited or intermittent)	Exposure or risk persists 1 to 5 years
Short-term	Exposure or risk persists less than 1 year
Extent	
Large	Extending outside buffer zone into region, state, or nation
Medium (localized)	Confined to within buffer zone into region, state, or nation
Small (limited)	Confined to site or individual facility on the site
Likelihood	
Probable	Occurs under typical operating conditions
Possible	Occurs under worst-case operating conditions
Unlikely	Occurs under upset/malfunction conditions

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SIGNIFICANCE DEFINITIONS
Impact:
SOCIOECONOMIC RESOURCES
(Population or Employment Changes, or Changes in Housing and Service)

Term	Definition
Magnitude	
Major	Greater than 3% change in population, employment, or housing, if measurable
Moderate	2% to 3% change in population, employment, or housing, if measurable
Minor	Less than 1% change in population, employment, or housing, if measurable
Duration	
Long-term	More than 10 years
Medium-term (limited or intermittent)	2 to 10 years
Short-term	Less than 2 years (assuming a 2-year construction phase)
Extent	
Large	State, regional, or national
Medium (localized)	Entire study area
Small (limited)	Part of study area
Likelihood	
Probable	Greater than 50% chance of occurrence
Possible	5% to 50% chance of occurrence
Unlikely	Less than 5% chance of occurrence

SIGNIFICANCE DEFINITIONS
Impact:
CHANGES IN INCOME

Term	Definition
Magnitude	
Major	Greater than 10% change in per capita income
Moderate	5% to 10% change in per capita income
Minor	Less than 5% change in per capita income.
Duration	
Long-term	Project-induced jobs remain in Cascade County and directly contribute to individual income.
Medium-term	Temporary project money circulates through the region.
Short-term	Project-induced spending is localized and temporary.
Extent	
Large	Entire State of Montana is affected
Medium (localized)	Entire region or County is affected
Small (limited)	Study area only is affected
Likelihood	
Probable	Greater than 50% chance of occurrence
Possible	5% to 50% chance of occurrence
Unlikely	Less than 5% chance of occurrence

SIGNIFICANCE DEFINITIONS
Impact:
CHANGES IN THE TAX BASE

Term	Definition
Magnitude	
Major	Greater than 10% of land withdrawn from the County's tax base
Moderate	2% to 10% of land withdrawn from the County's tax base
Minor	Less than 2% of land withdrawn from the County's tax base
Duration	
Long-term	Tax base suffers an irreplaceable loss.
Medium-term	Tax base requires new development over time to replace the loss.
Short-term	Tax base can replace the loss within immediate tax reassessments.
Extent	
Large	Entire County's revenue is affected by the loss to the tax base.
Medium (localized)	Entire study area tax assessment is affected.
Small (limited)	Part of study area tax assessment is affected.
Likelihood	
Probable	Greater than 50% chance of occurrence
Possible	5% to 50% chance of occurrence
Unlikely	Less than 5% chance of occurrence

SIGNIFICANCE DEFINITIONS
Impact:
RESIDENTIAL RELOCATION

Term	Definition
Magnitude	
Major	Greater than 30 homes relocated or demolished and community structure is broken
Moderate	10 to 30 homes relocated or demolished
Minor	Less than 10 homes relocated or demolished and community remains intact
Duration	
Long-term	Indefinite
Medium-term	Greater than 5 years
Short-term	Less than 5 years
Extent	
Large	Entire study area is affected
Medium (localized)	Part of the study area is affected
Small (limited)	One street is affected
Likelihood	
Probable	80 to 100% chance of occurrence
Possible	20% to 80% chance of occurrence
Unlikely	Less than 20% chance of occurrence

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APPENDIX K

DRAFT MEMORANDUM OF AGREEMENT CONCERNING GREAT FALLS PORTAGE NATIONAL HISTORIC LANDMARK

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MEMORANDUM OF AGREEMENT
PURSUANT TO CODE OF FEDERAL REGULATIONS
TITLE 36, PART 800.6(b)(1)

Among

The United States Department of Agriculture, Rural Utilities Service,
The Montana State Historic Preservation Office,
The United States Department of the Interior, National Park Service
The United States Department of Agriculture, Forest Service,
The Advisory Council on Historic Preservation,
Southern Montana Electric Generation & Transmission Cooperative, Inc.

Regarding

Southern Montana Electric Generation & Transmission Cooperative, Inc.
Highwood Generating Station
Cascade County
Great Falls, Montana

WHEREAS, the United States Department of Agriculture, Rural Utilities Service (RUS) is considering a loan guarantee application from the Southern Montana Electric Generation & Transmission Cooperative, Inc. (SME) in order for SME to construct a 250-megawatt coal fired power plant, known as the Highwood Generating Station (HGS), and 6-megawatts of wind generation (collectively, the Project), at a site near Great Falls, Montana; and

WHEREAS, RUS's provision of said loan guarantee for the Project would be a federal undertaking (undertaking) as defined in the National Historic Preservation Act of 1966 (NHPA); and

WHEREAS, RUS has prepared an environmental impact statement (EIS) under the National Environmental Policy Act (NEPA) for the Project and has used the process and documentation required for NEPA to comply with the NHPA's Section 106 requirements pursuant to 36 CFR § 800 et seq.; and

WHEREAS, RUS has established the undertaking's area of potential effects (APE) as shown in the Highwood Generating Station draft EIS: a) on pages 3-73 through 3-89; b) on pages 4-81 through 4-94; and c) in Appendix G on pages 1 through 47; and

WHEREAS, RUS has determined that the undertaking will have an adverse visual effect on the Great Falls Portage National Historic Landmark (NHL); and

WHEREAS, RUS has consulted with and requested the comments of the Montana State Historic Preservation Office (SHPO), the National Park Service (NPS), the United States Forest Service (USFS) and the Advisory Council on Historic Preservation (Council) pursuant to Section 106 of NHPA and its implementing regulations, Protection of Historic and Cultural Properties (36 CFR Part 800); and

WHEREAS, RUS has also invited and consulted with other governmental and non-governmental consulting parties and has invited the undersigned parties to be signatories to this MOA pursuant to 36 CFR § 800.6(c)(2): and

WHEREAS, the parties recognize that the County Commissioners of Cascade County, the county in which the HGS is proposed to be sited in, has approved rezoning for the proposed location. The HGS is proposed to be sited in Sections 24 and 25, Township 21 North, Range 5 East, M.P.M., Cascade County, Montana. Approximate UTM coordinates of the facility site (specifically the Unit 1 stack) are Zone 12, Easting 497.3 kilometers, and Northing 5,266.4 kilometers. Site elevation is approximately 3,310 feet above mean sea level.

NOW, THEREFORE, RUS, the SHPO, NPS, USFS, the Council, and SME agree that in accordance with RUS' decision to proceed with approval of the undertaking, RUS shall ensure that the following stipulations are implemented in order to take into account the adverse effects of the undertaking on the NHL.

STIPULATIONS

The RUS, in cooperation the SHPO, NPS, USFS, the Council, and SME shall ensure that the following measures are carried out prior to the Project proceeding to construction:

[Insert negotiated mitigation measures]

III. Dispute Resolution.

A. Should any signatory to this MOA object in writing to RUS regarding any action carried out or proposed with respect to the undertaking or implementation of this MOA, RUS shall consult with the objecting party to resolve the objection. If after initiating such consultation, RUS determines that the objection cannot be resolved through consultation RUS shall forward all documentation relevant to the objection to the Council, including RUS's proposed response to the objection. Within 30 days after receipt of all pertinent documentation, the Council shall exercise one of the following options:

1. Advise RUS that the Council concurs in RUS's proposed response to the objection, whereupon RUS will respond to the objection accordingly;

2. Provide RUS with recommendations, which RUS shall take into account in reaching a final decision regarding its response to the objection; or

3. Notify RUS that the objection will be referred for comment pursuant to 36 CFR § 800.7(a)(4), and proceed to refer the objection and comment. RUS shall take the resulting comment into account in accordance with 36 CFR § 800.7(c)(4) and Section 110(l) of NHPA.

B. Should the Council not exercise one of the above options within 30 days after receipt of all pertinent documentation, RUS may assume the Council's concurrence in its proposed response to the objection.

C. RUS shall take into account any Council recommendation or comment provided in accordance with this stipulation with reference only to the subject of the objection; RUS's responsibility to carry out all actions under this agreement that are not the subjects of the objection shall remain unchanged.

IV. Amendment/Termination.

A. Any consulting party to this Agreement may request that it be amended, whereupon the parties will consult to consider such amendment in accordance with 36 C.F.R. 800.5(e)(5).

B. RUS shall not alter the specifications under this called for under this MOA without first affording the parties to this MOA the opportunity to review the proposed change and determine whether it will require that revisions be made in this agreement. If revisions to this MOA are required, RUS shall consult in accordance with 36 CFR Part 800 to make such revisions.

C. On or before January 30th of each year until RUS, SHPO and the Council agree in writing that the terms of this MOA have been fulfilled, RUS shall prepare and provide an annual report to the Council, SHPO, and the other signatories addressing the following topics:

1. Progress in constructing the HGS;

2. Progress in completing the On-site mitigations described herein;

3. Progress in completing the Off-site mitigations described herein;

4. Any problems or unexpected issues encountered during the year; and

5. Any changes that RUS believes should be made in implementing this MOA.

RUS shall ensure that its annual report is made available for public inspection, that potentially interested members of the public are made aware of its availability, and that interested members of the public are invited to provide comments to the SHPO, Council, as well as to RUS. The signatories to the MOA shall review the annual report and provide comments to RUS. Non-signatory parties to this MOA may review and comment on the annual report at their discretion. Based on this review, RUS, SHPO, and the Council shall determine whether this MOA shall continue in force, be amended, or be terminated.

Any signatory as defined at 36 C.F.R. 800.6(c)(1) may terminate this Agreement by providing thirty days written notice to the consulting parties, provided that the parties will consult during that period to seek agreement on amendments or other actions that would avoid termination. In the event of termination, RUS will comply with 36 C.F.R. 800.4 through 800.6.

VI. <u>Satisfaction of Section 106 Responsibilities</u>.

Execution and implementation of this MOA evidences that RUS has satisfied its Section 106 responsibilities for all actions related to the HGS undertaking.

VII. <u>Counterparts</u>.

This MOA may be signed by the parties as one or more identical, duplicate documents with the same effect as if the parties had all signed a single document.

VIII. <u>DATE OF IMPLEMENTATION AND DURATION</u>.

This Agreement will take effect on the date of the last signature. It shall be null and void if its terms are not carried out within five years from the date of its execution, unless the signatories as defined at 36 C.F.R. 800.6(c)(1) agree in writing to an extension for carrying out its terms.

SIGNATORIES

SIGNED:

UNITED STATES DEPARTMENT OF AGRICULTURE, RURAL UTILITIES SERVICE
Mark S. Plank, Director Engineering and Environmental Staff and Federal Preservation Officer

By:________________________________ Date:_____________________________

SIGNED:

MONTANA STATE HISTORIC PRESERVATION OFFICE

By:________________________________ Date:_____________________________

SIGNED:

UNITED STATES DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE

By:________________________________ Date:________________________

SIGNED:

UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE

By:________________________________ Date:________________________

SIGNED:

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By:________________________________ Date:_____________________________

SIGNED:

SOUTHERN MONTANA ELECTRIC GENERATION AND TRANSMISSION COOPERATIVE, INC.

By:________________________________ Date:_____________________________

Final Environmental Impact Statement
Highwood Generating Station

Appendix L
Comments and
Agencies' Responses to Comments

January 2007

This document (Appendix L of the FEIS) contains the public's comments and the agencies' responses to those comments on the Draft EIS and revised draft air quality permit for the proposed Highwood Generating Station. Please review the following suggestions for using these comments and agencies' responses to comments.

There are three tables to facilitate your access to Appendix L. The first table, Table L-3, lists the categories and codes for the comments – for example Alternatives, ALT-305, Integrated Gasification Combined Cycle (IGCC). The second table, Table L-4, lists the commenters by name in alphabetical order and provides a comment ID number (C#) for each person or organization. The third table, Table L-5, lists the commenters in numerical order.

A commenter is anyone who submitted written comments (hard or electronic copy) in a personal letter, email, a form letter, or a postcard, and/or presented testimony at either the Great Falls or Havre hearing on the Draft EIS and draft air quality permit. For each person or organization, there is a listing of the comment numbers where that person's or organization's comments can be found; for example 200-33 means the 33rd comment in the category section PUR-200, Purpose and Need. Federal, state, local and tribal agency comment ID numbers are included in the listings. When reviewing the comments, you can locate your ID number to see which of your comments was included. The third table, Table L-5, lists the commenters in ascending order by ID number. This table is useful when you see an ID number after a comment and wonder who made that comment. You could then go to the third table and see what other comments were made by the same person or agency. Copies of all letters, postcards, and petitions are on file at agency offices and are available for review and can be obtained for the cost of copying and postage.

The agencies are not required to respond to every comment made by every person. However, "all substantive comments received on the draft statement (or summaries thereof where the comments were exceptionally voluminous), should be attached to the final statement whether or not the comment is thought to merit individual discussion by the agency in the text of the statement" (40 CFR 1503.5(b)). Under Montana regulations, a final EIS must include "responses to substantive comments received on the draft EIS" (ARM 17.4.619(1)). If the comment resulted in changes to the EIS text, then it is usually so stated in the response, but not all responses require that the text in the EIS be modified or supplemented. For persons who commented on the document, but whose comments were not considered substantive, the phrase "Thank you for your comment" will be stated. This includes those persons who merely expressed an opinion for or against the project, stated simple editorial comments, or restated portions of the EIS text without stating a specific comment.

Where possible, similar comments are grouped together or have been consolidated into a single comment (therefore, not all comments may be verbatim) and provided with a single response. Some grouped comments may list two or more pages of related comments from numerous people before the response is provided. The more unique and detailed comments usually have their own responses. Often there were overlaps between categories for some comments; each comment was placed in the most appropriate category or split up between several. If you are interested in certain issues, you may need to look at comments and responses in several categories.

Postcards and Petition

In addition to the hundreds of written and oral comments on the DEIS received from individuals, groups, and agencies, thousands of Montana residents signed postcards (both for and against the HGS) and a petition (against the HGS) concerning the project. With the exception of one of the postcards, the names of these signatories are not included in the tables below due to the large number of names as well as the identical comment for which these signatories were expressing their agreement by affixing their names. One postcard supporting the project was distributed, as were one postcard and one petition opposing it. Each is described briefly below.

Yellowstone Valley Electric Cooperative Postcard

Yellowstone Valley Electric, one of the member cooperatives of SME, distributed postcards supporting the HGS to its customers and collected 4,311 signed postcards, which were submitted to DEQ. The postcard reads (italics added):

Statement In Support of the
Highwood Generating Station

TO: The Montana Department of Environmental Quality
The Rural Utilities Service

- *As a member of Yellowstone Valley Electric Cooperative, I support the construction of the Highwood Generating Station. My electric Cooperative is a part-owner of this power plant project.*
- *The Highwood Generating Station will utilize the best available control technology to limit emissions and will be compliant with State and Federal Air Quality Standards.*
- *The Highwood Generating Station will provide Montana citizens with high paying jobs and will bring positive economic benefits to local and state government.*
- *The Highwood Generating Station will utilize Montana's vast coal resources to bring long-term affordable and reliable electric service to tens of thousands of Montanans.*

I strongly support the construction of the Highwood Generating Station and request the approval of the Southern Montana Electric Generation and Transmission Cooperative Environmental Impact Statement.

Table L-1 is a list of all the names of those individuals and businesses who signed and sent the Yellowstone Valley Electric Cooperative postcard expressing support for the Highwood Generating Station back to the cooperative, which delivered them to the Montana Department of Environmental Quality.

Table L-1. Senders of the Yellowstone Valley Cooperative Postcard in Support of HGS

Last Name	First Name	Last Name	First Name
A & B RESTAURANT		ALLEN	PAUL G
A ALL PURPOSE STORAGE		ALLEN	ROBERT L
A J MINI STORAGE		ALLEN	GEORGE
A-1 JOHNSON AUTO WRECKING		ALLES	JACK J
A-1 LANDSCAPING		ALLISON	LOYD M
A-1 PRORATE SERVICE INC		ALLISON	ROBERT F
AABY	PAUL A	ALLISON	CHARLES R
AABY	WILLIAM A	ALLRED	LARRY G
AABY	FRANCES	ALLWIN	DENNIS D
AALGAARD	LARRY	AL'S MINI STORAGE OF MONTANA	
AARON JAMES CONSTRUCTION		ALTMAN	THOMAS L
ABBEY	EARL H	ALVERAZ	JOHN
ABEL	JUSTIN	AMADON	ROGER M
ABELL	JESSE W	AMANN	ROSELLA A
ABELMAN	ALAN K	AMEN	GEORGE W
ABY	BART W	AMEN	LUCRETIA A
ACCORDINO	FRED W	AMES	MICHELE R
ACHTEN	JEFF J	AMIES	VICKY JO
ADAIR	LYDA L	ANDERSCH	JIM
ADAMS	ALBERT A	ANDERSEN	WAYNE E
ADAMS	JOHN L	ANDERSON	SHANE A
ADAMS	DENIS L	ANDERSON	DANIEL A
ADAMS	JOHN L	ANDERSON	RICHARD K
ADAMS	THOMAS F	ANDERSON	PAUL L
ADAMSKI	ALEX A	ANDERSON	RONALD W
ADOLPH COORS COMPANY		ANDERSON	ALBERT W
AFFLECK	DOUG P	ANDERSON	LORAIN G
AGRINOMICS INC		ANDERSON	JAMES D
AHMANN	STEVE	ANDERSON	TED N
AIGNER	TODD H	ANDERSON	KATHERINE P
AKIN	DEAN H	ANDERSON	R D
ALBERS	ALTON C	ANDERSON	BRIAN K
ALBERS	ROBERT E	ANDERSON	KEITH D
ALBERT	EUGENE A	ANDERSON	DEBRA A
ALBRECHT	CORWIN	ANDERSON	JOETTA
ALBRECHT	LARRY L	ANDERSON	KRISTINE M
ALBRIGHT	GREGORY A	ANDERSON	CONSTANCE J
ALDERMAN	VIRGINIA E	ANDERSON	ALLEN
ALDINGER	ROGER	ANDREWS	HELEN E
ALDINGER	DARRELL	ANGELL	SUSAN
ALDRICH	LEONA E	ANITA ANGUS RANCH	
ALDRICH	JOHN T	ANKRUM	DANIEL
ALLARD	EUGENE	ANS	MARTIN S
ALLEN	BERNARD C	ANTHONY	GARY W
ALLEN	MARK A	ANTON	STEVE P
ALLEN	LLOYD E	ANTTILA	VERN W
ALLEN	DENNIS	ARBIZZANI	CHARLES G

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Last Name	First Name	Last Name	First Name
ARCHAMBEAULT	STEVE	BALDRY	DORIS A
ARCHER	JAMES M	BALDRY	ALVIE J
ARCHER	MICHAEL W	BALES	LORETTA
ARCHULETA	LYNN B	BALL	KATHRYN
ARD	ROBERT R	BALL	LUCIEN C
ARMSTRONG	JAMES L	BALL	DIRK J
ARMSTRONG	JEFF J	BALLARD	MEG
ARMSTRONG	LARRY M	BALLARD	DOUGLAS F
ARMSTRONG	ROBERT E	BALLARD	WILLIAM W
ARNESON	OSCAR	BALSTER	JOSHUA K
ARNOLD	RICK E	BALZER	RONALD
ARNOLD	PHYLLIS R	BALZER	TERRAL
ARNOLD	DIRK T	BALZER	DARELENE N
ARNOLD	EUGENE C	BALZER	MARVIN A
ARNOLD	S CHAD	BANDEROB	ARVIN H
ARVAL LTD PARTNERSHIP		BANGART	TOM
ASHLAWN FARMS INC		BARBER	HENRY J
ATCHISON	ALYCE R	BARE	JOHN R
ATKINSON	MIKE B	BARGSTADT	STEVE
AUREN	NANCY	BARISICH	JUSTIN W
AUSTIN	JAMES L	BARKER	ELVIN
AUSTIN	BOB	BARKHUFF	RANDY
AVERY	CHARLES W	BARKHUFF	VICKI M
AZURE	RANDALL P	BARNARD	BEN P
B & B TRAILER COURT		BARNARD	LEONARD W
BABCOCK	KEITH	BARNES	ROBERT D
BABER	JOHN O	BARNES	KATHLEEN L
BABNIK	JOHN	BARNES	BRET
BACKER	JANICE E	BARNHART	WILLIAM E
BADGETT	JAY	BARNHART	GARY L
BADOVINUS	GARY W	BARRICK	DEAN M
BAILEY	DELBERT L	BARTA	ALLEN J
BAILEY	KATHRYN L	BARTHOLOMEW	BARRY J
BAILEY	RICHARD N	BARTHULY	CARL B
BAILEY	ALVIN W	BARTHULY	HARRY
BAIN-PETERSON	CONNIE I	BARTLETT	CYNTHIA A
BAIRD	GUY J	BATO	JOSEPH H
BAISCH	DAVID	BAUER	DELVIN E
BAKER	DONALD	BAULEY	ROBERT H
BAKER	JAMES R	BAUM	JAMEY L
BAKER	MIKE J	BAUM	GERALD J
BAKER	JASON R	BAUMAN	JAMES C
BAKER	ADAM L	BAUMANN	LYLE D
BAKER	JIM W	BAUMANN	KENNY W
BAKER	JIM W	BAXTER	ROBERT C
BAKER	SHIRLEY	BAXTER	ROBERT G
BAKER	ERIC T	BAYNE	HENRY
BAKKER	STEVE	BAYNE	LINDA S
BAKKER	ANNA K	BEACH	ALLAN
BAKKER	WILLIAM	BEADLE	DAVID P
BALDNER	ROBERT F	BEAR	MELISA M

Last Name	First Name	Last Name	First Name
BEARD	RUTH E	BERAN	MARY ANN
BEARD	KENNETH M	BEREA BAPTIST CHURCH	
BEARD	JUSTIN L	BERG	RALPH M
BEATON	ELIZABETH	BERG	STANLEY C
BEATTIE	NORMAN	BERG	ROSS E
BEAUMAN	HARRY	BERG	JOHN W
BECK	RUSSELL D	BERGENDAHL	EARL H
BECK	JOHN W	BERGENDAHL	JON C
BECK	LINDA L	BERGER	MARJORIE M
BECKER	THOMAS	BERGER	ROD A
BECKER	SERINA J	BERGERSON	DARYL G
BECKER	RONALD	BERGERSON	BRUCE K
BECKER	SHERIDAN O	BERGGREN	RAY F
BECKER	PATRICE	BERGLEE	CLIFTON M
BECKER	COURTNEY M	BERGLUND	R A
BECKER FARMING		BERGSTROM	DAN T
BECKERS	MICHAEL C	BERKNER	BRIAN P
BECKERS	JAMES J	BERMES	DONNA M
BEDDES	DAVID E	BERMES	JAMES L
BEDDES	SPENCER C	BERNHARDT	DONNA A
BEDDES	MATTHEW T	BERNHARDT	ROBERT J
BEEBE	RHEA L	BERNHARDT	WILLIAM J
BEELER	MARK W	BERTHOUD	WILLIAM
BEELER	LOUIS F	BERTRAND	RICHARD R
BEERS	GREG	BERUBE	CRAIG S
BEJOT	ARNOLD J	BERUMEN	MITCHELL T
BEKEL	LON	BERVE	JIM
BELCHER	R HERBERT	BESEL	JOLITTA A
BELK	DANIEL J	BESEL	DENNIS L
BELL	RANDALL	BESEL	KENNETH R
BELL	JOHN	BESEL	ROBERT C
BELLE	RICHARD D	BESSELMAN	GERALD M
BELLEW	VICKI L	BEST	LES W
BELLINGER	RICK	BEST	RICHARD R
BELTRAN	IGNACIO P	BEST	DENNIS
BENDER	GREG L	BEST	KENNETH H
BENDER	DONALD W	BEST PROPERTIES INC	
BENGTSON	LAWRENCE E	BESTLAND	HOWARD
BENNER	JACOB	BESTROM	LEE E
BENNER	GARY	BESTROM	LARRY R
BENNETT	ROBERT	BETTS	ALLEN A
BENNETT	JAMES D	BEVEN	KENNETH M
BENNETT	DENNIS	BEVEN	CINDY K
BENNETT	CAROL ANN	BEYERS	JAMES
BENNETT	KENNETH W	BICKFORD	WARREN R
BENSON	JEFF	BICKFORD	DON
BENSON	LYNN R	BICKLER	BONITA
BENSON	THOMAS L	BIEGEL	KEVIN B
BENTLEY	DONALD	BIES	GERALD P
BENTON	JEFF L	BIG DITCH COMPANY	
BENTZ	DAVE	BIG SKY AIRCRAFT INC	

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Last Name	First Name	Last Name	First Name
BIG SKY FLEA MARKET		BLOOM	WALDI F
BIG SKY HOME IMPROVEMENT		BLUE CREEK VOLUNTEER FIRE DEPT	
BIG SNOWY RESOURCES		BLUMER	ROBERT R
BIGLER	BONNIE	BLURTON	DENNIS E
BILL RAINS STUDIO INC		BLYTHE	RICHARD D
BILLINGS BENCH WATER ASSOC		BOAK	HAROLD E
BILLINGS LIVESTOCK COMMISSION		BOCHY	GREG A
BILLINGS SIGN SERVICES INC		BOELTER	TIM S
BILLINGS SOFTBALL ASSOCIATION		BOERSCHINGER	MATHEW
BILLMAN	FRANK A	BOGAR	KENNETH C
BILLMAN	ANTON	BOGGESS	SAMUEL D
BILLSTEIN	RONALD E	BOGGIO	PHILLIP H
BILYEU	DALE E	BOHNEN	LARRY V
BINANDO	JAMES	BOHNEN	LARRY V
BINSTOCK	LARRY	BOILEAU	MIKE P
BISHOP	ROBERT W	BOISSEAU	RICHARD R
BISHOP	ELIZABETH M	BOIT	ROBERT W
BISON BETTER BUILT		BOKUM	VICKI R
BISSONNET	MICHELE	BOLERJACK	FRANK L
BIZEK	DAVID	BOLEY	NAOMI
BJERKE	DUANE	BOLTON	KENNETH G
BJORDAHL	JEROME A	BOMAR	LEWIE
BLACK	GREG L	BOND	RALPH
BLACK	RICHARD L	BONGIANI	PAUL
BLACK	DAVID D	BONNEAU	FRED
BLACK	ALAN H	BONNEAU	WALLACE J
BLACK	JAMES E	BONSELL	JAMES E
BLACKBIRD	ELMER T	BOODRY	JANE
BLACKLEY	BRYCE	BOOTH	GARY
BLACKMORE	TONY	BOOTH	JON W
BLAIR	DONALD D	BORDEN	JOHN C
BLANK	FLOYD L	BORMANN	JON F
BLANK	STEVEN L	BOROWICK	LOUIS
BLANKENBAKER	CHARLES	BORTIS	BURDETTE O
BLANKENSHIP	THOMAS J	BOTCH	PHILIP
BLANKENSHIP	RICHARD D	BOTHWELL	TERRY M
BLANKENSHIP	BRYCE K	BOTTS	WALTER R
BLANKENSHIP	MARK J	BOUCHARD	RICK L
BLASKOVICH	STEVE A	BOURASSA	JON E
BLAZO	TRACY L	BOUWKAMP	MARVIN
BLEDSOE	JEREMY M	BOWE	ROBERT L
BLEE	RALPH	BOWEN	THOMAS W
BLEHM	JAMES A	BOWERS	JILL
BLINCO	VERNON	BOWMAN	JOHN
BLOME	ED H	BOYCE	PATRICIA R
BLOOM	WILLIAM	BOYD	JAMES D

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Last Name	First Name	Last Name	First Name
BOYD	ROBERT K	BROWN	SETH M
BOYER	JEAN G	BROWN	RICHARD E
BOYER	JAMES H	BROWN	BRIAN D
BOYER	GLENN R	BROWN	TROY D
BOYER	VERN S	BROWN	LARRY A
BRACE	DEBORAH A	BROWN	KEITH E
BRACKEN	DOROTHY J	BROWN	STEVE
BRADLEY	BOBBIE JO	BROWN	WILLIAM B
BRADSHAW	GARY	BROWNLEE	WILLIAM
BRADSHAW	KATHLEEN	BRUBAKER	RON M
BRAMMER	JESSE O	BRUCE	KEVIN
BRANSTETTER	LAWRENCE	BRUMFIELD	RAYMOND G
BRANSTETTER	LEE E	BRUMIT	CHARLES J
BRANSTETTER	LOU ANN	BRUMLEY	LEE R
BRASS	CURT A	BRUNSVOLD	JAMES & JANET
BRASWELL	LOUIS	BRUSKI	VICTOR C
BRATCHER	ARLEEN	BUCKLEY	MICHAEL J
BRAY	TRACY G	BUCKLEY	DENNIS F
BRAZER	GEORGE	BUDGE	GERALD L
BRENNAN	LAURENCE A	BUECHLER	STEVE
BRENNAN	JOHN J	BUECHLER	GARY L
BRENSDAL	LARRY	BUEHRING	JASON L
BRESTER	DENNY	BUENING	ALVIN F
BRESTER	GREG	BUENING	ALVIN L
BRESTER	KELLY	BUERKLE	SUSAN I
BREW	W F	BUERKLEY	CAROL
BREWER	TED K	BUFFINGTON	RAY
BREWER	DONALD J	BUIKEMA	ROBERT M
BREWINGTON	BRAD J	BULL ENTERPRISES	
BREY	ARNIE	BULLINGER	GERALD F
BRIDGER	BERT C	BULLIS	C LOWELL
BRIEN	CARLA	BULLOCK	DOUGLAS A
BRITTON	KENNETH L	BUNDY	BROCK D
BRITTON	STELLA P	BUNNELL	TED A
BROADBENT	DUANE A	BURBANK	GARY W
BROCK	KRAIG A	BURCH	HARLEY
BRODERSON	JUANITA	BURCHETT	DELMAR
BRODIE	MICHAEL H	BURCHETT TAX SERVICE	
BROKEN ARROW RANCH		BUREAU OF LAND MANAGEMENT	
BROOK	SANDY S	BURELL	DAN
BROOKS	CHARLES A	BURGER	DANNY L
BROOKSHIER	RICK	BURKHARDT	SHAWN M
BROSZ	ROD	BURKLEY	STANLEY
BROVEAK	DALE M	BURNARM	RONALD E
BROWN	DONALD M	BURNER	GLENN I
BROWN	R SCOTT	BURNETT	DARLENE L
BROWN	LARRY	BURNS	ROBERT D
BROWN	GORDON E	BURNS	JERRY A
BROWN	DAREN O	BURRIS	WAYNE
BROWN	RUSSELL G	BURT	LOUIS

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Last Name	First Name	Last Name	First Name
BURTON	BEE	CARTER	LON D
BURTON	BEE	CARTER	GARY E
BUSCH	CRAIG	CARY	LAWRENCE E
BUSCHETTE	STEVE	CASE	PATRICIA J
BUSENBARK	SAMMY A	CASE	WILLIAM M
BUSH	GALE	CASEY	MICHAEL J
BUSH	MARK	CASEY	ROBERT J
BUTLER	EDWARD D	CASPER	DALLAS D
BUTLER	BRUCE C	CASSIDY	JAMES W
BUTLER	SHERI	CASSIDY	WILLIAM L
BUTLER	JAMES W	CASTEL	BRIAN I
BUTTERFIELD	DALE	CASTER	RICHARD
BUYS	DUANE	CASTER	JACK
BYE	DAVID	CASTER	JAY G
BYRNE	TIM	CASTLEBERRY	ROBERT A
C & B HAY GRINDING INC		CASTO	JAMES S
C & H BUILDERS INC		CATLIN	DAN A
CABBINESS	LENA	CATTLE DEVELOPMENT CTR LLC	
CAIN	JAMES M	CAVE	W DEAN
CAIN	WAYNE L	CAYTON	ZACHRY S
CAIN	RODNEY	CEBULL	BRIAN
CALDEIRA	DAVID A	CELLAN	DAVID
CALDERWOOD	PAT A	CELLMER	LAWRENCE W
CALDWELL	KELLY M	CELLMER	STEVEN L
CAMERON	JESSIE L	CENTRAL ACRES CHRISTIAN SCHOOL	
CANTIN	T J	CERKONEY	MARVIN
CANTU	SERAPHINE	CHAMPION	MARTHA
CANYON CREEK SCHOOL #4		CHAMPNEY	KIM B
CAPP	RAY M	CHANCE	NATHAN D
CAPRA	MICHAEL	CHANDLER	JACK E
CARD	BRUCE E	CHANDLER	CECIL R
CARD	DICK R	CHAPEL	JAMES
CARDWELL	FRANK	CHAPEL OF HOPE	
CARDWELL	ELMER W	CHAPIN	LEONA J
CARKEEK	TOM	CHAPMAN	RICHARD E
CARL	RAYMOND K	CHARBONNEAU	R W
CARLSON	RON	CHARLES	DAVID L
CARLSON	SCOTT A	CHARLTON	VINCE D
CARLSON	DAVID	CHARLTON	JAMES
CARLSTROM	MARK	CHATRIAND	ROBERT L
CARNS	ROBERT	CHELGREN	GARY
CARPENTER	GEORGE R	CHENOWETH	DARRELL E
CARPENTER	RONALD R	CHERRY	MERLE
CARR	ROBERT H	CHESTER	TRUDY
CARROLL	TOM W	CHIRRICK	GREG L
CARROLL	JAMES A	CHORIKI	RAYMOND
CARSON	KATHLEEN A	CHRISTENSEN	RICHARD C
CARSTENSEN	MARTHA L	CHRISTENSEN	KEAN D

Last Name	First Name	Last Name	First Name
CHRISTENSON	DALE	COLTER	DONALD
CHRISTIAENS	MARIA J	COMBS	T SCOTT
CHRISTIANSON	MISTY J	COMBS	THOMAS G
CHRISTIANSON	TERESE A	COMMUNICATION ENHANCEMENT LLC	
CHRISTMANN	ALLEN H	COMPLETE INSULATION	
CHRISTOPHERSEN	VICKI G	COMPTON	CONLEY E
CHURCH OF GOD OF PROPHECY		CONCRETE CONSTRUCTION COMPANY	
CICIERSKI	JEFFREY L	CONITZ	JESS W
CIMRHAKL	ELIZABETH A	CONNAGHAN	ROBERT L
CLARIN	DONITA R	CONRAD	HARVEY J
CLARK	ROY L	CONROY	THOMAS
CLARK	ERNIE L	CONSANI	LEONARD
CLARK	BOBBIE	CONTRERAZ	HENRY
CLARK	JAMES R M	COOK	GALEN L
CLARK	DOUGLAS M	COOK	CHARLES A
CLARK	DANIEL E	COOK	CORNELIUS
CLARK	DEAN L	COOK	DARRELL J
CLARK	RUSS C	COOLEY	ROBERTA K
CLASSIC DESIGN HOMES		COOMBS	BOB W
CLAUSSEN	VICKIE G	COOMBS	JOHN W
CLAY	FRANK	COONEY	STEPHEN L
CLEARY	WILLIAM D	COONS	DAVID
CLEVELAND	GARY A	COOPER	RICHARD H
CLEVENGER	LOREN L	COOPER	TOM A
CLEVENGER	JAMES K	COOPER	PATRICIA L
CLICK	C J	CORBIN	LINDA
CLIFFORD	LARRY J	CORCORAN	JAMES
CLIFTON	ELLEN B	CORNEAU	WILFRED
CLINGENPEEL	JOSEPH L	COLES	DAVID L
CLOSE	BRETT C	COLLIER	KEN L
CLOUSE	LARRY R	COLLINS	KELLY P
CLYDE'S PLACE		COLTER	DONALD
CMG CONSTRUCTION INC		COMBS	T SCOTT
CMW CONSTRUCTION		COMBS	THOMAS G
COCHRAN	JAY M	COMMUNICATION ENHANCEMENT LLC	
COE	JIM R	COMPLETE INSULATION	
COLARCHIK	PATRICK L	COMPTON	CONLEY E
COLDEN	WAYNE	CONCRETE CONSTRUCTION CO.	
COLE	SCOTT E	CONITZ	JESS W
COLE	MARTIN D	CONNAGHAN	ROBERT L
COLEMAN	TIFFANI	CONRAD	HARVEY J
COLEMAN	RALPH L	CONROY	THOMAS
COLEMAN	MARION V	CONSANI	LEONARD
COLES	DAVID L	CONTRERAZ	HENRY
COLLIER	KEN L	COOK	GALEN L
COLLINS	KELLY P	COOK	CHARLES A

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Last Name	First Name	Last Name	First Name
COOK	CORNELIUS	CREEK	LLOYD D
COOK	DARRELL J	CRELLIN	RANDALL
COOLEY	ROBERTA K	CREWS	MICKEY
COOMBS	BOB W	CRICHTON	ROBERT E
COOMBS	JOHN W	CRICK	GARY R
COONEY	STEPHEN L	CRILLY	DON
COONS	DAVID	CRILLY	IRENE IONA
COOPER	RICHARD H	CRITELLI	TIM A
COOPER	TOM A	CRITELLI	ROCCO J
COOPER	PATRICIA L	CRITELLI COURIERS	
CORBIN	LINDA	CROFT	HARRY
CORCORAN	JAMES	CROMWELL	DEAN C
CORNEAU	WILFRED	CROSMER	DAVE F
CORNERSTONE COMMUNITY CHURCH		CROSS	KERI A
CORPORATE FUND MANAGEMENT		CROSS	GREGORY
CORTEZ	TINA M	CROSSROADS BAPTIST CH	
COSCIA	DON A	CROUSE	LARRY D
COSSITT	JERRY W	CROUSE	LAWRENCE
COSTER	DONELLE L	CROUSE	CHARLES A
COULTER	CLARKE	CROUSE	JAMES R
COUNTRY SUBDIVISION WATER		CROWLEY	JIM
COUNTY WATER DISTRICT		CROWN PARTS & MACHINE	
COURTNAGE	LYLE A	CRUZAN	MICHAEL G
COURTNEY	M DALE	CUELLAR	JERI L
COVALL	STEPHEN T	CULLINAN	FRANK F
COVINGTON	RICHARD W	CUMMINGS	KRISTOPHER M
COWAN	NEAL D	CUMMINS	RUDOLPH J
COWDIN ESTATES		CUNNINGHAM	THOMAS P
COWEE	PATSY	CUNNINGHAM	LARRY D
COX	NANCY L	CUNNINGHAM	JAMES F
COX	DAVID L	CURFMAN	DAVE L
COX	JEAN C	CUSKER	NOELA R
COX	GARELD	CUSTER	BRUCE
COX	JIM	CUSTER CEMETERY	
CRABLE	GARY P	CUSTER COMM CHURCH	
CRACKENBERGER	CURT	CUSTER FIRE DEPARTMENT	
CRADDOCK	MIKE G	CUSTER POST OFFICE	
CRAGO	BILL	CUTLER	JOHN C
CRAIG	BRADLEY D	CWALINSKI	WALTER A
CRAIN	MICHAEL R	CYBULSKI	TIM
CRAMER	DON R	CYPHERS	SHIRLEY B
CRANFORD	LEONARD A	CZARNY	TERRY
CRAWFORD	TOM	D BAR Y RANCH	
CRAWFORD	JAMES L	DAEM	RONALD A
CRAY	LESLIE	DAHL	TED A
CRAY	LESLIE G	DAHL	LINDA L
CREECY	J L	DAHL	MATTHEW K
CREEK	KERMIT	DAHL	JOHN F

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Last Name	First Name	Last Name	First Name
DALKE	DAVE	DEGENHART	ALBERT J
DALLMAN	DALE E	DEGENHART	EVELYN
DAMJANOVICH	CORBIN	DEICHL	LEO A
DANDREA	WAYNE S	DEINES	IRENE L
DANGERFIELD	REGINALD	DEINES	JUDY D
DANIELS	JANICE	DEINES	DALE
DANTIC	MIKE J	DEINES	WILLIAM L
DARFLER	PATTI	DEINES	WILLIAM
DARKENWALD	S A	DEITSCH	GEORGE P
DARNIELLE	DAVID E	DEITZ	JON D
DARRAH CORPORATION		DELAWARE	ROCKY L
DAUM RANCH		DELCAMP	DAVID
DAUPHINAIS	MARCI L	DELCAMP	MACK
DAVENPORT	JAMES H	DELP FAMILY TRUST	
DAVIDSON	JOSH J	DEMARAY	RICHARD D
DAVIS	DONALD L	DEMARAY	GORDON J
DAVIS	GARY M	DEMAREE	NORRIS J
DAVIS	COREY	DENNEHY	PAUL J
DAVIS	STUART L	DENNEY	CRAIG R
DAVIS	ROBERT E	DENNING	KENNETH
DAVIS	PETE J	DENNIS	DANA A
DAVIS	JAMES R	DENNY	LESLIE L
DAVIS	ARLETHA E	DERBY	JIM E
DAVIS	GARY C	DERHEIM	MARVIN
DAVIS	CAROL M	DERTING	STEVE L
DAVIS	RAYMOND P	DESJARLAIS	SHARON L
DAVIS	MICHELLE L	DETIENNE & SON	
DAVISON	JANET	DETLING	LEO
DAYLIS	GEORGE A	DETRICK	DALE W
DCOLBURN	STEPHEN G	DETTWILER	GARY G
DE BAR	CANDACE	DEVENER	MARY JO
DE CRANE	THOMAS A	DEVITT	JANICE A
DE FRANCE	FRED J	DEVITT	CYNTHIA H
DE GRAND	DANIEL D	DEVIVIER	DICK
DE KLYEN	PEGGY J	DEVRIES	DARIN N
DE LEEUW	MONTEE L	DEWALD	ROBERT L
DE VERNIERO	JAMES C	DEWING	DEAN
DE VRIES	RICHARD	DEYLE	DANNI P
DE VRIES	RICHARD	DEYOUNG	E R
DE VRIES	RICHARD D	DIAL	KEITH W
DE VRIES	BRUCE	DIAMOND B LIVESTOCK	
DE VRIES	DAVID C	DIAMOND X FARMS INC	
DEAN	RICHARD W	DIAZ	JENNY
DEASON	C W	DICK	SHIRLEY M
DECKER	STANLEY F	DICUS	PAT
DECKER	DICK	DIENHART	WAYNE L
DEGELE	DALE J	DIERCKS	LEONARD A
DEGELE	ROBERT G	DIERENFIELD	RACHEL
DEGENHART	ROY A	DILLEY	RICHARD H
DEGENHART	RICHARD D	DILLON	CHARLES H
DECKER	STANLEY F	DIXON	PAUL

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Last Name	First Name	Last Name	First Name
DIXON	LYNN H	DUNN	ROBERT B
DOANE	SHARON M	DUNNING	MARK
DOBITZ	CHRIS L	DUNNING	FRANCIS E
DOELY	STEPHEN H	DUPUIS	SUZANNE
DOERR	NANCY K	DURAND	DARLENE M
DOLAN	MIKE M	DUSTIN	JUDITH
DOLECHECK	FRANK J	DUSTIN	JAMES
DOLPH	DOUG K	DVORAK	NORMAN L
DOMPIER	ROBERT L	DVORAK	DOUG
DONAHUE	TIM W	DVORAK	DONALD J
DONAHUE	MICHAEL F	DVORAK	RANDI D
DONOVAN	VICTOR J	DVORAK	DORAN
DOOLEY	MICHAEL P	DYK C CONSTRUCTION CO	
DORHAUER	ALAN	EAGLE ROCK GOLF COURSE	
DORRIS	APRIL L	EAMES	POLLY H
DOTSON	DALE A	EASLEY	LORAYN M
DOUBLE L RANCH		EASTLICK	G D
DOUCETTE	MARK S	EASTON	DON
DOVE	WILLIAM C	EASTWOOD ESTATES	
DOWDY	DICK	EATON	BREE D
DOWNER	MARJORIE J	EATON	DEXTER A
DOWNING	LEE	ECHERD	ROBERT S
DOWNS	WILLIAM A	ECKHARDT	EUGENE E
DOWNS	RALPH M	EDAM	DALE
DOWNS	DAN	EDDY	THOMAS E
DOWNS	ERNEST	EDGAR	GENE E
DOWNS	JUSTIN P	EDISON	GEORGE
DOYLE	ROBERT M	EDWARD	BARRY M
DOYLE	ERROL D	EDWARD RANCHES INC	
DRAGOO	NATALIE L	EDWARDS	LLOYD M
DREESZEN	DOUG	EDWARDS	JULIE A
DREW	MICHAEL J	EDWARDS	ROB R
DREWRY	WADE R	EENHUIS	SCOT D
DRINGMAN	ERIC R	EGAN	WAYNE H
DRINKWALTER	KAREN J	EGAN	SHAWN L
DRINKWALTER	DONNA	EGGART	JUSTIN T
DRINKWALTER HORSESHOEING		EGGE	PETERA
DROSS	WHIT	EGOLF	GEORGE
DU CHARME	PAUL J	EHLENBURG	JOE P
DUBEAU	ED	EHLERS	PHILIP H
DUBELL	CHARLES	EHRLICK	GUY
DUBS	LOUIS C	EICKHOFF	HELEN G
DUKART	TERRY L	EIDE	STEVE M
DUKE	ERIC R	EINARSON	RICHARD
DUNBAR	ERWIN D	EISENBRAUN	FRELIN G
DUNCAN	EARL A	EISENMAN	STANLEY
DUNCAN	JOYCE	EISENMAN	WAYNE V
DUNKIN	EVELYN L	EISENMAN	LANCE J
DUNKLEE	DENNIS	EKLE	TIGE G
DUNLAP	DANIEL J	EKLUND	THEODORE E
DUNN	TONY P	EKWORTZEL	RICK

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Last Name	First Name	Last Name	First Name
ELDRED	ROBERT	EVIG	ROSS
ELDRIDGE	SCOTT C	EWALT	KENT
ELENBURG	GARY L	EWEN	KEITH
ELESON	IRWIN J	EWEN	CYNTHIA
ELLEDGE	F BRUCE	EWEN	FORREST E
ELLIOT	CLARKE	EXPRESS PIPELINE LLC	
ELLIOT	DEAN H	EYRE	JERALD
ELLIOTT	GARY	F P INC	
ELLIS	ARLAN	FACER	WILLIAM E
ELLISON	LIONEL S	FACHING	ASHLEY L
ELVESTROM	JOHN O	FADRHONC	DENNIS
EMICK	PATRICK C	FAITH CHAPEL	
EMINETH	JAMES	FALLANG	TODD D
EMINETH	TED	FARK	WILBURN F
EMINKAY TRUSSES AND COMPONENTS		FARNHAM	STANLEY
EMLIN INC		FARRINGTON	DALE E
EMMONS	MARY J	FASCHING	LEE ROY
EMMONS	MARY ANN	FAUST	CHESTER
EMTER	COREY M	FAUTH	KURT J
ENGDAHL	DUANE R	FEDERICO	CARMEN M
ENGEN	DAVID D	FEHRINGER	NEAL
ENGLISH	H ELWOOD	FEIST	JOSEPH M
ENNIS	TIMOTHY	FELMLEE	GEORGE
ENNIST	FRED R	FELMLEE	DWIGHT S
ENSLEY	MARK P	FELS	HAROLD L
ENSTROM	GARY G	FERALIO	DOMINICK
EQUALL	DUANE	FERCH	WILLARD A
ERB	SHARON I	FERCHO	LEO
ERB	STEVEN M	FERGUSON	ABBY
ERB	RODNEY A	FERGUSON	LARRY W
ERBEN	WILLIAM F	FERGUSON	ROY E
ERHART	VIOLA D	FETTER	MATT E
ERHART	WAYNE	FETTIG	STEVE R
ERICKSON	EDWARD E	FETTIG	ROGER J
ERICKSON	ROCKY	FICK	RICHARD E
ERPELDING	JOSEPH	FIECHTNER	STEVE R
ERREBO	MARK T	FIELD	DAVID J
ERSKINE	THOMAS	FIGGINS	GEORGE
ERVIN	MICHAEL E	FIGGINS	RICHARD E
ESCHLER	ERIC B	FIKE	WADE T
ESHLEMAN	JOHN	FIMRITE	BRADLEY M
ESPELAND	RICHARD	FINCH	BRANDON J
ESPY	JIM	FINK	GLENN R
ESSER	ROBERT J	FINN	RALPH
ESSEX	LYNN S	FINSTAD	ERIC
EVANGELINE	MARK	FISCHER	TOM A
EVANGELINE	JAMES P	FISCHER	DOUG J
EVANS	PHILIP M	FISCHER	ERVIN B
EVENSON	JERRY D	FISHER	DAVID R
EVERAERT	R ED	FISHER	GEORGE A
EVERGREEN ESTATES HOME OWNERS		FISHER	JAMES L.

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Last Name	First Name	Last Name	First Name
FISHER	ED P	FOSTER	JOSEPH W
FISHER	CRAIG M	FOSTER	JOE W
FISHER	ED L	FOURNIER	JOSEPH C
FISHER	ROBERT	FOUST	RICHARD L
FISHER	SHARON	FOUTS	JOE D
FISHER	RICHARD	FOWLER	CHARLES
FISHER	DON	FOWLER	LANCE
FISHER	JOHN W	FOWLER	SHANE R
FISHER	MICHAEL C	FOX	DARRELL
FISHER	BRUCE W	FOX	MARK
FISHER SAND & GRAVEL		FOX	TERRY
FITCH	JEFFREY T	FOX	ROBERT
FITCH	ROBERT G	FOX	DARLENE
FITCH	CURTIS R	FOX	ROY R
FITZGERALD	JAMES C	FOX	LARRY W
FIVE C'S PARK & POOL		FOX	PHILLIP
FIX	RYAN T	FOX	JOHN WILLIAM
FIX	LORRAINE M	FOX	J R
FLAHERTY	DENNIS	FOX	DAVID L
FLANZE	W CARL	FOX	JOYCE
FLAT LIP	ARCHIE K	FOX	BONNIE L
FLATTUM	CAROL E	FOX	JAMES H
FLEGAL	JAMES M	FOX	JESSE L
FLEMING	JEFFREY B	FOX	HARVEY E
FLETCHER	DICK L	FOX	RICHARD A
FLIPSE	STEVE D	FOX	KEVIN
FLOCK	KEVIN R	FOXE	JERRY D
FLOHR	GARY D	FRADET	JERRY
FLOYD	STAN V	FRALEY	JULIE
FLY CREEK ANGUS INC		FRANCIS	CARL
FOGLE	LYLE	FRANCK	STEVE J
FOGLE	D ROGER	FRANCZYK	GREG P
FOLEY	A L	FRANK	CLAYTON
FOLKERTS	ARTHUR	FRANK	WARREN
FOLLMER	GLENN A	FRANK	LEE ROY
FOOS	DONALD A	FRANK	SAM
FOOS	CLARENCE	FRANK	RIENHOLD
FOOS	SHEILA Y	FRANK	GARY G
FOOTTIT	RICHARD	FRANK	HAROLD G
FORD	RONALD G	FRANK	LESLIE S
FOREMAN	KENNETH	FRANK	DOUGLAS D
FOREMAN	CURTIS	FRANK	JAKE
FORNSHELL	MIKE L	FRANK	RONALD E
FORTIER	JOHN F	FRANK	RONALD D
FORTUNE	JAMES	FRANK	ROD D
FORTY-EIGHTH STREET WEST		FRANK	LAURA BRESTER
FORWOOD	PATRICIA	FRANK	LARRY
FOSJORD	JOHN E	FRANK	LESLIE D
FOSS	JASON J	FRARE	DENNIS H
FOSS	GARY	FRASER	DANNY

Last Name	First Name	Last Name	First Name
FRASURE	RANDALL	GASCHK	VICKI K
FRAZIER	GARY G	GASPER	JOE L
FREDERICK	R LE ROY	GATCH	DAN N
FREDERICK	A L	GATLIN	COURT D
FREDERICKS	D J	GEBHARDT	VERN L
FREEMAN	MARJORIE M	GECK	DARRIN A
FREIER	WAYNE E	GEE	LESTER C
FREITAG	MARY	GEERING	ANNIE
FREIVALDS	PETER	GEERTZ	WOODY M
FRENCH	GLENN	GEHRING	GARY
FRENCH	STEVE H	GEHRING	ALBERT
FRENCH	STEVEN L	GENEX / HAWKEYE WEST	
FREY	DIXIE L	GEORGE	NORMAN M
FREY	MARILYN F	GERBER	BEN H
FRICKEL	RANDY J	GERBER	DONNA R
FRICKEL	DAVID R	GERSHMEL	GRANT L
FRICKEL	GERALD	GIBSON	KAREN M
FRICKEL	LINDA K	GIESER	BERNIE
FRICKS	DWAYNE	GIESICK	WILMA
FRIED	KERWIN W	GIESICK	DAVID W
FRIELING	PHILLIP J	GIESICK	ROBERT G
FRIESEN	DENNIS R	GILBERT	VELNA E
FRIESEN	ROBERT E	GILBERT	TERRI
FRIEZ	LARRY	GILBERT	HAROLD L
FRISON	TERRY	GILBERTSON	ESTHER E
FRITEL	GARRY J	GILBRAITH	BRIAN E
FRITZ	SHADD	GILES	ANATOLE S
FRITZ	ERNIE L	GILLES	J E
FRITZ	ROBERT L	GILLIS	MARTIN W
FROELICH	SCOTT A	GILLITZER	ROMAN A
FROMDAHL	ROBERT R	GILLNER	CLIFFORD A
FROST	BOB L	GILREATH	KENNETH
FRYETT	DARCY R	GILREATH	TOM
GABEL	ROY	GILREATH FARM	
GABEL	BETTY	GIONO	MARK T
GABEL	RANDY	GIOVETTI	PETE C
GABEL	MICHAEL T	GIRARDIN	CARL W
GABLE	DALE J	GIRARDOT	LARRY L
GADBERRY	DANIEL	GIVEN	GANEL G
GAIRRETT	KENNETH P	GLASGOW	GARY E
GALLAGHER	BARBARA M	GLASGOW	RAY
GALLAND	MIKE	GLASSER	TERESA J
GALLE	HUGO	GLATT	ARNIE A
GAMBLE	CHARLES E	GLEASON	ARLAND Y
GANGSTAD	PERRY	GLEN	PATTY V
GAPPA	STANLEY W	GLENN	EVERETT E
GARCIA	DARELL J	GLIKO	JERRY J
GARDNER	ROBERT C	GNEITING	TERENCE A
GARDNER	STEVEN	GODDARD	CHARLES
GARDNER	GREY C	GODFREY	SCOTT L
GARRISON	PAT	GODIJOHN	CINDY L

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Last Name	First Name	Last Name	First Name
GODWIN	TED P	GREEN	WILLIAM S
GOFF	MICHAEL M	GREEN	BRAD
GOGGINS	JACK	GREENE	HENRY
GOGGINS	JOE L	GREENFIELD	JEFF
GOGGINS	PATRICK K	GREENO	ALVIN L
GOHL	PENNIE D	GREENWALT	KEVIN
GOHR	CLAY R	GREENWOOD	THOMAS R
GOINS	DICK	GREENWOOD	ROBERT
GOLDBERG	KURT M	GREGORY	TIMOTHY E
GOLDEN EAGLE WATER USERS ASSOC		GREWELL	EUNICE E
GOLL	CLARENCE	GREWELL	JAMES
GOLLER-WILLIS	JACKIE L	GREWELL	RICHARD H
GOMEZ	AMBROSE	GREWELL	RICHARD E
GONE	MARILYN J	GREWELL	JOHN L
GONION	ROBERT L	GREYN	DANIEL S
GONYEA	JOHN N	GRIBBEN	TERRY S
GONZALES	KATHERINE D	GRICE	GEORGE E
GONZALES	RON R	GRICE	HERBERT P
GONZALES	VINCENT	GRIESER	EMILIE C
GONZALEZ	JESSE Y	GRIFFITH	MARK A
GOODALE	GARY	GRIMSRUD	RON A
GOODMAN	JERRY	GRISMER	JOHN W
GOODMAN	STEVEN H	GROSCOP	DENNIS D
GORALCZYK	KAREN M	GROSS	MYRON S
GORDON	TERRY	GROSSKOPF	RICHARD L
GORDON	JAMES R	GROTBO	JOHN A
GORDON	BEVERLY	GROUT	ANDREW J
GOSSACK OLSON	NANCY K	GROVE	BETTY J
GOTTULA	JOHN E	GROVIJAHN	JEFF L
GRADWOHL	ROBERT H	GRUNENFELDER	MICHAEL
GRAF	LOREN T	GRUNST	MARK
GRAF	PAUL	GRUSING	HAROLD
GRAHAM	DAVID B	GUDGELL	DONALD W
GRAMMENS	ED	GUENTHNER	TIM A
GRAMMENS	TIM	GUENTHNER	THEODORE B
GRAMMENS	ROBERT	GUILFOYLE	ROBERT J
GRANADA	GENNA B	GULBRANDSON	STEPHEN D
GRANDPRE	TIMOTHY	GULLARD	BARBARA J
GRANT	DARRIN T	GULLETT	DENNIS W
GRANTHAM	EZRA	GUM	BEN F
GRANTZ	LARRY E	GUM	BARRY
GRAUBERGER	JOHN K	GUNDERSON	JOHN R
GRAVES	ALAN C	GUNDERSON	GERALD A P
GRAVES	DAVID E	GUNDLACH	LEWIS A
GRAY	VIKKI L	GUNLOCK	SAM W
GRAY	ROB	GUNLOCK	SAM W
GRAY	DAN D	GUNN	MARY L
GRAYSON	LYLE	GUNN	RONALD W
GRAYSON	REID E	GUNN	MARSHA L
GREEN	JOHN W	GUNNELS	RALPH
GREEN	DAVID D	GUNSCH	ROY

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Last Name	First Name	Last Name	First Name
GUNTER	KARI G	HAMMER	KEITH
GUNTHER	GLENN A	HAMMERSMARK	MARVIN M
GUSTAFSON	BETTE M	HAMMOND	L CLEVE
GUSTIN	KENNETH J	HAMMONS	DANNY B
GUTIERREZ	RODOLFO N	HAMMONTREE	LUETTA M
H O T EXPRESS		HAMPLE	SHIRLEY
HAAGENSON	ANDREA C	HAMPLE	KELLY
HAAS	ESTHER M	HANCE	KEVIN W
HAASE	RITA A	HAND	RANDY
HACKMAN	STEVE C	HANDEL	NORMA R
HACKMAN	SHAWN A	HANDO	SHAWN P
HADLEY	DANIEL R	HANKEL	LARRY
HADLEY	YVONNE M	HANKEL	FRED L
HAFF	RICH	HANKS	GARY
HAFNER	GREGG A	HANNA	WILLIAM M
HAGAN	PAT	HANNAH	KAREN S
HAGAN	MARY ANN	HANNAH	STEVE
HAGEL	KEN	HANSEN	CARL
HAGEL	FRANK L	HANSEN	ALAN E
HAGEL	DOUGLAS M	HANSEN	JAY R
HAGEMO	MONTE A	HANSEN	TODD C
HAIGH	JOHN R	HANSEN	E KATHLEEN
HAILSTONE	JOHN	HANSON	LINDA L
HAKE	OWEN F	HANSON	JEWEL C B
HALA	RICHARD V	HANSON	COLLIN J
HALE	MARK A	HANSON	ED C
HALE	ROBERT S	HANSON	DIANA L
HALE	VERLIN C	HANSON	E R
HALL	JAMES W	HANSON	WINI L
HALL	KENNETH E	HANSON	MICHAEL H
HALL	MICHAEL W	HANSON	DALE E
HALL	RICHARD N	HANSON	LEO R
HALL	GEORGE A	HANSON	BRIAN E
HALL	RUSSELL V	HANSON	DEG
HALL	GEORGE A	HANSON	PAUL D
HALL	MARILYN L	HANSON	ARDIS L
HALL	PATRICIA A	HANSON	CASEY M
HALL	CHARLOTTE R	HARAKAL	STEVEN J
HALL OUTDOOR ADVERTISING		HARFBAUGH	EILEEN T
HALLAND	DALE L	HARCHARIK	RON W
HALLING	RICHARD D	HARDEN	DEBBIE D
HALVERSON	JACK J	HARDEN	DONALD L
HALVERSON	JIM R	HARDT	BROS
HAMAN	ROGER	HARDT	RAY
HAMAN	CARY J	HARDT	DICK
HAMAN	JIM E	HARDT	BRAD
HAMBURG	RUSSELL C	HARI	CHERYL V
HAMILTON	JUSTIN R	HARI	ROBERT F
HAMILTON	COLIE R	HARMON	JAMES T
HAMM	BRUCE	HARMON	WANDA J
HAMMATT	GENE	HARMS	GAIL S

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Last Name	First Name	Last Name	First Name
HARPER	MILO F	HAYS	WENDELL R
HARPER	JAY L	HAZEN	HARVEY R
HARRELL	DAREN T	HEALEY	JERRY J
HARRINGTON	VICKY J	HEATH	RICK
HARRIS	PHIL	HEATON	BOBBY
HARRIS	JON D	HEBENER	CLARICE
HARRIS	LAURA M	HECKER	GARY
HARRIS	JOHN H	HECKER	ROGER N
HARRIS	RICHARD J	HECKER	JOEL B
HARRIS	MEL	HECTOR	ROBERT M
HARRIS	KATHLEEN R	HEDGES	DONALD E
HARRIS	JACK	HEDGES	GARY R
HARRIS	EVA M	HEDGES	BERNARD F
HARRIS	DAVID D	HEDIN	MERLYN J
HARRIS	ROB W	HEDRICK	JOSH
HARRUFF	GLENN I	HEDRICK	BERNIE
HARSTAD	ROBYN	HEEG	JASON D
HART	THOMAS E	HEGER	JIRI
HART	BETTY	HEGG	ROBERT M
HART	ANTHONY W	HEIDEMA	JACK O
HART	WILMER D	HEIDEMA FARMS INC	
HARTLE	SHANNA R	HEIGHTS ASSEMBLY OF GOD	
HARTMAN	MELISSA E	HEIMBICHNER	MARK
HARTMAN	KEITH T	HEIMBICHNER	MARIAN E
HARVEY	KENNETH D	HEIMBUCK	BARBARA L
HARWOOD	BEN P	HEIN	MARIE
HARWOOD	MONTY J	HEIN	KENNETH R
HASH	CRAIG E	HEIN	BETHANY M
HASH	RICHARD	HEIN	JAMES L
HASKINS	JAMES	HEIN	BILL
HASSETT	BARBARA L	HEIN	BRIAN A
HAUBER	EDWARD E	HEIN	RUTH M
HAUBER	ED	HEINZEROTH	MARK A
HAUBER	GEORGETTE	HEISER	MARY
HAUGHEY	FLORA	HEISER	LAWRENCE D
HAUGSE	VERNON	HEITZ	JASON T
HAUPT	JEANNE A	HELFRICH	JOHN R
HAVERLAND	TED	HELGESON	ROBERT E
HAVIG	DONALD R	HELGESON	KEN D
HAWKE	ROBERT G	HELGESON	BERT A
HAWKINS	GARY	HELLAND	LAVANCH P
HAWKS	HOWARD	HELLMAN	JERRY B
HAWORTH	LAWRENCE	HELM	WILLIAM
HAWTHORNE	EDWARD R	HELTERBRAN	RICHARD P
HAYDEN	HAROLD G	HELVIK	KARL M
HAYES	ALAN C	HELZER	RANDY L
HAYES	ROBERT M	HEMBD	JOHN D
HAYNES	GEORGIA R	HEMPHILL	GINGER D
HAYNES	C SAM	HENCKEL	RON
HAYS	WENDELL H	HENDERSON	RONNIE

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Last Name	First Name	Last Name	First Name
HENDERSON	CARL W	HILL	ADAM
HENDERSON	EDWARD D	HILL	BRENDON S
HENDERSON	FORREST W	HILL	LYLE F
HENGEL	PETER P	HILL	JAMES H
HENKE	GERALD A P	HILL	MARJORIE R
HENKEL	KEVIN P	HILL	KEVIN
HENLEY	EARL E	HILL	DEBORAH L
HENMAN	JACE D	HILL	WALLACE
HENMAN	WALLACE L	HILL	ROBIN E
HENNEK	BERNARD	HILL	WESLEY W
HENNING	KARL	HILLEBOE	JAMES S
HENRICHS	LESLIE E	HILLESLAND	TOM
HENRY	SHASTA K	HILLIARD	ROBERT
HENRY	RON D	HINE	GLEN F
HENRY	THOMAS	HINGST	AMY L
HENRY	SHANNA D	HINKLE	VICTOR
HENSLEY	CHARLES E	HINKLE	ELIZABETH
HENSLEY	TERRI	HINMAN	RICK H
HENTZ	THOMAS C	HINRICHS	GARY R
HERBERG	JON	HINTHORNE	TOM
HEREIM	CHARLES E	HINTT	KELLY S
HERGETT	GERALD R	HINZ	JERRY
HERMAN	T J	HIRNING	DAVID J
HERMAN	RON A	HIRSCH	ELMER
HERMAN	DAN L	HIRSCHFELT	TERRY
HERMAN	DEE	HIRSCHI	CHANDRA N
HERMAN	MARGIE G	HIRSCHI	GORDON
HERNANDEZ	FRANK P	HIRSCHI	BRET W
HERREN	GARY R	HOAGLAND	R NEIL
HERT	TIM D	HOBAN	JAMES
HERT	FRANCIS	HOBAN	LARRY
HERT	GARY	HOBAN	BRIAN
HERTZ	JAMES	HOBAN	RODNEY P
HERZOG	JUDITH B	HOCHHOLDINGER	WOLFGANG
HESER	WILLIAM N	HODGES	GLADYS L
HEUPEL	WILMER	HODGES	RICHARD S
HEUPEL	MYRON	HODGSON	NORMA
HEYD	LORENZ	HODNIK	JAMES L
HEYING	CRAIG R	HOECKELBERG	HERBERT
HEYN	LOIS R	HOEFER	RICH A
HIBSCHER	JAMES	HOEFER	WILLIAM
HICKSON	WILLIAM J	HOEHNE	MARY G
HICKSON	WILLIAM V	HOENKE	MICHAEL D
HICKSON	BRENDA L	HOFER	ROBERT J
HIGGINS	CARL	HOFER	DAVID J
HIGLEY	JAMES J	HOFER	DON L
HILDERBRAND	MARTELL J	HOFER	CHRIS R
HILDRETH	BRIAN	HOFERER	CHARLES
HILDRETH	BRET S	HOFERER FAMILY RANCH ING	
HILL	NICK R	HOFFERBER	JOE A
HILL	ROBERT J	HOFFERBER	JAMES R

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Last Name	First Name	Last Name	First Name
HOFFERBER	DANIEL R	HOPKINS	ANGIE
HOFFMAN	GEORGE P	HOPKINS	DARRELL
HOFFMAN	PHIL M	HOPKINS	GERALD L
HOFFMAN	ERIC W	HOPPEL	BARBARA A
HOFFMAN	DAVE A	HOPPMAN	JOSEPH
HOFFMAN	FRED	HORN	DAVID A
HOFFMAN	DIANE	HORN	JAMES F
HOFFMAN	LEA ANNE	HORNER	WILBERT A
HOFFMAN	FRED P	HORNING	EDWARD C
HOFFMAN	DONALD F	HORNUNG	THOMAS
HOFFMAN	LA VOYCE A	HORTON	RICKEY
HOFFMAN	JACK	HORTON	ANNE
HOFFMAN	TRISTA M	HORTON	DOUGLAS G
HOFFMAN	KEVIN E	HORTON	GARY
HOFFMAN	GERALD D	HOSIER	MARK P
HOFMAN	JOE	HOTCHKISS	JAMES L
HOFMANN	EDWARD L	HOUGEN	ROGER B
HOGSTAD	JASON G	HOUGHTON	WALT
HOLBROOK	SUSAN A	HOUGHTON	WALT
HOLBROOK	DANNY	HOULIHAN	LARRY
HOLCOMB	DAVID T	HOUSER	JOSEPHINE A
HOLDERITH	JOHN K	HOUSKA	STEVEN
HOLETZ	MATT L	HOWARD	JEFF S
HOLLAND	TONY L	HOWARD	CARLA S
HOLLAND	FRED L	HOWARD	JOHN E
HOLLAND	ROBERT P	HOWE	LOUIS
HOLLAND	RICHARD	HOWE	GARY G
HOLLAND	IRENE	HOWELL	MICHAEL
HOLLENBECK	MIKE C	HOWELL	RANDY G
HOLLIDAY	E ALLEN	HOYT	TOM M
HOLLIS	JOHN E	HUBBELL	DOUGLAS
HOLM	CLIFFORD	HUCK	STEVE T
HOLMAN	ANDY J	HUDSON	DEBORAH J
HOLMAN	GENE	HUEBNER	KELLY
HOLMAN	LUKE C	HUFF	CARL O
HOLMES	BURT A	HUFT	SCOTT J
HOLMES	CLIFFORD A	HUGHES	DAVID R
HOLMES	DAVID M	HUGHES	TOM F
HOLMGREN	JOHN L	HULTENG	ERIC
HOLT	JAMES T	HUMMEL	JAMES J
HOLT	ROGER	HUNGERFORD	FRANCIS
HOLWEGNER	DAN M	HUNT	LEISETTE H
HOLWEGNER	HARLEAN S	HUNT	MARSHA L
HOLYCROSS	CHARLES H	HUNTLEY PROJECT SCHOOL	
HOLZER	TERRY M	HUNTLEY WATER & SEWER DISTRICT	
HOLZHEIMER	DON C	HUPPERT	FRED T
HONE	DON Z	HURD	DENNIS W
HOOD	WILLIAM J	HUSCHKA	DELORES L
HOOD	KELLY R	HUSKEY	JOHN D
HOOVER	JAMES E	HUST	DENNIS L
HOPE CHURCH		HUSTAD	MARLON

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Last Name	First Name	Last Name	First Name
HUSTON	HAROLD	JELLISON	JEFFREY
HUTCHINS	JAMES A	JENKINS	ROLIN D
HUTSELL	WILLARD	JENKINS	HELEN H
HUTTON	CHRIS	JENKINS	LOUISE
HUTZENBILER	JAMES	JENKINS	JAMES D
HUYSER	WILLIAM J	JENNISON	DALE W
HYAMS	ANDREW C	JENSEN	ROBERTA E
HYBNER	EDWARD L	JENSEN	PATRICK J
HYEM	DALE	JENSEN	ROBERTA ANN
HYLLAND	LARRY M	JENSEN	OTTO E
HYNEK	FLOYD	JENSEN	LYNN M
IACOPINI	DAVID W	JENSEN	JAY E
ICELAND SOLE PROPRIETORSHIP		JENSEN	GEORGE A
IFFLAND	KENNETH	JENSEN	GARY M
IFFLAND	KEVIN L	JENSEN	CLAY R
INDEPENDENT SCHOOL		JENSEN	CHARLES O
INDIAN CREEK RANCH INC		JERICHO HOME OWNERS	
INTERMOUNTAIN EQUESTRIAN		JERMUNSON	CHRIS R
IRION	WADE	JERRY'S AUTO BODY AND PAINT	
ISOM	JEFFREY R	JESSEE	TERRY W
IVERSON	KAREN J	JETT	L CANDISS
IVERSON	AMY T	JIM'S EXCAVATING SERVICE INC	
IVERSON	DAVID V	JNJ ENTERPRISE BUILDER LLC	
IVERSON	THEODORE E	JOHANNES	NORMAN N
IVERSON	LEE	JOHANNES	KENNETH
IVERSON	CAP	JOHANNES	NOLAN
JACKSON	JAMES R	JOHANNES	CLINTON N
JACKSON	LA VONNE	JOHANNSEN	GARY L
JACKSON	JOEL K	JOHANNSEN	KAY J
JACKSON	KIT D	JOHANNSEN GARY TRUCKING	
JACKSON	JOHN J	JOHNS	JIM A
JACKSON	ROBERT L	JOHNSON	ROBERT D
JACOBS	ROGER	JOHNSON	DAVID D
JACOBSON	ROGER	JOHNSON	HERB J
JACOBSON	RICHARD	JOHNSON	MICHAEL W
JACOBSON	RODNEY P	JOHNSON	FRED
JANIS	CLEMENT P	JOHNSON	ALAN S
JANSMA	W TODD	JOHNSON	ILA M
JANSSEN	JOHN	JOHNSON	GABRIEL N
JANY	DAVID M	JOHNSON	STAN D
JANZEN	RUSS E	JOHNSON	C ALLEN
JARES	JOHN E	JOHNSON	ROY W
JARES FENCE COMPANY		JOHNSON	GREGORY A
JASINSKI	BILL R	JOHNSON	EDDY C
JEANROY	CALVIN	JOHNSON	RONALD E
JEFF ENGEL CONSTRUCT.		JOHNSON	CARL
JELLISON	FRED L	JOHNSON	PETE

Last Name	First Name	Last Name	First Name
JOHNSON	JERRY	K W HOLDINGS LLC	
JOHNSON	NEAL C	K W SIGNATURE HOMES	
JOHNSON	DALE	KAATZ	ANNETTE
JOHNSON	GLENN	KAGARISE	LARRY G
JOHNSON	KLEMENS J	KAISER	JEROME
JOHNSON	MARVIN L	KAISER	JERRY L
JOHNSON	SCOTT	KAIZER	WILLIAM J
JOHNSON	LARRY A	KALAMAJA	LEO
JOHNSON	KEVIN	KALE	TRENT A
JOHNSON	MICK	KALVIG	RON D
JOHNSON	PAUL G	KAMMINGS	JAMES E
JOHNSON	JOE D	KANTA	JOE J
JOHNSON	EILEEN F	KAPFER	JASON S
JOHNSON	ROY M	KAPPEL	ROBERT A
JOHNSON	RICK	KAPPEL LLC	
JOHNSON	CARROLL W	KAPPTIE	WILLIAM
JOHNSON	JAMES	KAPSA	LINDA K
JOHNSON	KURT N	KARELL	ALLAN L
JOHNSON	CARL M	KARPSTEIN	STEVEN
JOHNSON LANE MATERIALS LLC		KARST	MOLLY
JOHNSON MARK CONSTRUCTION LLP		KARST	GARY W
JOHNSTON	THOMAS A	KASEMAN	CLAUDE D
JOHNSTON	BIRDIE D	KASEMAN	ELMER C
JOHNSTON	J R	KAUFMAN	SANDY
JOINES	WAVERLY E	KAUFMAN	LARRY
JONASSON	ROBERT E	KAUFMANN	ILAN H
JONES	JAMES L	KAULL	DON
JONES	LYLE E	KAUPISH	KIM
JONES	ALMA E	KAURIN	RON H
JONES	PAUL	KAUTZ	ELMER
JONES	ROBERT L	KAUTZMAN	CORNELIUS
JONES	RICK C	KAUTZMANN	DAVID D
JONES	JOHN D	KAWANE	WALLACE M
JONES	RON R	KAYLOR	DANNY D
JONES	DONALD E	KEEHN	SETH R
JONES	D PAUL	KEELE	WILLIAM R
JONES	RONALD V	KEELER	WENDELL
JONES	MICHAEL D	KEELING	JAMES R
JONES	FLOYD E	KEEVER	DON R
JONUTIS	STANLEY	KEEVER	DON C
JOPPA	DAVID	KEIM	VERN R
JORDAN	CHARLOTTE R	KELLER	GEORGE E
JORDAN	ALAN	KELLEY	F J
JORGENSON	JON SCOTT	KELLISON	TED
JOYCE	MIKE A	KELLY	CHERYL P
JUDSON	KATHLEEN M	KELLY	WILLIAM H
JUROVICH	EUGENE	KELLY	RANDY E
JUROVICH	ROBERT	KELLY	ROBERT
JUSSILA	NEIL R	KELLY	BARBARA J
K …	BARBARA E	KELSEY	MARY
K R RAUCH COMPANY		KELSEY	DAVID E

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Last Name	First Name	Last Name	First Name
KELSEY	CAROL M	KINGHORN	JOHN C
KEMBEL	RUSSELL	KINGHORN	JOHN H
KEMBEL	RAYMOND	KINGHORN	KEVIN R
KEMBEL	ELMER	KINNEY	ALBERT
KEMBEL	CARL	KINSEY	MIKE
KEMBEL	STEPHEN	KIRBY	NANCY C
KEMKES	JOHN	KIRKLAND	JAY
KEMPH	TRAVIS L	KIRSCHENMANN	KEVIN L
KEMPH	JOE	KISSEE	BRUCE A
KEMPH	LOIS M	KITCHIN	KEVIN P
KEMPH	JOE Q	KITT	ALICE A
KEMPH LAND & LIVESTOCK CO		KJORSTAD	KEN L
KENEALLY	PAUL E	KLAMERT	CHRIS
KENEALLY	KATHY	KLEIN	MARK A
KENNEDY	MARK C	KLEIN	KEN
KENNEDY	GEORGE B	KLEIN	TODD J
KENNEDY	TERRY L	KLEIN	LYNN L
KENNEY	LARRY J	KLEINSASSER	RONALD
KENT	THOMAS F	KLEINSASSER	JERRY
KERN	FRANK	KLEVGARD	VERN D
KERN	TINA M	KLINER	KENT H
KERN	ROB W	KLUKSDAHL	MARK D
KERNS	KRAYTON	KLUNDT	KEVIN
KERO	ANNE F	KNAPP	FRANK T
KERR	KRISTINE L	KNAPP	MASON
KERR	VALERIE	KNAUB	RAYMOND
KERR	JEAN M	KNAUB	ROGER J
KESLER	ROGER J	KNAUB	WILLIAM E
KESLER	RONALD E	KNAUB	JOSEPHINE
KETCHUM	SAMUEL J	KNEIB	CHARLES M
KETTENACKER	JEROME A	KNERR	KIM L
KETTERLING	RICK A	KNICKERBOCKER	CHRIS C
KETTERLING	HAROLD E	KNICKERBOCKER	ROBERT
KETTERLING	DELORES	KNOX	DAVID B
KETTERLING	STEVE A	KNOX	GEORGE E
KETTERLING	MORRIS	KNUST	SHARON M
KETTERLING	GERALDINE	KNUTH	RONALD A
KETTERLING	WILLARD	KNUTSON	JERRY D
KIDDER	TOM K	KNUTSON	TOM C
KIEDROWSKI	GORDIAN E	KOBELT	DARRELL
KIEFER	MICK J	KOBER	VIRLA I
KILROY	MICHAEL A	KOBER	ALVIN C
KILWEIN	JEFFREY A	KOBER	PAUL M
KIMBALL	ROBERT W	KOBER	ANDY P
KIMBALL	DAVID G	KOBER	THEODORA W
KIMMEL	FLOYD	KOBER FARMS INC	
KIMMEL	CLEVE	KOBER FARMS INC	TERRY
KINDER	SUE	KOCH	DANIEL E
KING	LORRAINE M	KOCH	JERRY
KING	JAMES	KOCH	ARNOLD
KINGHORN	RALPH E	KOCH	PHILIP

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Last Name	First Name	Last Name	First Name
KOCIAN	MICHAEL J	KRELL	KENNETH R
KOERBER	KEVIN M	KRENELKA	PETER E
KOFFLER	ROBERT	KREPS	RICHARD P
KOK	MICHAEL D	KRIEGER	EUGENE
KOLENDICH	FRANK	KRIEGER	JOHNNY
KOOYER	RICHARD L	KRIVONEN	WES M
KOPMAN	WESLEY L	KRKOSA	PAT
KOPP	JUSTIN	KROLL	DUANE E
KORELL	BRIAN D	KRONE	MARVIN J
KORELL	CARL E	KRUEGER	JAMES A
KORN	DIRK C	KRUG	DENNIS
KORTH	STUART A	KRUG	ADAM
KORTHUIS	DUANE R	KRUG	MARY
KORWALD	MORRIS	KRUG	HENRY
KOSMICKI	ROD L		KRUG
KOSTELECKY	RONALD	KRUG	WILLIAM
KOSTENKO	CLARENCE	KRUG	JAY
KOSTER	CHARLES R	KRUG	CHUCK
KOUBA	LANCE M	KRUM	JAMES
KOUBA	RICHARD R	KRUM	CAROLYN
KOUNS	MARY JANE	KRUM	JASON L
KOVACH	AGNES M	KRUM	DANIEL L
KOWALSKI	PAUL D	KRUM	JULIE A
KOZAKOFF	DIMITRI	KRUMHEUER	RAYMOND
KPGB 88.3 PRYOR GOSPEL RADIO		KUCH	EDDIE H
KRAFT	JOSHUA A	KUCK	HARVEY
KRAFT	FRIEDA	KUDRNA	BEVERLY
KRAFT	RICK E	KUEHNER	VERN E
KRAFT	LESLIE	KUHLMAN	JOHN L
KRAFT	ROBERT E	KUKLOK	GORDON L
KRAFT	JAMES L	KUKOWSKI	DICK
KRAFT	BRUCE G	KUKOWSKI	JACK
KRAFT	EDWIN	KUKOWSKI	STEVE
KRAFT	MICK M	KUKOWSKI	CHANCE L
KRAFT	BRAD	KULBECK	PHILLIP N
KRAFT	DENNIS J	KUMETAT	WILLIAM F
KRAFT	CAROL M	KUNNEMANN	KON H
KRAGT	MIKE	KUNTZ RANCH	
KRAGT	JOHN	KUNZ	KENNETH A
KRAMER	CAROL S	KUNZ	KEN A
KRAMER	MICHAEL J	KUPER	LONITA C
KRAMER	CYNTHIA	KURKOSKI	NOEL T
KRAMER	JASON S	KUSKE	RICHARD J
KRAMER	JOHN P	KUYKENDALL	SHIRLEY
KRAMER	RAYMOND J	KUYKENDALL	W BEECHER
KRAMER	DENNIS L	KVILHAUG	RON J
KRAMER CROWDER TRUST		KYHL	RANDY L
KRANK	GERALD	LARDIS	BILL
KRANK	JACOB C	LA COUNTE	DARRYL
KREBILL	ROY	LA FRANCE	VAL
KREITZBERG	DEAN E	LA MOTTE	DONALD A

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Last Name	First Name	Last Name	First Name
LA PERLE	BOB E	LARSON	WAYNE H
LA RANCE	CHRISTINE M	LARSON	BRUCE A
LABER	STUART	LARSON	PAULETTE
LACKMAN	JEAN P	LARSON	JAMES L
LACKMAN	JACK L	LASATER	PAUL
LACKMAN	DAN E	LASLEY	KEITH A
LACKMAN	STEVEN	LATTA	GEORGE
LACKMAN	WILLIAM C	LATTERELL	FAYETTE
LACY	CLARECE M	LAUBACH	LANCE M
LADD	ROY E	LAUREL AIRPORT	
LAFERRIERE	DARLENE F	LAUREL FARMERS MKT	
LAGGE	RICHARD	LAUREL SADDLE CLUB	
LAHN	GLENDA H	LAUREL SOFTBALL ASSN	
LAKKO	SHERRY	LAUSCH	NANCY J
LAMBERT	SCOTT A	LAUVER	DANIEL S
LAMBERT	STERLING R	LAVERDURE	PATRICIA
LAMBERT	STAN	LAVOLD	CALVIN
LAMBORN	ROLLAN J	LAVOLD	RICHARD
LAMBRECHT	DAVE P	LAW	JOHN
LAMBRECHT	EDWARD	LAWLER	MARK D
LAMBRECHT	RAY	LAWRENCE	GARY L
LAMBRECHT	JACK R	LAWRENCE	WILLIAM J
LAMBRECHT CONSTRUCT.		LAWSON	JAMES D
LAMEY	ARTHUR F	LAWSON	CAROL J
LAMM	FRANK R	LAWVER	TERRY
LAMMERS	SCOTT M	LE BRUN	BRENDA
LAMPERT	JIMMIE S	LE CABINET SHOPPE INC	
LANCE	STNALEY W	LE CLAIRE	FRANCES B
LANCE	ROSE	LE DUC	GORVAN M
LANCE	JAMES E	LE DUC	GORVAN J
LANCE	CARY L	LE FEBVRE	COLLEEN J
LANCE	STEPHEN W	LEACH	IRVING R
LANDE	WILMA	LECHNER	KIM P
LANDE	JEAN A	LEE	DONALD B
LANDWEHR	ALAN E	LEE	TERRY A
LANE	BERT E	LEE	LENDAL R
LANE	EVERETT G	LEE	RONALD K
LANG	KATHY JO	LEE	ROD W
LANGFORD	DAVID P	LEE	ALAN O
LANGVE	DIANE	LEEDHAM	ARLEDA
LANIER	CHARLES R	LEEDHAM	JUSTIN A
LANTIS	TY M	LEEDY	MARLA G
LANTZ	THOMAS M	LEENKNECHT	TONY W
LARDY	GLENN	LEES	ELVA M
LARIMER	JOE A	LEFFERS	JEFF
LARNED	DAVID	LEFLER	BOBBIE L
LARSEN	LYNN A	LEGARE	RANDOLPH
LARSEN	WENDY L	LEGERSKI	CHARLES J
LARSON	TODD D	LEGGETT	CORI L
LARSON	CAMERON C	LEGLER	RON D
LARSON	JOHN W	LEHENBAUER	NORBERT C

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Last Name	First Name	Last Name	First Name
LEHFELDT	JEFF	LINDEEN	DAVID B
LEHFELDT	O G	LINDELL	MARY J
LEHM	ROBERT C	LINDELL	RODNEY B
LEHMAN	MICHAEL	LINDELL	J W
LEHMAN	TIM G	LINDSAY	REGGIE L
LEIKAM	LARRY L	LINDSEY	LEE
LEISTIKO	DENNIS M	LINDSEY	LANA R
LEMIEUX	HENRY J	LINDSEY	JOHN W
LEMON	GREG D	LINGER	EARL
LENHARDT	FREDERICK	LINGER	BILLY ROY
LENHARDT	RICHARD W	LINGER	LLOYD F
LENNICK	ROGER	LINGOHR	CHERYL E
LENNING	MITCH	LINK	JOE
LENT	MARK	LINN	JANICE
LENTZ	EDWARD W	LINZA	DARREN M
LENZ	WILLARD H	LITTLE	SHIRLEY A
LEONE	ROBERT J	LITTLE WOLF	KRISTI M
LEPLEY	WILLIAM L	LITTLER	AL
LESLIE	MITCH	LLANA	ROBERT L
LESTER	ROBERT L	LLEWELYN	THOMAS
LESTER	SHIRLEY I	LLOYD	JAMES V
LESTER	SCOTT J	LMRSM LLC	
LESTER	DANIEL V	LOBER	WALTER M
LETCHER	VAL	LOCKER	STEPHANIE R
LETZ	PHILIP	LOCKER	CHARLES S
LEUENBERGER	EDDY D	LOCKWOOD	GORDON
LEUTHOLD	WILLIAM E	LOCKWOOD AUTO & TRUCK SERVICE	
LEVIS	SAM A	LOCKWOOD CENTER	
LEWIS	BENNY L	LOCKWOOD RURAL FIRE	
LEWIS	WILLIAM E	LOCKWOOD VETERINARY SERVICE	
LEWIS	RAY D	LOCKWOOD WATER & SEWER	
LEWIS	MARTINA E	LOENDORF	TYRONE B
LEY	JOHN	LOGAN	JAMES E
LICH	MELVIN F	LOGAN	MORGAN E
LIDDELL	ROBERT E	LOGAN	RANDALL C
LIE	HAAKON	LOHRENZ	RICHARD
LIENEMANN	RYAN L	LOHRENZ	DON
LIEVENS	MARC A	LOMAX	JAMES A
LIGHT	JACK W	LONG	CHARLES J
LIGHT	PETER J	LONG	ROBERT R
LILLEBERG	SEAN A	LONGMIRE	ALMA L
LILLEBERG	PHILIP A	LONSBERRY	DOROTHY
LILLEY	WILLIAM L	LOOSE	JACK L
LILLIE	SCOTT	LOPEZ	DAVID
LIMPP	MARCELLA A	LOPEZ	ISIDRO L
LIMPUS	MIKE	LORANG	HARRIET
LINAHON	JERRY	LORANG	JOHN P
LIND	JASON C	LORD	CURTIS A
LINDAL	JAN L	LORD	JOHN W
LINDEEN	PHYLLIS J	LORD-FISHER	LINDA

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Last Name	First Name	Last Name	First Name
LORENTZEN	G BRUCE	MADDEN	BERT
LORENZ	JAMES E	MADDOCK	LANE K
LOTERBAUER	GREGORY G	MADILL	BRYAN S
LOUDERMILK	WELDON B	MADILL	WILLIAM F
LOUIS	WARREN D	MADSEN	DAVE M
LOVE	RICKEY E	MAGNUSON	ROSS D
LOVE	DONALD R	MAHAN	ETHEL
LOVE	PAUL	MAHN	KURT E
LOVE	JOSEPH D	MAHON	DAVE G
LOVE	WAYNE	MAHON	MICHAEL J
LOVELESS	ROBERT S	MAHONEY	CLIFF J
LOVELY	DOUGLAS W	MAIDEN	GALE
LOWE	RUSS	MAIER	LYDIA
LOWE	HENRY J	MAILLOUX	BRAD D
LOWE	MARK	MAILLOUX	KELLY D
LOWE	RANDY LOUISE	MAITLAND	MICHAEL G
LOWE	ROBERT E	MAJOR	SCOTT
LOWELL	TOM M	MAKEEFF	GLADYS N
LOWERY	CHIP W	MALKUCH	JOE D
LOYNING	JAMES B	MALL	JOHN E
LUBKE	LANCE L	MALLORY	JAMES H
LUCAS	MICHAEL W	MALMSTROM	SUSAN
LUDERMAN	VERNON L	MALMSTROM	TODD T
LUDINGTON	EDWIN M	MALMSTROM	THOMAS F
LUDLUM	GARY L	MALSOM	MARK
LUDWIG	MICHAEL L	MALVEY	D A
LUENEBURG	SUSAN M	MAMAYEK	BRYAN
LUHMAN	KAREN	MANDELLA	ANGELA T
LUND	STEVEN R	MANFULL	ARLO D
LUNDELL	STEVE	MANGEN	MICHAEL T
LUTERBACH	DON H	MANGOLD	SANDIE M
LUTTSCHWAGER	K L	MANGOLD	JAMES A
LYNAM	LARRY	MANGUM	BILL
LYNCH	KEVIN M	MANGUS	SHON C
LYNCH	CHARLES H	MANLEY	BYRNE J
LYNG	RICK J	MANSFIELD	MICHAEL G
LYON	ROBERT H	MANWEILER	RAYNOLD J
LYONS	DALE R	MARCOTTE	RICHARD D
LYYTINEN	LARRY	MARES	TIMOTHY R
LYYTINEN	MARVIN	MARKEGARD	RODNEY P
M & C GROCERY INC		MARKEGARD	HARVEY K
M & R WATERPROOFING		MARKEGARD	LOIS C
M SQUARED ACRES		MARKEGARD	JOHN
MAART	NANCY	MARKEGARD L & L INC	
MABRY	ESTER	MARKEGARD RIMROCK FARMS LP	
MAC CATHERINE	SHAWN M	MARKLEY	RONALD L
MAC LACHLAN	GARY W	MARKUSON	BRENDA K
MACCHIAVELLO	CARLO	MAROULIS	JAMES
MACE	FRED J	MARQUART	PETER J
MACHADO	RONALD M	MARQUART	ARNOLD
MACKENZIE	ROBERT J	MARQUEZ	STEPHEN E

Last Name	First Name	Last Name	First Name
MARSH	JIM	MC CARTNEY	J G
MARSHALL	CRAIG S	MC CARTY	MICHAEL F
MARSHALL	AMY C	MC CAULEY	LAURIE D
MARTIN	WILLIAM L	MC CAULEY	ELAINE
MARTIN	ROBERT E	MC CLEARY	JOHN D
MARTIN	HAROLD E	MC CLURE	SHANNON J
MARTIN	ALBERT J	MC CLURG	DONALD G
MARTINEZ	DAVID	MC COMAS	LAVERNE F
MARTINEZ	EVERETT	MC COMAS	LESLIE
MARTINSON	GOODWIN A	MC COMB	STACY
MARTINSON	MATT	MC COMISH	KENNETH A
MARTINSON	SHELLY L	MC CONKEY	JON A
MARTINSON	EDDY	MC CORMICK	THOMAS E
MARTINSON	MARIANNE	MC CORMICK	R ALLEN
MARTISAK	FRANCES M	MC COY	JOE
MARTONEN	CHAD E	MC COY	MIKE
MASCARENA	CLAYTON	MC CRANIE	NATHAN H AND
MASEBERG	MIKE	MC CRONE	SAM E
MASON	BETTY	MC CUIN	WILLIAM G
MASSAR	MONTE	MC CUNE	DANIEL
MASSIC	ROBERT D	MC DONALD	DEBRA D
MASTERSON	SUSAN	MC DONALD	PATRICK A
MATHISON	ANDREA M	MC DONALD	JEFF M
MATRIARCH CONSTRUCTION INC		MC DONALD	DONALD R
MATTFELDT	MICHAEL	MC DOUGALL	RICK
MATTHEIS	MARY H	MC ELVAIN	ROLAND
MATTHEWS	SUZANNE R	MC FADDEN CONSTRUCTION INC	
MATTHIES	HANK	MC FARLAND	BRUCE E
MATTSON	JACK D	MC FARLAND	THEODORE C
MATZ	JOHN M	MC FARLAND	CHARLES
MAUCH	MARTIN	MC FARLAND	JOHN E
MAURER	TOM	MC FARLAND	CLINTON L
MAURER	PHILIP D	MC FARLAND	GARY
MAURITZSON	ANNA M	MC FARLAND	DAVID
MAVITY	MONTE R	MC FARLAND RANCH INC	
MAXWELL	CHARLES R	MC FARLANE	TOBIN A
MAXWELL	KATHY A	MC FARLANE	GLEN
MAY	JOHN G	MC FATE	DAVID R
MAY	JASON D	MC FERRAN	EUGENE
MAYES	GARY	MC GAHAN	CHARLES F
MAYES	JOE A	MC GINNIS	JOE E
MC ARTHUR	TERRY J	MC GLOTHLIN	CHARLES E
MC BRIDE	RICHARD	MC GOUGH	DANIEL
MC BRIDE	TOM	MC GRAIL	RONALD
MC BURNEY	SCOTT D	MC GRAW	ROGER M
MC CABE	DONALD W	MC GRAW	GERALD R
MC CAFFREE	ROBIN M	MC GREW	D SEAN
MC CAFFREE	MARLIN R	MC GREW	TIM H
MC CARTHY	MIKE L	MC ILVAIN	BILL
MC CARTHY	MICK S	MC INTOSH	JAMES L

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Last Name	First Name	Last Name	First Name
MC INTOSH	WILMA	METZKER	RONALD D
MC KEEVER	TODD M	MEYER	KENNETH J
MC KELVIE	RALPH E	MEYER	RONALD W
MC KENNEY	JAMES	MEYER	MICHAEL R
MC KENZIE	MAGARET A	MEYERS	STEPHEN L
MC KENZIE	CORY S	MICHAEL	WILLIAM G
MC KERLICK	TOM	MICHAEL	WILLIAM
MC LARNON	GLADYS M	MICHAEL	HARRY
MC LENNAGHAN	DON A	MICHAEL	ALAN W
MC LEOD CONSTRUCTION		MICHAEL	STEVEN J
MC MAHON	LARRY D	MICHALIES	KELLY G
MC MANAMEN	VICKI J	MICHELS	JERRY
MC MILLAN	BOYD M	MICHELS	RAY E
MC MILLEN	ALLEN W	MICKULIN	STEVE
MC MILLEN	TIM A	MIDDLETON	JOSH J
MC MULLEN	THOMAS E	MIDDLETON	J R
MC MULLIN	KENNETH D	MID-VALLEY TIRE & LUBE	
MC NEILL	VALERIE A	MIELKE	RANDOLPH
MC NIVEN	DENNIS	MIELKE	DENNIS
MC NULTY	JUDIANN	MIKKELSON	KEN R
MC NULTY	NANCY E	MILL	EDWARD J
MC QUIRE	SAM	MILLER	GARY L
MC RAE	SCOTT	MILLER	JOE
MC SWEYN	WILLA JEAN	MILLER	MAX F
MC SWEYN	ROBERT	MILLER	BILL
MEACHAM	CRAIG V	MILLER	DEBBIE K
MEACHUM	FRANK M	MILLER	ELVIN T
MEGORDEN	CRAIG R	MILLER	LYNDA L
MEHLING	RICK A	MILLER	MELVIN L
MEHRER	RAY R	MILLER	JOSEPH A
MEIER	CRAIG B	MILLER	ROBERT A
MELBY	EDWARD J	MILLER	ROBERT J
MELCHER	H ED	MILLER	SANDRA K
MELING	TODD A	MILLER	MATTHEW V
MELONI	MICHAEL P	MILLER	BERNARD
MELVILLE	RICHARD A	MILLER	DAVID
MELVIN	RANDY L	MILLER	JONATHAN S
MENGE	HENRY W	MILLER	GENE
MERCHEN	LOUIS J	MILLER	JEFF P
MERKES	GERALD	MILLER	GERALD L
MERON	RICK J	MILLER	PHYLLIS E
MERRIFIELD	MARTY	MILLER	KEVIN R
MERRILL	CHRIS D	MILLER	KENNETH L
MERTZ	JAMES	MILLER	DARRIN K
MERYMAN	WILLIAM A	MILLIKEN	DANIELLE
MESSERSCHMITT	MARK L	MILLIKEN	LOUIS R
MESSICK	GARY C	MILLS	KENNETH
METTES	FRANK S	MILMINE	DON V
METZGER	TIM	MINI	MERC
METZGER	EUGENE A	MINKOFF	RANDY J
METZGER	MARVIN J	MINSTER	TANA

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Last Name	First Name	Last Name	First Name
MINTLING	KENNETH C	MORKEN	KURTISS B
MISHLER	REX	MORRIS	STANLEY K
MISHLER SALES INC		MORRIS	RICHARD M
MISSION CREEK LAND AND CATTLE		MORRIS	RANDY
MITCHELL	DON D	MORRIS	WILLIAM J
MITCHELL	JAMES	MORRIS	SANDRA A
MITCHELL	BURTON	MORRISON	SCOTT A
MIZELL	BILL	MORRISON	THOMAS A
MOBERLY	MARJORIE	MORSE	MARK E
MOEDL	COLTER M	MORSE	WALTER D
MOEN	DAVE	MOSDAL	THELMER
MOFFET	RICCI	MOSDAL	JARRED I
MOGENSEN	RICHARD	MOSEMAN	RICHARD D
MOHICAN	WEST	MOSER	ROBERT L
MOHR	MARTIN	MOTHERSHEAD	MILTON
MOHR	JOHN W	MOTHERSHEAD	WILLIAM
MOHR	DONALD D	MOULLET	TIM J
MOHR MINOR SUBDIVISION		MOUNTAIN MECHANICAL INSULATION	
MOLER	DIRK E	MUELLER	KIMBERLY J
MOLINE	WILLIAM A	MUELLER	JERROL K
MOLT HOMECRAFT CLUB		MUILENBURG	ROLLAND L
MONDRAGON	CHERIE A	MUIR	PATTY
MONSON	STAN	MUNIS	JOHN R
MONSON	STEVE D	MUNSON	TIMOTHY J
MONTANA TERRITORY MEATS		MURFITT	ROBERT J
MONTOYA	JOSEPH R	MURPHREY	MARIAN L
MOON	DENNIS J	MURPHY	DANIEL J
MOON	DAVID J	MURPHY	CHARLES H
MOORE	JACK	MURPHY	LYNN J
MOORE	BRUCE E	MURPHY	JERRY
MOORE	LAURIE LEE	MURPHY	GERALD B
MOORE	JOHN K	MURPHY	FRANK J
MOORE	EDWIN R	MURRAY	SHAWN C
MOORE	RONALD E	MURRAY	H DON
MOORE	HARRY	MURRY	DUANE
MOORE BROTHERS		MUSGJERD	LINDA J
MOOTS	MORRIS C	MUTTER	ALVIN L
MOOTS	MARION	MUUS	JEFF
MOOTS	WOODROW	MYERS	SCOTT G
MORALES	GONSALO V	MYERS	JAMES SHANE
MORAN	TRAVIS E	MYERS	BRYON T
MORDEAUX	CORRY	MYERS	DIANE M
MORE CONSTRUCTION INC		MYERS	LEE
MOREHOUSE	CLIFFORD	MYHRE	KYLE E
MORGAN	PHILIP L	MYHRE	RALPH D
MORGAN	KENT	MYHRE	MARILYN I
MORGAN	BOB	MYHRE LAND COMPANY	
MORGAN	L W	NACE	SIS
MORIN SCHOOL		NAFTS	MELVIN L

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Last Name	First Name	Last Name	First Name
NAGEL	JOHN A	NICK	JOHN M
NAGRODSKI	LESLOW A	NICKEL	TOM
NANCE MIKE CONSTRUCT.		NICKLESS	DAVE J
NARANCICH	JERRY W	NICKOLOFF	KENNETH J
NASH	F VERNON	NICOL	GREGG
NATION	TATE W	NIELSEN	TRENT W
NAUMAN	RICHARD A	NIELSON	DAN
NAVE	DONALD L	NIENABER	FRANK H
NEAELY	MONTY	NIENABER	FRANK H
NEARPASS	BRIAN D	NILES	BOB L
NEBEL	JACKIE A	NILES	NINA L
NEESE	KEVIN D	NITSCHKE	JOYCE
NEHER	JACK K	NIXON	STEVEN V
NEIBAUER	ELSIE	NOEL	DAN
NEIBAUER	JAMES D	NOLAN	DAVID E
NEIBAUER	KENNETH W	NORDQUIST	JERRY R
NEIBAUER CONSTRUCTION CO INC		NORLING	CARY E
NEIL	CHRIS	NORMAN	WAYNE
NEILL	AMY D	NORRISS	SHERYL L
NELSON	ROGER G	NORTHERN SKIES AVIATION	
NELSON	SHAWN D	NORTON	BRIUCE D
NELSON	SHELDON R	NORTON	JOHN
NELSON	ANDREW C	NORTON	BERNADETTE
NELSON	THERESA	NORTON	RAY
NELSON	GERALD K	NORWOOD	CRAIG S
NELSON	KENNETH R	NORWOOD	NORMA
NELSON	WILLIS M	NOTT	LENROY F
NELSON	DAVID	NOVAK	STAN
NELSON	LAURENA L	NOVAKOVICH	KEITH A
NELSON	MICHELLE E	NUNEMAKER	RALPH
NELSON	GEORGETTE C	NUXOLL	WALTER
NELSON	WAYNE W	NYMAN	TOM
NELSON	ED	NYSTROM	JOHN L
NEMITZ	WARREN	O BRIEN	MICHAEL
NESOVIC	JOHN	O CONNELL	DONALD
NESS	STEVE C	O DELL	LARRY G
NESSAN	TIM	O DONNELL	LARRY S
NEVE	RICHARD A	O DONNELL	HARLEY
NEW APOSTOLIC CHURCH		O NEAL	CHAROLETTE E
NEWBY	FLETE C	OAKLAND	JERRY
NEWELL	BILL A	OBERG	JOSEPH O
NEWELL	KYLE B	OBERG	EDWARD
NEWKIRK	W JOHN	OBERG	MIKE T
NEWLIN	ED L	OBERG	EDWARD
NEWMAN	JAMES B	OBERLY	DAVID E
NEWPOWER	SCOTT J	OBLANDER	ROGER S
NICHOLAS	WESLEY B	OBLANDER	TOM
NICHOLS	CISCO	OBLANDER	DAN R
NICHOLS	JIM E	OBLANDER	CLAYTON
NICHOLSON	GARY	OBLANDER	DORIS L

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Last Name	First Name	Last Name	First Name
OBLANDER	JIM	OSTERMILLER	LINDA K
OBLANDER	WALTER	OSTERMILLER H L CONSTRUCTION	
OBLENDER	TIM	OSTLUND	HAL
OBLENDER	WILLY A	OSTLUND	JOHN
OCHSNER	ROBERT	OSTWALT	WARREN D
O'DONNELL	RON W	OSTWALT	JOHN C
OEDEKOVEN	MICHAEL	O'TREMBA	JAMES J
OHLIN	RONALD E	OTT	STACY S
OHMAN	GARY L	OTTESON	DANNIE L
OJEDA	N ANTONIO	OTTESON	CHERYL A
OKSNESS	RICHARD	OTTUN	JON
OLIVER	MIKE	OUDKIRK	JAMES T
OLMSTEAD	GAYLEN	OUKROP	WAYNE J
OLSEN	PAUL G	OUR REDEEMER LUTHERAN CHURCH	
OLSEN	ERIC H	OWEN	TIMOTHY P
OLSEN	ALLAN C	OWEN	STEVE
OLSEN	KENNETH L	OWEN	LEONARD J
OLSEN	PETER E	PABICH	AMANDA L
OLSEN	ROBERT	PACKARD	MARILYN
OLSEN	A KRISTINE	PADDEN	BRETT E
OLSEN	CLYDE	PADDOCK	TODD A
OLSON	JAMES D	PADGETT	RAYMOND A
OLSON	DAVID L	PADILLA	JESSE
OLSON	WALLACE L	PADILLA	RONALD
OLSON	LAURAL	PAFFRATH	DARWIN D
OLSON	MARTIN E	PAINTER	KENNETH E
OLSON	RONALD L	PAINTER	HASSELL W
OLSON	RAYMOND G	PALMER	FRED
OLSON	JEFF J	PALMER	APRIL L
OLSON	BRYAN D	PALMER ENTERPRISES	
ONSTAD	LORNE L	PARAMOUNT LOG HOMES	
OPENSHAW	ANJE	PARDIS	VICTORIA
OPENSHAW	LISA M	PARKER	HENRY L
OPP	STEVE R	PARKER	STEVEN M
OPPERUD	WAYNE J	PARKIN	VALERIE
ORELUP	LYLE	PARRISH	KRISTY L
OROZCO	FRANK L	PARSONS	NANCY A
ORTH	LEONARD B	PARSONS	MIKE V
ORTNER	BONNIE L	PASCAL	STEVE
ORTSCHEID	RONALD K	PASEK	MICHAEL T
OSBORNE	WES R	PATIAN	ROBERT L
OSBORNE	WES R	PATTERSON	MARK W
OSGOOD	DON	PATTERSON	PAT
OSMUNDSON	HOWARD B	PATTERSON LAND & LIVESTOCK CO.	
OSNESS	DALE	PATTERSON REPORTING SERVICES	
OSTER	DONNA M	PAUL	RICHARD A
OSTERMILLER	ROBERT S	PAULEY	D RICHARD
OSTERMILLER	STEVEN J	PAULSEN	GLENN
OSTERMILLER	RANDY H	PAULSON	LARRY K

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Last Name	First Name	Last Name	First Name
PAWN PLUS		PETERSON	JOHN A
PAYER	FRANCIS B	PETERSON	ERIC D
PAYOVICH	GEORGE D	PETERSON	JOHN A
PAZ	NASH	PETERSON	LONNIE L
PEABODY	LARRY	PETERSSON	RICHARD
PEARLIE LEE & COMPANY		PETTERSON	MYRON A
PEARSON	RONALD	PETTY	MELVIN T
PEARSON	EVA E	PETTY	JOHN D
PECARINA	RONALD	PFEIFER	MELANIE S
PECINOVSKY	LISA A	PHELPS	JAMES E
PECK	BRETT A	PHILHOWER	JERRY L
PECK TRANSPORT		PHILHOWER	JAMES H
PEDERSEN	MICHELE A	PHILLIPS	CANDACE R
PEDERSON	JOAN E	PHILLIPS	SUE
PEGAR	DUANE A	PHIPPS	JAMES L
PEHL	DENNIS B	PICARD	SAM
PEILA	SAM P	PICKETT	JOHN S
PEILA	MATT S	PIERCE	ANTHONY R
PELKEY	FRANK D	PIERCE	ROBERT L
PELTZER	ALBERTA M	PIERCE	FRED C
PEMBERTON	DOUG	PIERCE	DAVID G
PENA	GERALD A	PIERCE	PAULINE
PENDILL	GORDON	PIERCE	ROBERT L
PENNINGER	GARY	PIERRY	RUSSELL W
PENNINGTON	JAMES S	PIETTE	MARY A
PENTECOST	CHARLES	PIETZ	KEN A
PENWELL	LEWIS F	PINKERTON	JOHN J
PEPIN	JACQUELINE J	PIPAL	RANDY E
PERALEZ	BENTURA	PIPER	GREG
PEREY	LYNN	PIPINICH	A J
PERISIC	HILDEGARD M	PISK	DUANE R
PERKEREWICZ	GARY	PITMAN	ALBERT
PERKINS	ROGER J	PIVONKA	CARL E
PERKINS	ELAINE	PLACE	WILLIAM
PERRIGO	LEE W	PLAGMANN	RICHARD
PERRIN	MARYNELL	PLATH	ARTHUR T
PERRIN	DOROTHY L	PLENINGER	LES R
PERRO	EDWARD J	PLETCHER	RON
PERRY	RANDY	PLOOSTER	JOAN
PERSONETT	THOMAS J	PODOLAK	RONALD F
PETERS	JAMES R	POGUE	GARY
PETERS	JOE A	POINTER	THOMAS
PETERS	MICHAEL R	POLLERT	JAMES C
PETERS	GARRY G	POLLUCK	STEPHEN W
PETERSEN	STEVE K	POMPEYS PILLAR POST OFFICE	
PETERSON	RANDALL R	PONCE	ALICE R
PETERSON	HAROLD A	POND	W E
PETERSON	MARK A	POND	CURTIS
PETERSON	RICHARD L	POPE	JAMES V
PETERSON	BERNELL J	POPELKA	RONALD E
PETERSON	DON	POPELKA	A EDWARD

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Last Name	First Name	Last Name	First Name
POPP	ROBERT A	R M PROPERTIES	
POPP	EDWARD R	R S AUTOMOTIVE	
PORTENIER	WARREN	RABENBERG	DAVID J
POST	CYNDI K	RADDEN	PATRICIA G
POTTENGER	JIMMIE R	RADKE	GORDON
POTTER	KENT W	RADOVICH	DOROTHY R
POTTER	EVELYN M	RAE	RAYMOND
POTTS	DENNIS	RAE	KEITH
POWELL	SCOTT	RAFFERTY	MARTHA SUE
POWELL	MYRA C	RAINES	STAN D
POWELL	MARLIN E	RAINEY	JOHN
POWER	THOMAS R	RAMBUR	MICHAEL G
POWERS	DAVID K	RAMSEIER	FREDERIC N
POYNOR	PAT	RANDALL	ARCHIE L
POZZI	HENRY J	RANG	RANDY D
PRAIRIE VIEW BIBLE CHURCH		RASMUSSEN	EDWIN C
PRANSKY	ELIOT	RATTLESNAKE DUCK CLUB	
PREMIER BULDING & DESIGN		RAUCH	KENNETH R
PRESCOTT	JAMES A	RAUSCH	KEITH
PRESS	RON W	RAWHOUSER	BOB W
PRICE	BARRY L	RAWLINS	MIKE D
PRICE	PERRY V	RAY	BRIAN
PRINTER	TIMOTHY T	RAY	JERRY T
PROCHASKA	ALBERT	RAY	SHIRLEY J
PROCIV	MARK R	RAY	DIRK K
PROFERA	ROBERT C	RAY	JENNIFER E
PROJECT LITTLE LEAGUE		RAY	MICHAEL E
PROJECT MERCANTILE		RAY	DONALD R
PROPP	LARRY	RAY & COMPANY REALTORS	
PROPP	TRAVIS	RAYBORNE	RODNEY W
PROPP	RANDY Z	READY	BRUCE
PROPP	GARY L	REAL ESTATE TRANSACTION	
PROPP	ALLEN C	REAMY	WALTER L
PROULX	ELVA	REDDING	BOB
PRYOR BAPTIST CHURCH		REDFIELD	JONATHON K
PRYOR CREEK BAR		REDINGER	LANCE L
PRYOR CREEK GOLF		REDMAN	DARRYL T
PUGRUD	JOHN R	REED	TONY L
PULLIAM	MICHAEL	REED	PATRICIA
PULST	DARRELL A	REEDER	CRAIG E
PULVER	STANLEY D	REESER	CHARLES L
PURVIS	LAWRENCE W	REHARD	DAN E
PUTNAM	WALT	REHM	ROBERT M
PYETTE	VICKI D	REHRIG	DENNIS
QUALITY KITCHENS		REICHENBACH	VICTOR
QUALLS	MICHAEL S	REICHERT	TED J
QUANBECK	ELMER	REICHERT	TED
QUANBECK	DAN E	REICHERT	GENE
QUIGLEY	MARJORIE	REICHERT	RANDY F
QUILICO	BERNIE	REIFLE	GEORGE I
QUINLEY	ROSEMARY	REILAND	TED G

Last Name	First Name	Last Name	First Name
REIN	ALLEN D	RICHARDSON	JOHN N
REINHARDT	JOYCE M	RICHARDSON	DR LEE
REINHARDT	WILMER	RICHARDSON	CORY N
REINHARDT	KEN	RICKMAN	JASON L
REINHARDT	JAMES M	RIDDLE	LES L
REINHARDT	ROBERT J	RIDER	LORRAINE
REINKE	ANN L	RIEMAN	WILLARD
REINSCHMIDT	STEVEN S	RIGHTMIER	THOMAS R
REISDORFF	JOHN H	RIGNEY	JOHN M
REISER	FRANCIS J	RILEY	FLORENCE
REITER	DENNIS	RILEY	EVA M
REITER	RANDY L	RILEY	TOM E
REITER	ROBERT L	RINDAHL	JAMES
REITER	K MINK	RINDAL	LE ROY
REITER	PAT	RINDAL	ANGUS R
REITER	HERMAN	RINDERKNECHT	DANIEL W
REITER	EUGENE	RIPLEY	CRAIG
REITER	MICHELE B	RIPLEY	J MICHAEL
REITER	MICHAEL	RIPLEY	BUTCH D
REITER	WILLIAM E	RISSER	BRIAN K
REKDAL	SHANE M	RITTAL	ANN J
REMME	BRANDI L	RITZ	NICK C
REMMICK	SHIRLEY	RITZ	EDDIE D
RENNICH	LAWRENCE	RITZ	DAVID
RENNIE	DAVID G	RIVERA	CHERYL
RENO	RALPH A	RM BUILDERS INC	
RENO	JOSH J	ROACH	BRENT E
RESCH	LARRY	ROAN	JOHN
RESER	LOLA M	ROBBIE	SCOTT W
REST	ANDREW M	ROBBINS	RICHARD A
RESTAD	JUDY M	ROBERTS	PERRY
RETHMAN	VIC	ROBERTS	BRADLEY M
REXFORD	TRACY A	ROBERTS	ART
REYER	JAMES	ROBERTS	GERRY
REYNARD	WILLIAM K	ROBERTS	FRANCES
REYNOLDS	KEITH	ROBERTSON	KEN
REYNOLDS	ZANDRA R	ROBERTSON	DAVID R
REYNOLDS	MARTIN G	ROBERTUS	HENRY J
REYNOLDS	LEE	ROBERTUS	RAYMOND
REYNOLDS	JERRY T	ROBEY	GREG
REYNOLDS	WENDY A	ROBINETTE	COLLEEN F
RHOADES	N CLYDE	ROBINSON	WHITNEY S
RHOADS	LAWRENCE L	ROBINSON	BARBARA K
RHODES	RALPH E	ROBINSON	RANDALL
RHODES	DON L	ROBINSON	MARTIN M
RICE	PAUL C	ROBINSON	FRED
RICE	DOUG	ROBISON	RANDALL
RICE	SHARI A	ROBISON	GARY D
RICE	LAURIE	ROBISON	DWAYNE
RICHARD	LARRY J	ROBSON	LARRY
RICHARDS	WALTER D	ROCK	EMMALINE

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Last Name	First Name	Last Name	First Name
ROCKY MOUNTAIN AIR &		RUDIO	GERALD W
RODEN	DON J	RUEGAMER	BONNIE LUE
RODGERS	JANET G	RUEGAMER	WILLIAM H
RODIER	M W	RUENHALL	LOUISE
RODRIGUEZ	MICHAEL	RUESCH	DONALD A
RODVOLD	GERALD S	RUFF	WILHELM R
ROE	REX	RUFF	KATHLEEN
ROGERS	GODFREY H	RUFF	TERRY L
ROGERS	DON	RUFF	SCOTT R
ROGERS	LEON N	RUFF	JOHN R
ROGERS	MICHAEL S	RUHD	BRUCE E
ROGERS	E F	RUHL	DAVID W
ROGERS	DIANE	RUHR	DANIELLE R
ROGERS	JON W	RUKSTAD	HARRY M
ROLANDSON	DEAN A	RULAND	JAMES R
ROLF	FREDA L	RUNESTAD	MARJORIE J
ROLL	LEON	RUPPRECHT	MARK L
ROLL	CLIFF J	RUSH	BILL
ROLL	RONNA M	RUSSELL	GREG
ROLLAND	EVELYN	RUSSELL	BILL
ROLLER	ALAN	RUSSELL	RICK
ROLLER	ED J	RUSSELL	JOSEPH W
ROLLMAN	JOHN	RUST	ROBERT W
ROME	GARY	RUSTAD	G TODD
ROMINE	LARRY J AND	RUTH	CLIFTON C
RONCELLI	JOE S	RUTH	MICHAEL D
RONDEAU	TERESA M	RUTZ	RODNEY L
ROODS	DARLYNE	RYAN	ROBERT M
ROSAGER	KRIS	RYE	JIM
ROSEKELLY	RICK R	RYKOWSKI	DAVID E
ROSIN	DARREL	RYMER	CHARLES E
ROSMAN	STACEY L	SABAL	ROSA J
ROSS	GORDON B	SADDLEBACK RIDGE INC	
ROSS-CLARY	CARI J	SAGE	RUSSELL
ROSSELOTT	RYAN W	SALAZAR	LARRY W
ROSSI	MIKE	SALVESON	ALLEN A
ROSSOW	LARRY	SALVESON	RAYMOND J
ROST	JOHN T	SALYER	JAMES M
ROTH	JAKE D	SALZMAN	HAROLD
ROUANNE	JEREMIAH L	SAM	ROBERT S
ROUTH	REVE L	SAMPSON	TIMOTHY
ROUTSON	MARY E	SAMSON	RANDY
ROWLAND	DAVE	SAMSON	JAMES A
ROWLAND	FRANK	SAMSON	JANA R
ROWLETT	WILLIS	SANCHEZ	CLIFFORD
ROYAL	JERRIE A	SAND	LAWRENCE J
ROYCE	DAVID W	SANDBAK	ALLEN
RRS INC		SANDERS	DARRELL W
RUBASH	MITCHELL G	SANDERS	ELWIN
RUDE	R JOSEPH	SANNER	RAY
RUDIO	RUTH	SANNES	RONALD M

Last Name	First Name	Last Name	First Name
SANNON	JACK	SCHLEINING	JIM H
SANNON JACK TRADER		SCHLEINING	GORDON
SARKELA	CHARLES P	SCHLEPP	DOUGLAS L
SAUER	TIMOTHY M	SCHLOSSER	CURTISS L
SAUTER	RICHARD D	SCHLUND	RICHARD D
SAUTER	VIOLA	SCHMALZ	DAVID W
SAVAGE	ORAN L	SCHMIDT	GLENN R
SAWATZKY	GERHARD	SCHMIDT	LLOYD E
SCAMMON	ERIC M	SCHMIDT	GARY L
SCARLETT	ED A	SCHMIDT	DICK
SCHAAK	WILLIAM D	SCHMIDT	CLARK E
SCHAAK	LARRY	SCHMIEDING	MERRILL L
SCHAAP	THOMAS L	SCHMIT	DAVID A
SCHACHT	KENT A	SCHMITT	VERNARD T
SCHAEFBAUER	BARBARA A	SCHNEIDER	HAROLD E
SCHAEFER	DAVID	SCHNEIDER	GARY
SCHAFER	TOM L	SCHNEIDER	GENE
SCHAFF	CHRIS A	SCHNEIDER	JOHN D
SCHAFF	WARREN L	SCHNEIDT	DANE D
SCHAGUNN	JACK S	SCHOCK	THOMAS J
SCHALLA	ROBERT A	SCHOTT	ALLEN R
SCHALLER	GEORGE T	SCHOUVILLER	LEROY
SCHANCK	LANDRA L	SCHRAUDNER	SHEILA
SCHANTZ	GARY E	SCHREDER	STEVEN F
SCHARA	DIANA L	SCHREINER	BARBARA J
SCHARNHORST	JOE W	SCHROEDER	E J
SCHAUER CONSTRUCTION		SCHROEDER & MICHAEL INC	
SCHEELER	LYNN R	SCHUBERT	GRETCHEN V
SCHEELER	LEON	SCHULTZ	TIM
SCHEETZ	TERRY L	SCHULTZ	RICHARD
SCHEIDLER	ROGER	SCHULTZ	WILLIAM A
SCHEIE CONST INC		SCHULZ	KURT W
SCHEIHING	DANIEL P	SCHULZE	PAUL
SCHEINO	ELIZABETH J	SCHWAB	ROBERT
SCHELL	LLOYD	SCHWAB	RICHARD L
SCHELL	JIM R	SCHWARTZ	CLAY W
SCHELL	CLIFFORD	SCHWARZ	ROGER A
SCHELM	SCOTT B	SCHWARZINGER	WILHELM
SCHERR	ROBERT D	SCHWARZINGER	CORINA R
SCHERRY	RONALD	SCHWEIGER	CHARLES E
SCHESSLER	ROB K	SCHWEIGERT	BLAINE
SCHEUNEMANN	PAULA J	SCHWEIGERT	MARK S
SCHIBILD	EDWARD W	SCHWEIGERT	CHARLES
SCHIELD	WILLIE	SCHWEIGERT	JOHN K
SCHIFF	ROBERT J	SCHWEIGERT	DARROLD B
SCHILLING	BILL	SCHWEITZER	JULIE M
SCHINDLER	DANIEL G	SCHWEND	TANDEEN J
SCHINNOW	JON M	SCHWINDT	DOUG
SCHLAEPPI	NEIL G	SCOLLARD	ROBERT A
SCHLEGELMILCH	DON	SCOLLARD	CURT J
SCHLEINING	ANNA V	SCOTT	TOMMY E

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Last Name	First Name	Last Name	First Name
SCOTT	DARRYL E	SHEPPARD	GERALD M
SCOTT	JACKIE	SHERBEYN	ROBERT L
SCOTT	MARIAN V	SHERMAN	FLORENCE R
SCOTT	GARY C	SHERMAN	EUGENE C
SCSHOTT	DALE R	SHERMAN	JOHN L
SEADER	ROBERT W	SHERMAN	DONALD H
SEADER	DON D	SHERMAN	LESTER J
SEAHOLM	EARL	SHERMAN	JON
SEALEY	PAUL J	SHERMAN	ROBIN
SEAMANS	ROGER L	SHERMAN	TWYLA
SECHLER	THOMAS E	SHERRODD	W C
SEDER	RICHARD	SHERRODD	GARY E
SEDER	DAVID L	SHERRODD	T E
SEDER	NORMA K	SHERRODD	LARRY
SEDER	RON L	SHERSETH	BRAD
SEE	KELLY G	SHERWOOD	RICHARD E
SEED	TAMISE C	SHILHANEK	TIM W
SEGHIERI	GARY M	SHIMEK	DAVID R
SEIBERT	BRIAN D	SHINNERS	STEVEN R
SEIDEL	TIM J	SHIVER	JACK
SEIFFERT	ERROL R	SHOAFF	JOHN W
SEITZ	JAMES	SHOCK	STERLING
SELLARS	ALLEN H	SHOEN	RONALD K
SENN	SHARON R	SHORES	LYLE
SENN	DWAYNE H	SHRADER	RAYMOND W
SERFAZO	ERNEST	SHUCK	DAVE A
SERFAZO	KULLEN A	SHUMAKER	JERRY D
SEVENTH DAY ADVENTIST CHURCH		SHUMATE	JOSH D
SEXTON	DENNIS L	SIAN	STEVEN P
SEXTON	GEORGE	SIAN	HERMAN
SEYMANSKI	RUSSELL L	SIEGFRIED	ANNAMAE M
SEYMANSKI	JOE	SIELER	THOMAS P
SEYMOUR	CLIFFORD C	SIELINSKY	WILLIAM
SHAFER	DALE	SIEMERS	CLYDE F
SHAFFER	JENNIFER	SIEMERS	LARRY L
SHANAHAN	ROBERT J	SIEMERS	DANNY
SHANDY	JACK E	SIEMSEN	IRVIN
SHANNON	DAVE W	SIEPS	DAVID J
SHARBONO	DENNIS E	SIERRA	RAY W
SHAULES	DAVE	SIEWERT	GEORGE A
SHAULES	RICHARD L	SIEWERT	ARTHUR
SHAW	HAL R	SIEWERT	BENNIE E
SHAW	DOYLE	SIEWERT RANCH	
SHAY	MELVIN D	SIKEL	GERALD
SHAY	GERALD	SIMAC	KERRY O
SHAY	ALTA M	SIMON	HOMER
SHAY	LOYD E	SIMON	FRANK J
SHAY	NORMAN K	SIMONICH	PETER J
SHELHAMER	ROBERT S	SIMONS	ROBERT D
SHEPARD	SHIRLEE D	SIMPLOT SOIL BUILDERS	
SHEPHERD CEMETERY		SIMPSON	DOLORES C

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Last Name	First Name	Last Name	First Name
SIMPSON	PHILLIP M	SMITH	VERDIE E
SIMPSON	DAVE W	SMITH	CHARLES H
SIMPSON	WESLEY P	SMITH	WARREN
SINDELAR	ROBERT S	SMITH	LARRY D
SINDELAR	JAMES H	SMITH	DONALD L
SINDELAR	JOEL J	SMITH	CHRIS C
SIPES	ALLAN D	SMITH	SCOTT A
SIRING	RONALD J	SMITH	GREG
SIROKY	CARL R	SMITH	RAYMOND T
SITZMAN	WALTER L	SMITH	CONNIE L
SITZMAN	BEVERLY A	SMITH	BRENT R
SIZEMORE	TRENT	SMITH	BARBARA L
SJOLSETH	DEAN A	SMITH	JAMES L
SJOSTROM	MELVIN J	SMITH	DAVID C
SKAER	RON W	SMITH	MAURICE
SKAGGS	MICHAEL W	SMITH	JAMES D
SKAGGS	GRADY	SMITH	LINDA SUE
SKAGGS	JOSEPH L	SMITH	RANDOLPH
SKILLMAN	BILL	SMITH	SOPHIE
SKINNER	DERRICK D	SMITH	BRUCE W
SKJERET	LOREN B	SMITH	KEATH L
SKOGAS	BRAD S	SMITH	WANDA M
SKORICK	DELVIN	SMITH	VERNON G
SKRAMSTED	JAMES E	SNELLING	RONALD
SKRIBSTAD	JOSEPHINE C	SNOW	BOB G
SLEAFORD	ALAN	SNYDER	DEBORAH A
SLIND	TROY R	SNYDER	RUBY M
SLOAN	DANIEL L	SODERBERG	PAULINE I
SMARSH	KELLY W	SOENS	SHIRLEY J
SMART	HARRY T	SOFT TOUCH DESIGNS INC	
SMELSER	JUDY A	SOLBERG	DAVID L
SMELTZER	EVERETT J	SOLBERG	BILL A
SMILLIE	JOHN D	SOLEM	LYNN C
SMITH	KEVIN M	SOLIE	MARK
SMITH	MARGUERITE	SONGER	PAUL
SMITH	RAYMOND T	SORENSEN	JOHN L
SMITH	BARRY W	SORENSON	PERRY O
SMITH	PAUL R	SORGE	DOUG
SMITH	DUANE D	SOUTHERN AG RESEARCH CENTER	
SMITH	GERALD A	SOUTHWORTH	DAVID D
SMITH	DAVID R	SOUTHWORTH	JOE
SMITH	JACKSON M	SOUTHWORTH	JAMES O
SMITH	RICHARD L	SOUZA	MAC
SMITH	JIM J	SOWERS	SHELBY D
SMITH	RANDY R	SPAH	KELLY
SMITH	MARJORIE G	SPAROVIC	JOHNNY L
SMITH	DEBRA	SPATZIERATH	BETTY JEAN
SMITH	PAUL L	SPAULDING	A DALE
SMITH	AARON G	SPEAR	CAREY E
SMITH	BERNADETTE C	SPEARS	STEVE E

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Last Name	First Name	Last Name	First Name
SPECIALIZED CONSTRUCTION INC.		STEINER	DELBERT
SPECK	LARRY P	STEINER	DARIN
SPEER	RICHARD A	STEINER	DOUGLAS M
SPEIDEL	GENE A	STEINER	EDWIN
SPENCE	KATHRYN A	STEINER	JEFF
SPENSLEY	JANET C	STEINMETZ	CAROL A
SPICKARD	D SCOTT	STEINMETZ	WADE
SPINI	MICHAEL E	STEINMETZ	P JAMES
SPITZER	JIM J	STELLOH	JEFFREY
SPITZER	CALVIN	STENE	EARL H
SPITZER	STEVE W	STENGER	WILLIAM T
SPOONER	ROBERT	STENGER	LEONARD
SPOONER	JIM	STENGER	ZANE P
SPOTTED BEAR	MAX	STENGLEIN	JOE C
SPRAGUE	PHILLIP M	STENULSON	GERALD W
SPRIGLER	THOMAS	STENULSON	G M
ST CYRIL & METHODIUS CHURCH		STEPHENSON	STEVE J
STAHL	JACOB A	STEVENS	STAN K
STAHL	REUBEN P	STEVENS	STAN M
STAHL	RICHARD L	STEVENS	JEFF W
STAHL	WESLEY	STEVENS	DAVE
STAHL	RYAN D	STEVENS	DAN
STAHL	GLENN J	STEVENS	CAROLYN L
STALEY	HARRY R	STEVENSON	JAMES M
STALEY	JAMES	STEWART	MATT J
STANEK	GENE A	STEWART	BRAD
STANEK	DON	STEWART	L E
STANGER	JAY C	STEWART	JAY E
STANHOPE	CLYDE R	STEWART	KIRK D
STANISLAWEK	STAN	STEWART	RICH
STANISLAWEK	NICHOLAS	STIEF	GERALD R
STANLEY	MARTIN	STIEF	JAY R
STAPP	THOMAS L	STIER	PEGGY L
STARK	JIM P	STIFF	DIANNE T
STARK	JOHN A	STILES	CHARLES
STARKWEATHER	JON M	STILLWATER COUNTY	
STARNES	LARRY G	STOCK	LISA R
STATON	LARRY	STOCKMAN BANK	
STEADMAN	MARVIN A	STOICK	MARJORIE E
STEARNS	JACK L	STOLINSKI	GAYLE S
STEELE	ROBERT E	STOLTZ	ROBERT J
STEFANI	TONY A	STOLTZ	MARY M
STEFANIC	RICK	STOLZENBURG	KURT A
STEFANIK	MAXINE	STONE	WILLIAM F
STEFFANS	ROBERT G	STONE	JAKE
STEFFANS	ROBERT G	STONE	TRUBI J
STEFFES	MARK B	STONEHOCKER	DAVID C
STEIGER	ANDY P	STONER	T BENJ
STEIN	KIM	STORY	STEVEN
STEIN	PETER	STOTT	JAMES S
STEINDORF	DANIEL P	STOUT	SHERYL A

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Last Name	First Name	Last Name	First Name
STOVALL	P DOUG	SUTTON	ROBERT J
STOVALL	JAY	SWAIN	JAMES
STOWE	TROY L	SWAN	JOHN T
STOWE	EILEEN E	SWANDAL	SHANE A
STRAHAN	RONDA M	SWANTON	JAMES E
STRAND	DOUGLAS A	SWENGRAY DRILLING INC	
STRAND	MARVIN	SWICK	ROBERT G
STRANGE	MICHAEL I	SWITZER	STAN G
STRATFORD FARMS		SWOOPE	JOHN C
STRATTON	GERRY L	SYKES	DAVID J
STRATTON	DONALD G	SYNDERGAARD	STEVE J
STRAUCH	WILLIAM	SYNEK	MATT
STRAUCH	MELVIN D	T P TRANSPORTATION	
STRECK	ROBERT	TAAPKEN	SONIA M
STRECK	HERMAN G	TALKINGTON	LORI A
STREETER	VERN G	TALMARK	HENRIK L
STRICKLER	BARBARA J	TANGEL	RICHARD E
STRICKLER	TIMOTHY M	TAS ENTERPRISES	
STRIZICH	KORI	TAYLOR	GERALD E
STROBBE	RUBY	TAYLOR	LOUIS A
STROBEL	STEVE J	TAYLOR	DANIEL M
STROBEL	HAZEL	TAYLOR	MARILYN J
STROBEL	BRYAN K	TAYLOR	DEBRA E
STROMME	WARREN G	TAYLOR	GAYLE
STRONG	JUDY	TAYLOR	LYNNE
STRUCKMAN	LINDA D	TAYLOR	BOB S
STRUM	DAVID R	TAYLOR	R PHILLIP
STUDER	RALPH P	TAYLOR	CECIL R
STUNES	DONALD	TEBAY	KEVIN S
SUKO	JIMMIE M	TEDROW	VICTOR
SULLIVAN	ANDREW &	TEEGARDEN	THOMAS N
SULLIVAN	BRAD	TEEGARDEN	TRAVIS P
SULLIVAN	DEAN P	TEETERS	BRUCE R
SULSER	SIDNEY	TEETERS	WILLIAM
SUMMER	BRENT C	TEINI	HUGH
SUMMIT ELECTRIC INC		TEMPERO	CLAIR
SUMP	ROBERT	TENBROOK	CLARIS E
SUND	RAYMOND L	TERPSTRA	ARTHUR
SUNDSTED	JODY S	TERRACIANO	MICHAEL R
SUNDSTROM	BLAINE P	TERRY	LAURALEE E
SUNLIGHT RANCH CO.		TESDAL	MARTIN J
SUNSHINE LIMITED PARTNERSHP		TETER	BONNIE I
SUPER	CHARLES M	TETZLAFF	STEVE
SUPER	GERALD E	THATCHER	JOHN
SUPERIOR BUILDERS LLP		THATCHER	WES L
SURA	MIKE E	THAUT	EDWARD
SURALSKI	WILLIAM	THE BOARDWALK	
SURBER	DEANNA G	THE BRIARWOOD	
SUSOTT	BRIAN E	THE CIGARETTE STORE COPORATION	
SUSOTT	HARVEY L	THE MINNOW BUCKET	
SUTTON	JIMMY S	THE NET-WORKS INC	

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Last Name	First Name	Last Name	First Name
THE PERFECT PLACE		TOOLE	JAMES
THE RIVER'S EDGE		TOPEL	RICHARD H
THELEN	TIMOTHY J	TORPY	DUANE J
THELEN OUTDOORS		TOUR AMERICA	
THEURER	HARRY J	TOWLER	WILLIAM G
THEURER	EDWIN E	TOWNSEND	MURRAY C
THIELEN	JOHN F	TOWNSEND	BOB
THIRUD	MARK	TOWNSEND	WAYNE
THOM	JASON H	TRANKLE	HANS W
THOM	ANGELINE M	TRASK	MARK M
THOMAE	PAUL	TRAUTMAN	GREG A
THOMAE	PAUL C	TRAVER	LLOYD
THOMAS	LAWRENCE O	TREASURE STATE PLUMBING	
THOMAS	TONY L	TREASURE STATE TRANSPORTATION	
THOMAS	DAVID M	TRENK	MARLENE
THOMPSON	STEVEN C	TREUMANN	HANS
THOMPSON	CORI M	TRI PAC INVESTORS INC	
THOMPSON	BRENT D	TRI STATE RECYCLING INC	
THOMPSON	JUNE D	TRIGGS	PATSY D
THOMPSON	JEAN M	TRIMBO	GERALD H
THOMPSON	DALE B	TROMBETTA	ROBERT B
THOMPSON	BRUCE E	TROTTER	TRAVIS L
THOMPSON	BARRY R	TRUDEAU	LARRY
THOMPSON	MARLON	TRUELSON	HENRY K
THOMPSON	LAURIE E	TRUJILLO	VALERIE J
THOMSEN	ROGER	TRYAN	GORDON D
THOR	DAVID J	TSCHACHER	BART M
THORNBERG	JAMIE R	TUCKER	SAM L
THRONBURG	MIKE	TURLEY	AUSTIN A
THRONSON	STEVE J	TURNER	GREGG C
THULESEN	JERRY	TURNER	CLYDE S
THUM	SHEILA	TURNER	CHANNING R
THUROW	WILLIAM H	TURNER	JACKIE J
TIEFENTHALER	BILL M	TURNER	JAMES D
TILLER	WAYNE L	TURNER	KELLY R
TIMM	JANICE	TURNSPLENTY	ROGER
TIMMERMAN	GERALD E	TUTINO	DARRIN
TIMMONS	C DANIEL	TWITCHELL	ORTIE
T-K FARMS LLC		U S POST OFFICE	
TOAVS	JEFFREY	UECKER	ADEN J
TOAVS	WARREN V	UFFELMAN	HARRY LEROY
TOBIN	MAGDALEN	ULRICH	LANCE H
TOBLER	LESLIE G	ULSCHAK	ROBERT
TODD	JACK E	ULSCHAK	ERIC L
TODD	TOM	UNITED HARVEST INC	
TOEDTER	ROBERT J	UNKOVICH	ANTON J
TOLLEFSON	LINDA	UNRUH	GERRY A
TOLZIEN	MICHAEL J	UNTRAUER	LAURINE R
TOMBRINK	DICK J	URBACH	ROBERT L
TOMES	JAMES EUGENE	URLACHER	SCOTT
TOOKE	SCOT J	USHER	BARRY M

Last Name	First Name	Last Name	First Name
V-1 PROPANE		WALDHAUSER	ED
VAIRA	JACK D	WALDHAUSER	BRAD
VALDEZ	JESSE	WALDO	JAMES E
VAN VRANKEN	TIM	WALEN	REID
VAN WAGNER	ROGER B	WALES	ORVAL A
VANCLEEVE	RICK L	WALICSKI	EDWARD W
VANDEGRIFT	GLEN A	WALKER	BRUCE R
VANDENBRINK	RON	WALKER	JAMES D
VANDERJAGT	DAN	WALKKI	JERRY P
VANDERLOOS	WILLIAM E	WALL	HENRY L
VANDERPAN	GORDON	WALL	NORM
VANDERSLOOT	DONA E	WALLACE	JOE L
VANDERSNICK	DEAN T	WALLILA	DALE R
VARELA	WILLIAM E	WALLILA	CARL
VAUGHAN	DAN B	WALLILA	ROBERT
VAUGHN	DAVID J	WALLILA	MARGUERITE P
VDE VRIES	RONDA R	WALLIS	LAMONT
VECHES	TIMOTHY	WALSH	LAWRENCE J
VEEN	ALLEN M	WALTER	LARRY A
VEGGE	DONALD	WALTER	JODY L
VELENCHENKO	GUST	WALTER	TRAVIS L
VERALDI	DONNA	WALTER	WAYNE D
VERHASSELT	RAY J	WALTER	RONALD E
VERLAND	THOMAS	WALTER	PAUL
VERMANDEL	ERNEST	WALTER	KIM L
VERMANDEL	BILLIE	WALTER	DENNIS R
VERMANDEL RANCH INC		WALTERS	LEONARD
VERMILLION	JACKIE	WALTNER	RICHARD H
VERMILLION	LISA A	WALTON	SCOTT K
VERSACE	ENRICO J	WANDLER	JACK V
VETERANS OF FOREIGN WARS		WANG	LINDSAY A
VICHOREK	CHERYL	WARD	DURAND
VICKERY	ROBERT	WARD	MARJORIE
VIGUS	KEIP	WARNER	ROY D
VILLA	DAVID M	WARREN	MARVIN
VINSON	MAVIS	WATERLAND	DOREEN K
VOGEL	DWAYNE	WATERMAN	JUDY
VOLD	STEVEN A	WATROUS	FRANK E
VON KLEECK	R LEWIS	WATSON	C A
VULETICH	MARK	WATSON	DAISY L
WADDELL	AUDREY	WATSON	LARRY
WAGENMAN	GEORGIA L	WATSON	WANDA R
WAGGONER	COLLEEN R	WATTLES	TERRY
WAGNER	PAUL J	WEAST	BARBARA A
WAGNER	DAVID E	WEATHERWAX	JAMES S
WAGNER	DENNIS	WEBB	SAM F
WAGNER	JUSTIN G	WEBB	STEVE B
WAGNER	GERNET W	WEBB	KATHERINE MARY
WAGNER	JULIE	WEBBER	LLOYD J
WAGSTAFF	RAYMOND E	WEBER	KENNETH H
WAIDE	RICHARD H	WEBER	PATRICK G

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Last Name	First Name	Last Name	First Name
WEBER	GARY L	WHEATLEY	MARK
WEBSTER	HENRY D	WHEELDON	JAMES
WEBSTER WATER USERS ASSOC		WHEELER	JERRY A
WEEDEN	WILLIAM W	WHEELER	FRANCIS
WEGNER	GERALD C	WHITCANACK	DARRYL J
WEGNER	EVELYN R	WHITE	CURT J
WEGNER	DUWAYNE	WHITE	PATRICK P
WEGNER	RICHARD E	WHITE	CHRISTOPHER A
WEICHEL	THOMAS R	WHITE	JUDY G
WEIDINGER	EDWARD	WHITE	CHARLIE
WEIDLER	MIKE G	WHITE	AMANDA E
WEIDNER	ROLAND K	WHITE	THOMAS R
WEIGAND	GEORGE T	WHITE	BRUCE
WEIGEL	ERNEST	WHITE	MARK R
WEIGUM	ROLLAND R	WHITELEY	S CRAIGE
WEINZETL	AGNES R	WHITMAN	BRENDA J
WEINZETL	DONALD M	WHITMORE	DENNIS L
WEIS	BILL	WHITTINGTON	MARY C
WEISGERBER	DONALD A	WHITTINGTON	MIKE
WEISS	ARTHUR J	WIBERG	CLARENCE
WEISS	EDWARD J	WICKENS	LEAR A
WELBORN	TERRY	WICKER	DONALD A
WELCH	LORN	WICKHAM	STEVEN E
WELCH	DOUGLAS F	WICKS	CRAIG W
WELCH	JOHN D	WIDDICOMBE	ROBERT D
WELCH	PATRICK G	WIDNER	JIM L
WELCH	LINDA L	WIECHMAN	L R
WELCH	JOHN D	WIELAND	JOHN H
WELDON	JEFFREY A	WIERZBOWSKI	TOM
WELHAVEN	LEIF E	WIGGINS	JOE L
WELK	GERTRUDE	WILCOX	RICHARD C
WELLES	SCOTT F	WILCOX	STACIE A
WELLS	MARK A	WILD ROSE FLORALS	
WELLS BUILT HOMES INC		WILDIN	DANIEL O
WELLS GARDEN ESTATES		WILEY	RICHARD A
WELSH	LORAINE M	WILKERSON	BRUCE E
WELTER	LAVERNA C	WILKINS	JAMES
WENDELN	KATHY L	WILLEMS	J DOUG
WENDTE	RICHARD D	WILLETT	TRACY L
WERNER	MITCH	WILLIAMS	JULIE A
WESCHENFELDER	HENRY	WILLIAMS	MARY M
WEST	WILLARD L	WILLIAMS	DELBERT N
WEST	NADJA M	WILLIAMS	RON L
WEST	JERRY B	WILLIAMS	GEORGE
WESTATE MACHINE COMPANY		WILLIAMS	WILLIE A
WESTERBUR	CECIL	WILLIAMS	THELMA C
WESTERMAN	JAMES	WILLIAMS	DANIEL E
WESTERN PLAINS MACHINERY CO		WILLIAMS	MIKE
WETHERINGTON	CHARLES E	WILLIAMS	KAY
WETZEL	TERRY C	WILLIAMSON	MARK
WHALEY	DAVE	WILLIS	RAY

Last Name	First Name	Last Name	First Name
WILM	KEVIN D	WORM	HAROLD
WILMOT	TIMOTHY B	WRIGHT	JOHN P
WILSON	FRED A	WRIGHT	JACK
WILSON	WADE A	WRIGHT	ROLAND J
WILSON	MARK D	WRIGHT	ROBERT E
WILSON	DON	WRIGHT	JOHN CLAYTON
WILSON	TODD C	WRONA	DARRYL
WILSON	DOUGLAS J	WROOT	VANCE W
WILSON	RONALD L	WRZESINSKI	CRAIG
WILSON	J TODD	WUNDERWALD	RANDALL S
WILSON	BARBARA H	WYANT	LARRY
WILSON	JOHN W	WYMAN	LILLIAN E
WILSON	MAURICE G	WYMAN	LARRY J
WILSON	STEVE L	Y V E C	
WILSON	LOUISE	YAGER	HENRY
WINGER	ROBERT K	YAMAMOTO	NILS
WIRKMAN	JERALD W	YANCHISIN	MYRAL
WIRTH	JEFF R	YARLOTT	DAVID F
WISE	JAMES R	YATCH	CHAD R
WITTENBERG	TIA A	YEGEN	PETER
WITTMAN	SHIRLEY	YEGEN	PETER
WITTMAN	HAROLD	YELLOWSTONE VALLEY PARTS	
WITTMAN	JON	YERGER	RUSS D
WITTMER	DANIEL A	YERGER	GARY
WITTMER	WILLIAM	YODER	JOHN ARLEN
WITZEL	JOHN A	YORK	SCOTT K
WOIRHAYE	FRANK J	YOST	DONALD C
WOLD	J O	YOST	GARY D
WOLD	JOHN	YOST	EUGENE J
WOLF	CARL	YOUDE	RON E
WOLF	SHELDON	YOUNG	STEVE S
WOLF SHELDON CONSTRUCTION		YOUNG	DANIEL R
WOLFF	BETTE M	YOUNG	JUSTIN
WOLFF	LANE A	YOUNG	DOUGLAS
WOLFF	H K	YOUNG	MINNIE B
WOLLENBURG	STEVEN	YURIAN	DENNIS S
WOLSKE	ROBERT E	ZACCAGNINI	GARY
WOLVERTON	SCOTT R	ZAHLLER	ALAN
WONDER	BEVERLY J	ZAHM	ROY W
WOOD	GREG L	ZAHM	ROY
WOOD	ERVIN	ZAINO	BEN J
WOODARD	JEFF D	ZAPATA	VINCENT B
WOODROCK	JOAN M	ZAPP	JAMES F
WOODROCK	MAE W	ZARNDT	CARL
WOOG	JIM	ZASTROW	JEFF M
WOOLLEY	ROSS	ZEILER	RONALD
WOOLSEY	WILLIAM R	ZEILER	WILMA J
WOOLSEY	ALBERT F	ZEILER INC	
WORDEN	JEFF	ZEINSTRA	AL W
WORDEN MOTORS		ZEITNER	DOUG W
WORDEN OPEN BIBLE CHURCH		ZEMLISKA	MILO J

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Last Name	First Name	Last Name	First Name
ZENT	CAMILLE A	ZIER	DANIEL B
ZENTNER	LEO	ZIMMER	PAT L
ZENTNER RANCH LP		ZIMMERMAN	JOHN C
ZENTZ LUMBER COMPANY		ZIMMERMAN FAMILY LTD	
ZICKEFOOSE	TEAL L	ZOLLINGER	TERRY J
ZICKEFOOSE	VERNON R	ZUBACH	KARI L
ZIEBARTH	SILVER A	ZUCK	LESLIE H
ZIEGLER	VIOLA M	ZUCK	MICHAEL J
ZIEGLER	JAMES A	ZUCK	JOHN G
ZIELSDORF	MARVIN T	ZWEMKE	LEO

Montana Environmental Information Center Postcard

A second set of postcards opposing the HGS was distributed by the Montana Environmental Information Center (MEIC). This postcard reads (italics added):

Dear Ms. Johnson:

I'm writing to express my concerns about the proposed Highwood Generating Project and the draft EIS. As designed, the project would needlessly threaten public health and environmental quality by emitting thousands of tons of regulated air pollutants each year, and millions of tons of global warming pollution. The draft EIS failed to independently assess the real need for this project and the economic risk of becoming overly dependent on a single fossil-fuel based resource. The EIS also needs to properly analyze cleaner alternatives working in combination.

Four comments were extracted from this postcard and divided among the comment categories shown in Table L-3 below. Because their numbers could be accommodated, signatories to this postcard who also hand-wrote in their own comments on the postcard are included in Tables L-3 and L-4 below. Table L-2 below lists the names of those who sent the MEIC postcard to DEQ.

Table L-2. Senders of the MEIC Postcard Expressing Concern About the HGS and DEIS

Last Name (s)	First Name(s)	Last Name (s)	First Name(s)
ADAMS	JANE	BOETTCHER	ROBERT
ALBERTSON	JOYCE	BORT MD	ROBERT F
ALLAIRE	F JOHN & HELENE	BORTON	CHRISTOPHER
ANGELL	JOE	BOWERS	JERRY C
ARENSBERG	VIRGINIA	BRACKETT	GLENN K
ARMSTRONG	APRIL	BRANDBORG	BEKI G
ARNOLD	JANE K	BROWDER	SHARON
BAIZ JR	THOMAS A	BROWN	CLAUDIA S
BALDWIN	SCHERRY	BROWN	RAYMOND D
BARNES	GLENDA	BROWN	GARY
BARNETT	JIM	BROWN	SALLY
BARNGROVER	JAMES	BUCKLEY	MURIEL
BARRETT	HEIDI	BUCSIS	RICHARD
BAXTER	BRUCE	BURGESS	HENRY
BECK	BOB	BURMEISTER	MARION R
BECKER	MICHAEL & STEPHANIE	BUSEY	SARA
BENHAM	JANICE R	BUTCHER	MARGARET ANN
BENNETT	DONNA C	BYRNE	KERRIE
BERGSTEIN	DIANE	BYRON	TIMOTHY
BERTELSEN-JAMES	JAN	CADY	KATIE
BIANCHI	DON	CAMPBELL	DOUGLAS
BISHARAT	MARTHA	CAMPEAU	JACKLYN
BLAKE	JO ANNE	CAPLETT	JENNA
BLANDING	TERESE & KEITH	CASE	LORRAINE S
BLOOD	W A	CASICK	MATT
BLOOM	ELIZABETH	CASLER-FAGRE	ANN

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Last Name (s)	First Name(s)	Last Name (s)	First Name(s)
CAUGHLAN	CHARLES	FOOLERY	TOM
CENTER	DAVID	FOREHAND	DICK
CHAMBERS	NONA	FOSTER WEST	JACKIE & MICHAEL
CHESSIN	M	FOULKE	TERESE
CHRISTENSEN	L	FOX	WENDY C
CLAWSON II	WILLIAM E	FREDLUND	DALE
CLAYPOOL	DUANE	FREESTONE	ANDREW
CLEMENT	MERYLE	FREISTADT	ROBERT T
COLLINS	CAROL	FRYER	JOHN W
COLVIN	SUSAN C	G	THOMAS G
CONRAD	TERRY & GERMAINE	GARRITY	JOHN PHILLIP
COOK	MARGIE	GASKIN	LE ROY
COSNER	MARK	GESUALE	PETER M
COULTHARD	LORNA	GILBERTSON	NANETTE
CROSS	LOUISE	GILMAN	GINNY
CROWLEY	LOU ANN	GLAIN	DON
DAGENAIS	PHYLLIS	GLINNWATER	TREASA
DAVENPORT	TERRY D	GNIADEK	STEVE
DAVIS	AMY F	GOODMAN	JANA D
DAVIS	CRAIG T	GOULD	WILLIAM
DECKER	EILEEN S	GRAFF	JON
DEVENY	CHRISTINE	GREEN	MERLE
DEWEESE	GENEVIEVE	GREENE	JAMES D
DIEMER	EUGENE	GREGOVICH	GAYLE
DONOVAN	DANIEL	GREYMORNING	HELEN
DREYER	CLARICE	GRUDEN	FRANK R & DOROTHY M
DUNN	ANDREA	GUTKOSKI	JOE
ECKLUND	RICHARD & ALMA	HAIGHT	ROBERT D
EDWARDS	PAUL F	HAINSWORTH	PAMELA
EGGEN	ERIC	HALLER	LAURIE KAYE
ELLINGSEN	VALLEY	HAMERSLEY / HARKINS	DENISE & JAMES
EMMER	KEVIN	HAMILTON	MARY B
ENGELLANT	GREGORY	HAMMER	KEITH
ENGELSON	NORMA	HANSEN	KATHLEEN
ERICKSON	CHARLENE	HANSEN MD	JAMES G
ERICKSON	RON & NANCY	HARDEY	BECKY
ESTAR	MARIE B	HARDING	GRACE & WARREN
ETCHART	PATRICIA S	HARDING	THOMAS
EVERINGHAM	CATHERINE B	HARDY	CHARLES E
FALSTAD	BEVERLY	HARKINS	LESTER L
FARMER	PAM	HARMATA	ALAN
FAULEY	RAE MARIE	HARPER	SHANNON
FERENSTEIN	JENNIFER	HARRIS	DON
FICHTNER	SHEILA	HASH	BONNIE
FIELD	CHRIS	HASTINGS	TERESA I
FISHER	R G	HAUGE	BARBARA B
FLEISCHER MD	LISA	HAUMBERGER	HANS
FONTANA	JOAN R	HAY	JOHN

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Last Name (s)	First Name(s)	Last Name (s)	First Name(s)
HEFFERN	ROY	KORFANTA	EDNA M
HELPS	JEAN	KROOK	MARVIN E
HENTGES	ROBERT	KULISH	CAROL
HERBIG	LOIS	KULSENG-HANSEN	MELISA LEE
HICKEY	CURTIS	LABUFF	LORNA
HILL-HART	J	LAGERSTROM	MARK
HILL-HART	RUSSELL B	LAMBERT	KIRBY
HINCKLEY	SARA S	LANDINI	RICHARD
HODGES	IVELONE L	LARSEN	DAVID
HOLE	HARFIELD	LATTERELL	KIM L
HOLMES	KRYS	LAUGHING WATER	
HOLZ	MOLLY	LAUTERBACK	MARTHA
HOOKER	VILATE B	LEACH	COLLIN
HOUSER	MARJORIE M	LEBAR	JAMES H
HOWE	CHARLES M	LEOW	MATT
HUAT	NOREEN	LIGHTFOOT	LINDA
HUDSON	ANN E	LLOYD	KATHY
HUDSON	SHIRLEY J	MACDONALD	NANCY
HUGHES	ROBERT D	MANLEY	JIM
HULL	ANNIE	MARBLE	HARRIET
HULTGREN	VIVIAN	MARTIN	LARRY J
HUNT	KATE	MARTIN	R CRAIG
HURDLE	JOAN	MARTINIAK	MARITA
HUTCHISON	ALICE F	MATHESON	MARJORIE
IRWIN	SHELLEY	MAZZOLA	DONALD
ISRAEL	NELLIE	MCCAULEY	GEORGE
JACKSON	RALPH	MCGILLIURAY PH D	ROBERT G
JAYNES	BILL	MCLANE	NANCY
JENNINGS	GERRY	MCLARTY	MARGRITA
JESKE	GERRIE	MCMILLAN	JANET
JETER	B ELLOIE	MCNEAL	HARRY
JOHNSON	VICTOIRE & JERRY	MERRIFIELD	EDWARD
JOHNSON	ANNE	MERRILL	DAVID
JOHNSON	ELI	MEST	JOHN S
JOHNSTON	JOAN	MEYER	ROLANE
JORON	LEO	MIDDAGH	LARRY
JOURDONAIS DVM	BECKY L	MONTAGNE	JOHN
JUDGE	CAROL	MUELLER	ANGELA
KEHLER	BILL	MURPHY	ELLYN
KENT	PAUL & VICKI	MURRAY	PENNY
KETTERMAN	CHARLES N	NEFF	RICHARD A
KIELY	JUDITH M	NELSON	EDWARD J
KIEROSN	MOLLIE	NELSON	LEIF
KILLION	JERALD	NICKMAN MD	NORMAN J
KINGSLAND	MARGARET C	NIGH	SARAH P
KINUCAN	KEN & EDITH	NOBLES	E TERRILL
KINZFOGL	KATHY	NOONAN	ROBERT C
KLINGMAN	VERN L	OBRIEN	MARY B
OCONNOR	SUSANNE	SCHARF	DARRELL

Last Name (s)	First Name(s)	Last Name (s)	First Name(s)
OTOOLE	JAMES J	SEYMOUR	RANDY
PALMER	SHIRLEY	SHACKLETON	RAY
PARKS	BRIAN	SHARP	PATRICIA
PAULSEN	JIM	SHERMAN	ROGER
PAULSEN	GEORGEANNE	SHORS	RICHARD A
PERELMAN	KENT B	SHOVERS	BRIAN
PEURA	RACHEL	SHURA	LANA
PIERSON	TONA M	SICOTTE	PATRICIA C
PILGRIM	KRISTIE L	SIKORA	EDWARD J
PLOUZEK	MORLENE	SIMMONS	PAT
POND	ROBERT W	SMITH	IRMELI
PRATT	GERTRUDE	SMITH	NAOMI
PUGH	DALE & JEANNE	SCHARF	DARRELL
RACHLIS	SANDRA	SCHEUERING	PAULA
RAFFETY	ROBERT	SCHMIDT	LOUIS
REAM	CATHERINE	SCHOONEN	TONY & MARGARET
REAM	TARN	SCHWARZKOPF	ELEANOR
REDMOND	CARMEN D	SECREST	AMY
REINHARDT	HOWARD	SEEL	MAC
REITER	BARB	SETTER	MARION & J
RICHARDS	PAUL	SEYMOUR	RANDY
RICHARDSON	GAIL & JOHN	SHACKLETON	RAY
RIDER	ANNA MARIE	SHARP	PATRICIA
RIESCH	PAULA	SHERMAN	ROGER
RIVERS	JANET C	SHORS	RICHARD A
ROBBINS	MARLA A	SHOVERS	BRIAN
ROBERTS	JULIA B	SHURA	LANA
ROBERTS	CAROL	SICOTTE	PATRICIA C
ROBERTS	VICTOR	SIKORA	EDWARD J
ROBERTS	RICHARD & JANET	SIMMONS	PAT
ROCKAFELLOW	R N	SMITH	IRMELI
ROGERS	ROXANNE	SMITH	NAOMI
ROOT	JAMES	SMITH	SARA
ROSELL	ANTOINETTE	SMITH	JUDY
ROSS	BARBARA	SMITH	JEAN E
ROWLAND	MARY	SMITH	ANNICK
RUMLEY	CONSTANCE M	SMITH	PENDENCE & PRUDENCE
SANDERS	PATRICK M	SMITH	JEFFREY
SAVINSKI	MARK T	SOEHREN-LAWRENCE	DOUGLAS & JOETTA
SAYLOR	JULIA M	SOUTHALL MD	KENDALL CHRIS
SCHARF	DARRELL	SPAGNOLI	NANCY
SCHEUERING	PAULA	SPETTIGUE	E B
SCHMIDT	LOUIS	SPEYER	TIMOTHY
SCHOONEN	TONY & MARGARET	STAIGMILLER	JUDY
SCHWARZKOPF	ELEANOR	STAUFFER	KATHRYN
SECREST	AMY	STAUFFER	PHILIP N
SEEL	MAC	STENZ	ROBERT W
SETTER	MARION & J	STEPHENS	RUTH

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Last Name (s)	First Name(s)	Last Name (s)	First Name(s)
STEVENS JR	BOB	WALTNER	RICHARD & BONNIE
STEVENSON	CHARLES K	WANG	LINNEA M
STOLL	ILEN	WARD	DORRIS
STUTZBACH	STEPHEN J	WAREHIME	HELEN
SULLIVAN	THOMAS Q	WATSON	VICKI
SULLIVAN	ROGER	WEBER	GORDON G
SWEARINGEN	WILL	WEBSTER	JACK
SYKES	JO	WEEKS	JEAN G
TAYLOR	ELAINE E	WELLES	JO
TAYLOR	MARY M	WELTZIEN	O ALAN
TEAGUE JR	CHARLES P	WERNER	JOHN K
THOMAS	DAVID E	WHITE	MARSHALL
THOMAS	LORRY	WHITNEY	DONNA M
TOMASLELOSKI	NINA	WILCOX	PHYLLIS
TOMICH	ROBERT	WILCZYNSKI	PETER T
TRAUTH	CLAIRE E	WILLIAMS	WENDY
TROSELLO	MARIBETH	WILLIAMS	JOHN & BEVERLY
TUNNOCK	SCOTT	WILSON	SETH
TURMAN	KATHLEEN	WILSON	HELEN F
VAN ARSDALE	SCOTT	WILSON	DAVID K
VASQUEZ	NED	WILSON	CLAIRE
VILLINGER	BEVERLY	WINTHROP	JESSUP
VINCENT	VIRGINIA	WOOD	DORIS W
WALDRON	SUSAN	WYATT	WILLIAM H
WALLACE	STEPHEN	YOUNG	BRUCE A
WALLER	HELEN	YOUNG	ALISON

Citizens for Clean Energy Petition

Finally, 1,041 persons signed a petition circulated by Citizens for Clean Energy in Great Falls against the HGS. The petition reads as follows (italics added):

PETITION OPPOSING PROPOSED GF COAL PLANT

TO: Great Falls City Commissioners, Cascade County Commissioners, Montana DEQ, U.S. Department of Agriculture, Senator Conrad Burns, Senator Max Baucus, Rep. Dennis Rehberg

WE, THE UNDERSIGNED, wish to voice our opposition to the proposed Great Falls coal plant (Highwood Station). We are opposed to the building of any coal plant; we believe that the City of Great Falls would be better served by developing various renewable energy resources such as wind and solar power, and filling additional power needs by entering into long-term power contracts with the owners of the dams in Great Falls. In light of global warming, we believe it is irresponsible to build a plant which contributes to global warming and which may not be economical to operate in the future.

If a coal plant is to be built, we insist that it actually be the best available technology, to minimize or eliminate pollution and greenhouse gases, and mitigate costs by creating salable *byproducts. We believe Integrated Gasification Combined Cycle (IGCC) is the technology to use.*

List of Comment Categories and Codes

Table L-3. List of Comment Categories and Codes

Subject Category	Category Code	Topics Covered By Comments	Page number
General	GEN-100	General comments on DEIS and Proposed Action	L-80
Purpose and Need	PUR-200	Stated need for a 250-MW power plant	L-121
Alternatives	ALT-300	General comments on treatment of alternatives	L-136
	ALT-301	Efficiency and conservation	L-145
	ALT-302	Solar energy	L-148
	ALT-303	Wind energy	L-150
	ALT-304	Hydroelectric energy	L-157
	ALT-305	Integrated Gasification Combined Cycle (IGCC)	L-158
	ALT-306	Other potential power plant locations in state	L-169
	ALT-307	No Action Alternative	L-171
	ALT-308	Proposed Action (Highwood Generating Station)	L-172
	ALT-309	Alternative Site (power plant at Industrial Park site)	L-179
	ALT-310	Salem site alternatives dismissed	L-182
Soils, Topography and Geology	STG-400	Erosion, changes in landform, soil contamination	L-183
Water Resources	WAT-500	Water quality and quantity issues	L-186
Air Quality	AIR-600	General comments on air quality impacts	L-198
	AIR-601	Criteria pollutants	L-209
	AIR-602	Hazardous Air Pollutants (HAPs) including mercury emissions and effects	L-217
	AIR-603	Greenhouse gas emissions and climate change	L-239
	AIR-604	Visibility impairment from air pollutants	L-252
Biological Resources	BIO-700	Biological resources impacts, including flora and fauna	L-255
Acoustical Environment	ACO-800	Noise-related issues	L-260
Recreation	REC-900	Effects on outdoor recreation	L-262
Cultural Resources	CUL-1000	Great Falls Portage National Historic Landmark and other cultural issues	L-264
Visual Resources	VIS-1100	Visual resource impacts and aesthetic issues	L-278

Transportation	TRA-1200	Transportation impacts and issues	L-280
Farmland and Land Use	FLU-1300	Effects on farmland, and planning and zoning issues	L-286
Waste Management	WAS-1400	Handling and disposal of wastes like ash	L-289
Human Health and Safety	HHS-1500	Effects on human health from power plant construction, operation, and contaminants	L-294
Socioeconomics	SOC-1600	Socioeconomic issues, including income, financing, employment, tourism, and quality of life	L-299
Environmental Justice/Protection of Children	EJP-1700	Effects on minorities (such as Native Americans), low-income populations and children	L-307
Cumulative Impacts	CUM-1800	Cumulative impacts in all resource areas	L-313

Table L-4. Alphabetical List of Commenters and their Comments

Name	Type of Comments*	ID#	Comment Codes
Ackerman, Terri	W	C190	100-19, 604-1, 1700-5
Albertson, Joyce	W	C274	100-19, 603-1, 1500-2
Allaire, Robin	O	C1	300-1, 600-1, 602-1, 603-1
Alvarez, Abel	W	C206	100-19, 602-1, 602-5
Anderson, David	W, O	C2	100-1, 308-2
Anderson, Lynn	W	C311	100-19, 300-1
Anderson, Sharon	W	C3	100-2, 100-3, 100-4, 602-1
Arca, Ronni	W	C200	602-5
Armstrong, Henry L.	W	C269	100-40, 305-1, 1700-1
Armstrong, Leila	W	C305	100-19, 200-9, 300-2, 600-1
Armstrong, Stuart L.	P	C253	200-9, 300-4, 603-1, 1500-2
Azure, Vickie J.	W	C196	100-19, 1700-5
Baiz, Claire	O	C4	300-1, 303-1, 305-1, 603-1, 603-2, 1600-1
Baker, Mallory	W	C194	100-4, 100-19, 300-1, 602-1
Ball-Giep, Debbie	O	C5	100-5, 303-2, 304-1, 308-2
Baxter, Bruce	P	C215	200-9, 300-4, 603-1, 1500-2
Beartooth Electric Cooperative, Carbon County Commission – John Prinkki	O	C6	308-2, 603-3
Beartooth Electric Cooperative – Bob Walker	O	C7	200-1, 200-2, 200-3
Becker, Julia	W	C8	100-3, 100-6, 100-7, 100-8, 100-9, 100-10, 200-4, 300-1, 300-2, 300-3, 302-1,

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Name	Type of Comments*	ID#	Comment Codes
			305-1, 305-2, 307-1, 307-2, 308-3, 308-4, 500-1, 500-2, 500-3, 600-2, 600-3, 600-21, 603-4, 604-1, 700-1, 800-1, 900-1, 1000-1, 1300-1, 1400-1, 1400-2, 1600-1, 1600-2, 1600-3, 1700-1, 1700-2
Bell, James P.	W	C248	602-1, 603-1, 604-1, 1000-21, 1600-14
Bennett, Dan	W	C166	300-2, 300-4
Bergstein, Diane	P	C236	100-14, 200-9, 300-4, 603-1, 1500-2
Bernard, Joanne	O	C9	300-2, 306-1, 307-1, 700-1, 1200-1
Biehl, Daniel S.	W	C10	100-11, 100-12, 200-5, 200-6, 301-1, 303-3, 303-4, 307-1, 602-31, 603-5, 700-2, 1500-2
Bison Engineering – Jeff Chaffee	O	C11	601-1, 1500-1
Bjornlie, Harvey C.	W	C12	200-5, 200-7, 305-2, 603-1
Bjornlie, Sheila	W	C13	100-14, 100-15, 304-1
Blaine County Farmers Union – Barb Hauge	W	C162	100-19
Blane, Monica J.	W	C199	100-19, 1500-2
Blood, W.A.	P	C210	200-9, 300-4, 603-1, 1500-2
Bocock, Charles	W, O	C14	100-16, 100-17, 200-8, 500-2, 500-4, 602-1, 602-2, 602-3, 1000-2, 1300-2, 1400-1, 1400-3, 1400-4, 1400-5
Boilermakers in Montana, Local 11 – Robert K. Winger	W	C267	100-1, 100-5, 1600-11
Boysun, Randal J.	W, O	C15	5-100, 25-100
Bradley, Patricia	W	C16	100-14, 100-19, 200-4
Breeden, Janet	P	C278	200-9, 300-4, 603-1, 1500-2
Burgess, Bill	W	C331	100-16, 601-2, 602-1, 1500-2
Burgess, Cindy J.	W	C314	602-1, 603-1, 603-18
Burns, Tracy	W	C295	100-19, 200-9, 300-4, 603-1, 1500-2
Cabigas, Leah	W	C201	602-5, 1700-2, 1700-5
Carman, Denita	W	C176	602-1, 602-5
Carrick, Patricia	W	C17	100-14, 100-20, 200-9, 300-4, 601-2, 1500-2
Chippewa Cree Business Committee	W	C277	100-19, 1700-2
Chippewa Cree Tribal Council, Montana Legislature – Jonathan Windy Boy	O	C18	100-15, 100-21, 600-4, 1400-1
Citizens for Clean Energy – Cheryl M. Reichert	W	C20	100-15, 100-17, 100-19, 100-22, 100-23, 100-24, 100-25, 200-4, 200-10, 200-11, 200-12, 200-13, 200-14, 200-15, 200-16,

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Name	Type of Comments*	ID#	Comment Codes
			303-20, 305-2, 305-3, 305-4, 307-1, 308-5, 309-1, 500-3, 601-2, 602-1, 602-3, 602-4, 602-5, 603-1, 603-2, 603-6, 604-1, 700-1, 900-1, 1000-2, 1100-1, 1200-1, 1400-1, 1600-1, 1600-2, 1700-1, 1700-2
City of Great Falls – Donna Stebbins	O	C19	308-2, 602-1
City of Great Falls/Cascade County Historic Preservation Office – Ellen Sievert and Ken Robison	W	C180	1000-12
City of Fort Benton – Mayor Richard D. Morris	W	C315	200-3, 300-1, 500-3, 603-1, 1500-1
City of Great Falls – John Lawton	O	C21	200-17
City of Great Falls – Jordan Love	O	C22	100-26
City of Havre – Councilwoman Emily Mayer Lossing, Ward IV	W	C329	100-19, 300-1, 602-1
Clark, Gerald R.	W	C317	300-2, 303-1, 603-2, 1001-2, 1200-2
Clean Air Task Force – John W. Thompson	W	C23	300-2, 305-1, 305-2, 305-5, 305-6, 305-7
Click, C. J.	W	C322	100-19
Collins, Carol	O	C24	100-27, 303-1, 305-6, 305-7, 307-1, 600-3, 1600-1
Crawford, Wayne and Ann	W	C257	100-19
Crete, Ronald A.	W	C25	100-28, 300-2, 300-5, 305-2, 307-1, 603-4
Dagenais, Phyllis	P	C218	200-9, 300-4, 603-1, 1500-2
Dakin, Bill and Sarah	W	C297	100-19, 100-82, 200-5, 303-1, 603-1
DayChild, Henry, Sr.	O	C26	200-15, 300-1, 600-4
Decker, Eileen	P	C213	200-9, 300-4, 603-1, 1500-2
Deligdisch, Andree	O	C27	100-29, 303-5, 500-5, 600-3
Denny, Aldean	W	C183	1700-5
Department of the Interior (U.S.) – Robert F. Stewart	W	C28	500-6, 500-7, 500-8, 500-9, 600-5, 800-2, 1000-3, 1000-4, 1000-5, 1000-6, 1000-18, 1100-2, 1100-3
Deveny, Christine	P	C227	200-9, 300-4, 603-1, 1500-2
Dieruf, Bob	W	C255	100-4
Dieruf, Carli	W	C256	100-4
Dieruf, Lenore	W	C308	100-13, 100-19, 300-1
Dirkson, Pat	W	C296	200-3, 600-22

Name	Type of Comments*	ID#	Comment Codes
Dobyns, Kris	W	C332	100-48
Dolman, Aart	W, O	C29	100-7, 100-14, 100-30, 100-31, 302-2, 303-6, 600-3, 602-6, 1000-7, 1000-8, 1000-9, 1400-1, 1400-6
Dopler, Pat	W	C30	200-5, 301-6, 302-3, 303-7, 603-7
Downs, Dan	O	C31	100-32, 300-6, 303-2
Duran, Willdette M.	W	C203	602-5
Durham, Margery	W	C32	303-8, 308-4, 1600-4
Dutchak, Nancy M.	W	C259	100-20, 305-1
Eagleman, Ira	W	C192	100-19, 1700-2
Eckenstein, Vicki	W	C33	308-7, 600-6, 601-3, 603-4, 604-1, 1600-5
Elden, Cari	W	C291	100-19, 303-1
Electric City Power, Inc. – Coleen Balzarini	W, O	C34	200-17, 200-18
Ellingsen, Valley	P	C214	200-9, 300-4, 603-1, 1500-2
Emerson, Jim	W	C35	100-14, 100-24, 500-3, 603-1
Engleson, Jerry L.	W	C292	100-13, 200-5, 900-1
Enk, Michael	W	C334	100-13, 100-16, 200-9, 300-4, 500-3, 603-1
Environmental Protection Agency (U.S.), Region 8 – John Wardell	W	C36	100-33, 100-34, 303-19, 305-2, 305-8, 306-1, 306-2, 308-8, 400-1, 500-2, 500-5, 500-10, 500-11, 500-12, 500-13, 600-7, 601-4, 601-5, 601-6, 601-7, 601-8, 602-7, 603-8, 603-9, 604-2, 700-3, 700-4, 700-5, 1000-10, 1200-3
Erickson, Pamela	W	C335	100-19, 600-1, 603-1
Evans, Allen	O	C37	100-5, 100-35
Federal Aviation Administration – Clark Desing	W	C181	1200-19
Federspiel, Laura	O	C38	100-14, 600-3, 1500-2, 1600-6
Ferenstein, Jennifer	P	C243	200-9, 300-4, 603-1, 1500-2
Fergus Electric Cooperative – Joe Dirkson	W, O	C41	100-1, 100-5, 100-36, 600-22
Fergus Electric Cooperative – David Dover	O	C39	100-36, 200-3
Fergus Electric Cooperative – Robert Evans	O	C40	200-3
Fergus Electric Cooperative – Guy Johnson	O	C42	100-5, 200-3, 200-19
Fergus Electric Cooperative – Joe Pirrie	O	C43	100-35, 303-2
Fergus Electric Cooperative –	W	C275	100-1, 1600-11

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Name	Type of Comments*	ID#	Comment Codes
Leo Solf			
Fergus Electric Cooperative – Scott Sweeney	W, O	C44	100-18, 100-36, 305-9, 600-1
Fiers, Mary F.	W	C289	604-1
Fiers, Thomas A.	W	C290	604-1
Fisher, Carol	W	C302	100-14, 100-19, 100-16, 300-1, 500-3, 602-1
Fisher, Joanne	W	C167	100-16, 600-3, 603-2, 1500-2, 1700-1
Fisher, Richard	W	C168	100-14, 100-16, 300-3, 1500-2, 1700-1
Floyd, Jaybe	W	C45	300-2, 300-3, 303-3, 306-1, 800-3, 1600-1
Fort Belknap Indian Community – Julia Doney, President	W	C320	100-19, 100-28, 307-1, 602-2, 1700-2, 1700-6
Foster, Maureen	W	C304	100-13, 100-19, 300-2
Fraser, Scott	W	C46	100-14, 100-37, 300-2
Fredlund, Dale	P	C232	200-9, 300-4, 603-1, 1500-2
Freyholtz, Mert	O	C47	308-9, 600-8
Freyholtz, Vicki	O	C48	100-14, 100-38, 100-39, 300-3, 306-3, 602-8, 603-1, 603-2
Gallagher, George	O	C49	100-5
Gardipee, Kenneth	W	C198	100-19, 1700-2, 1700-5
Gessaman, Kathleen Z.	W	C50	100-15, 200-4, 301-1, 302-4, 307-1, 307-3, 308-4, 601-2, 601-3, 601-9, 601-10, 602-1, 602-9, 1000-11, 1800-1
Gestring, Charles	W	C288	300-1, 603-1
Gibson, Susan	W	C281	100-15
Golder, Nick	W	C328	100-19, 300-1
Good, Mark	W	C164	200-5, 303-3, 602-1, 603-1, 603-2, 603-6
Gotshalk, Richard	W	C319	100-16, 200-9, 300-4, 600-1, 603-1, 1500-2
Gniadek, Steve	P	C217	200-9, 300-4, 603-1, 1500-2
Grant, Charles	O	C51	100-40, 300-4, 1500-3
Gray, Randy	O	C52	100-36, 200-3, 305-9
Gupton, Liz	W	C283	100-19, 300-2, 301-1, 603-1
Hamlett, Brad	O	C53	100-5, 500-14, 600-9
Hankins, Lester (Butch)	W, O	C54	100-14, 100-19, 100-23, 100-41, 200-8, 1500-2
Hansen, Laulette L.	W	C336	100-19, 100-48, 300-1
Hanson, Victor H.	W	C55	100-41, 500-3
Hardiman, Lisa Lotte	W	C165	100-3, 200-5, 305-3, 500-3, 600-3, 602-1, 700-1
Hari, Robert	W	C163	100-5, 100-37

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Name	Type of Comments*	ID#	Comment Codes
Hastings, Teresa	P	C239	200-9, 300-4, 500-3, 603-1, 1500-2
Haug, Catherine	W	C56	100-14, 100-20, 200-4, 1500-2
Heffern, Jacquie	W	C279	100-4, 100-19, 1500-2
Heffern, Roy	P	C240	200-9, 300-4, 303-1, 603-1, 1500-2
Helm, Gary	O	C57	100-36, 200-3, 307-4, 600-4
Helvey, Patricia B.	P	C245	200-9, 300-4, 603-1, 1500-2
Hemstad, Phyllis	W	C171	100-19, 100-49, 307-1
Henderson, Janet	W	C58	100-14, 100-16, 300-2, 303-9, 307-1, 500-3, 1000-1
Henderson, Noel	W	C293	100-48
Henneford, J. R.	W	C264	100-14, 300-1, 300-3, 305-1
Henneford, Nancy M.	W	C263	100-14, 100-19, 300-1, 305-1
Hilden, Alan D.	W	C59	100-14, 200-5, 300-4
Hines, Jessica	W	C60	100-19, 308-3, 601-2
Holmes, Krys	P	C224	200-9, 300-4, 603-1, 1500-2
Horn, Claud A. and Brenda	W	C179	100-14, 100-19, 303-1, 600-1
Horton, Daniel P.	W	C205	100-19, 300-19, 302-4, 304-1
Howe, Charles M.	P	C228	200-9, 300-4, 603-1, 1500-2
Hoy, Mike	W	C61	100-20, 200-9, 300-4, 308-10, 603-1, 1500-2
Hubbard, John	O	C62	100-42, 1500-2
Humphrey, Lucretia	W	C63	100-19, 300-2, 303-1, 1500-2
Hyndman, Donald W.	W	C64	300-5, 300-8, 305-3, 603-1, 603-2
International Electrical Workers 33 – Curtis Sweet	O	C65	603-10
International Union of Operation Engineers, Local 400 – Earl Salley	O	C66	100-5
James, W. Dudley	W	C327	100-7
Jennings, Doris	W	C301	100-4, 100-19, 300-1
Jennings, Gerry	W	C284	100-79, 300-3, 602-1, 603-1, 1600-1
Johnson, E.A.	W	C67	100-5, 100-36
Johnson, Jan	W	C254	100-4
Jolley, Mary	O	C68	100-7, 305-6, 305-10, 900-1
Jones, Cedron	W	C69	100-19, 100-43, 302-4
Jussila, Neil R.	W	C324	100-5
Kaufmann, Christine	W	C70	100-20, 603-2
Kendy, Eloise	W	C71	100-44, 500-3, 500-5, 500-16, 500-17
Kent, Paul and Vicki	W	C72	100-14, 100-19, 200-4
Kingsland, Margaret C.	P	C220	200-9, 300-4, 603-1, 1500-2
Kington, Jacquelyn	P	C310	200-9, 300-4, 603-1, 1500-2

Name	Type of Comments*	ID#	Comment Codes
Klingman, Vern; Russ Doty, Tom Towe	W	C73	300-3, 305-1, 305-6, 305-11
Klobofski, Denis	W	C299	100-19, 305-7, 1500-2
Kralj, Larry	O	C74	100-14, 601-2, 1600-1
LaBuff, Lorna	P	C231	200-9, 300-4, 603-1, 1500-2
LaCassee, Craig	O	C75	603-1, 603-4
Larsen, David	P	C242	200-9, 300-4, 603-1, 1500-2
Lassila, Bob	O	C76	307-1, 308-10
Lewin, Hilary	O	C77	100-3, 100-23, 100-45, 100-46, 100-47, 100-48, 200-26, 300-2, 305-2, 307-5, 603-2
Lewin, Stuart	W, O	C78	100-7, 100-17, 100-19, 100-49, 100-50, 300-2, 300-3, 300-10, 304-1, 305-2, 400-2, 400-3, 600-10, 600-11, 600-12, 600-13, 601-3, 602-1, 602-4, 602-6, 602-10, 603-2, 604-1, 1300-1, 1600-1, 1800-2
Lewis and Clark Interpretive Center Foundation – Debbie M. Churchill	W	C79	1000-12
Lewis and Clark Trail Heritage Foundation – Wendy Raney	W	C144	1000-18
Liebert, Richard	W, O	C80	100-28, 100-51, 100-52, 100-53, 100-54, 100-55, 100-56, 300-2, 300-4, 300-11, 301-2, 302-4, 303-8, 303-10, 303-11, 303-12, 303-13, 303-14, 303-15, 303-16, 303-17, 304-1, 305-3, 305-6, 305-10, 305-12, 305-13, 305-14, 306-2, 306-4, 307-6, 308-11, 308-12, 308-13, 308-14, 309-2, 309-3, 309-4, 309-5, 309-6, 309-7, 400-4, 500-2, 500-10, 500-18, 500-19, 602-3, 602-4, 602-11, 603-1, 603-2, 603-6, 603-9, 603-11, 604-1, 800-4, 800-5, 900-1, 900-2, 1000-2, 1000-4, 1000-13, 1000-18, 1100-4, 1200-1, 1300-3, 1300-4, 1400-7, 1500-4, 1500-5, 1600-1, 1600-7, 1600-8, 1700-3, 1800-3
Lindlief-Hall, Brenda	W	C81	100-20, 300-2, 601-2, 603-1, 1700-1
Little, Gloria	W	C204	100-19, 300-2, 602-5, 603-1, 1500-2
Little Shell Chippewa Tribe – James Parker Shield	W	C182	1000-20
Longhart, Fred L.	W	C82	100-19, 300-1, 303-1, 603-1
Makich, Kathleen O.	W	C261	100-19, 300-2
Makich, Max A.	W	C173	100-19

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Name	Type of Comments*	ID#	Comment Codes
Malsam, Russ	O	C83	100-5, 100-57, 100-58
Mathsen, Ronald	O	C84	100-16, 100-19, 100-45, 303-1, 305-2, 603-5, 603-6, 603-7, 603-12
Mayernik, Stephen V.	W	C266	306-1, 307-1, 1300-1, 1400-1
Mazzola, Donald	P	C235	200-9, 300-4, 603-1, 1500-2
McBroom, Scott T.	W	C265	100-4, 300-1
McDougal, Susanna	W	C85	200-9, 300-4, 303-1, 1500-2
McLaughlin, William C.	W	C86	100-14, 100-19, 200-4, 200-5
McRae, Douglas S.	W	C318	305-4, 500-3
Meissner, Mary	W	C175	100-19, 500-3, 600-1
Merasty, Robin T.	W	C268	100-19, 1700-5
Mercer, Colleen	W	C87	200-9, 300-1, 304-1, 600-3, 602-1, 603-1, 1500-2
Meyer, Curt	W	C88	100-14, 300-1, 305-1, 603-1, 603-4
Meyer, Rolane	P	C209	200-9, 300-4, 603-1, 1500-2
Meyers, Nathan	W	C208	100-4, 1600-1
Mid-Yellowstone Electric Cooperative – Ted Church	W, O	C89	200-21
Mid-Yellowstone Electric Cooperative – William Fitzgerald	O	C90	100-1, 100-59
Mid-Yellowstone Electric Cooperative – Judi Knapp	W	C91	100-1, 100-36, 100-59
Mid-Yellowstone Electric Cooperative – Larry Williams	W	C92	100-1, 100-36, 100-59
Miller, Donald	W	C260	603-3
Moe, Duane N.	W	C294	100-19, 200-5, 303-10, 602-4, 603-1, 603-2
Montana Coal Council – Bud Clinch	O	C93	100-36, 600-1
Montana Department of Transportation – Jim Skinner	W	C94	1200-4, 1200-5, 1200-6, 1200-7, 1200-8, 1200-9, 1200-10, 1200-11, 1200-12, 1200-13, 1200-14, 1200-15, 1200-16
Montana Ecosystems Defense Council – Steve Kelly	W	C312	100-16, 100-41, 200-9, 300-4, 500-3, 603-1, 1500-2
Montana Electric Cooperatives' Association – Gary Wiens	W	C178	200-3, 305-9
Montana Environmental Information Center – Pat Judge and Anne Hedges	W, O	C95	100-50, 100-59, 100-60, 100-61, 200-4, 200-5, 200-22, 200-23, 200-24, 200-25, 300-2, 300-3, 300-4, 500-3, 600-10, 600-14, 602-1, 602-2, 602-5, 602-7, 602-12, 602-13, 602-14, 602-15, 603-1, 603-2, 603-4, 603-6, 603-7, 603-13, 1600-9, 1600-10, 1800-4

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Name	Type of Comments*	ID#	Comment Codes
Montana Environmental Trade Association – Don Allen	O	C96	100-5, 100-36, 100-62, 300-12
Montana House of Representatives – Rep. George Golie	W	C306	100-5, 100-6, 100-36, 200-3, 307-4, 500-14, 602-8, 1600-11
Montana Preservation Alliance – Chere Jiusto	W	C97	1000-4, 1000-18
Moore, John	W	C98	307-1, 308-4
Moos, Ted	W	C280	100-13, 100-14, 100-19
Morgan, Susan	P	C223	200-9, 300-4, 603-1, 1500-2
Morris, Pamela	O	C99	301-3, 602-1, 604-1
Morrow, Roberta	W	C202	100-19, 1500-2, 1700-5
Murphy, Robert A.	W	C188	100-19, 1700-5
Murri, Val & Karen	W	C100	100-19, 100-63, 600-14
National Trust for Historic Preservation – Amy Cole	W	C101	1000-18
Newman, Joe	W	C298	100-19, 603-1, 603-7
Norgaard, Roger	O	C102	100-19, 700-1
North Central Montana Building and Construction Trades – Duane Mellinger	O	C103	100-5, 100-64, 603-3
Northern Cheyenne Tribe – Eugene Little Coyote	W	C272	100-19, 601-2, 602-1
Northern Plains Resource Council – Mark Fix	W	C104	100-28, 100-65, 100-66, 300-9, 303-1, 304-1, 500-3, 500-20, 603-1, 603-5, 603-10, 1400-8, 1800-5
O'Neill, Joanne E.	W	C286	200-9, 300-4, 603-1, 1500-2
Palmer, Jeffrey C.	W	C313	100-14, 300-1
Papoulis, Mary	W, O	C105	100-16, 100-67, 100-68, 200-22, 200-26, 301-1, 305-2, 603-5, 1000-18
Peck, Kathryn E. Peck	P	C282	200-9, 300-4, 603-1, 1500-2
Pfister, Ellen	W	C106	100-69, 300-1, 300-4, 301-1, 1600-9
Piapot, Cheenah	W	C187	100-76, 602-5, 1700-5
Plouzek, Morlene	P, W	C222	100-19, 200-9, 300-4, 603-1, 1500-2
Plumbers and Pipe Fitters, Local 41 – Olaf Stimac	W, O	C107	100-70
Poremba, Maureen	W	C108	200-9, 300-4, 603-1, 1500-2
Portage Route Chapter, Lewis & Clark Trail Heritage Foundation, Inc. – Willard R. Weaver	W	C177	1000-12
Putzker, Rob & Joanne	W	C109	100-71
Quinn, Bob	O	C110	300-13, 303-7, 303-10, 305-2, 600-4, 602-16, 1300-1

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Name	Type of Comments*	ID#	Comment Codes
Ragged Robe, Wabusk	W	C193	100-19, 602-1, 1700-2
Raining Bird, Brandon	W	C197	1500-2
Rammer, William A.	W	C321	100-19, 601-2
Rana, Paul J.	P	C247	200-9, 300-4, 600-1, 603-1, 1500-2
Ransdell, Hilary	W	C111	100-15, 100-17, 100-19, 100-45, 100-72, 100-73, 200-16, 300-2, 307-7, 601-11, 602-15, 1600-1
Redmond, Carmen D.	P	C238	200-9, 300-4, 603-1, 1500-2, 1800-8
Reichert, Arlyne	W	C262	100-15, 100-19, 300-3, 1000-2
Rezeates, Larry	O	C112	100-19, 100-74, 100-75, 1500-6
Richards, Paul	P	C221	200-9, 300-4, 603-1, 1500-2
Richardson, Gail and John	P	C233	100-14, 200-4, 200-9, 300-4, 603-1, 1500-2
Richter, Cindy	W	C113	300-4, 308-4
Rio Tinto Energy America – Bob Green	W	C114	100-5, 100-76, 308-2
Roberts, Carol	P	C216	100-14, 200-9, 300-4, 603-1, 1500-2
Roberts, Julia B.	P	C230	200-9, 300-4, 600-3, 603-1, 1500-2
Robinson, Owen	O	C115	100-5, 307-4, 1600-6, 1600-11, 1600-12
Rockafellow, Rachel	W, P	C116	100-7, 200-9, 300-4, 603-1, 1500-2
Rogers, Bill	O	C117	100-77, 100-78
Rose, Alison	W, P	C252	100-19, 200-9, 300-4, 603-1, 1500-2
Russell, Merilee	O	C118	100-39, 100-79, 200-27, 602-17
Russette, Tashina	W	C207	100-14, 100-19, 1700-2
Scharf, Darrell	W	C211	100-5, 603-3
Schinttgen, Michael	W	C276	100-13
St. Pierre, Nate	O	C119	100-19, 100-48, 100-80, 1000-14
Sands, Jim	O	C120	100-5, 100-81
Savinski, Mark T.	P	C241	200-9, 300-4, 603-1, 1500-2
Schaub, David L.	W	C121	100-14, 300-4, 301-4
Schroeder, Arthur H. and Elizabeth	W	C273	600-1
Sentz, Gene	W	C122	100-19, 301-1, 603-4, 604-1, 1500-2
Setter, Marion J.	P	C212	200-9, 300-4, 603-1, 1500-2
Shaw, Suzanne L.	W	C174	100-17, 100-19, 603-2, 1400-2
Sherman, Roger	W	C123	100-14, 100-19, 200-4, 300-4, 602-1
Shores, Karen C.	P	C246	200-9, 300-4, 303-1, 603-1, 1500-2
Sicotte, Patricia C.	P	C219	200-9, 300-4, 603-1, 1500-2
Siebel, gonnie	W	C124	100-20, 100-82, 200-4, 300-3, 300-4
Simmons, William J.	W	C249	100-16
Skari, Arlo	W, O	C125	100-48, 200-16, 200-22, 300-4, 500-3, 602-1, 602-7, 603-1, 603-10, 603-14

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Name	Type of Comments*	ID#	Comment Codes
Smith, Jennifer and Scott Friskics	W	C126	100-83, 200-16, 200-22, 300-1, 603-2
Smith, Jude	W	C250	100-7, 100-14, 100-19, 300-2
Smith, Steve C.	W	C127	100-82, 100-84, 300-18, 303-17, 305-7
Snow, Don	P	C244	200-9, 300-4, 603-1, 1500-2
Southern Montana Electric – Tim Gregori	W, O	C128	100-39, 100-85, 100-86, 100-87, 200-28, 200-29, 305-9, 305-15, 309-8, 310-1, 310-1, 400-5, 500-22, 500-23, 500-24, 600-15, 600-16, 600-17, 600-18, 600-19, 600-20, 601-1, 601-7, 601-12, 601-13, 602-1, 602-18, 602-19, 602-20, 602-21, 602-22, 602-23, 602-24, 602-25, 602-26, 602-27, 602-28, 602-29, 602-30, 603-15, 603-16, 603-17, 604-3, 604-4, 604-5, 700-6, 700-7, 700-8, 700-9, 700-10, 700-11, 700-12, 700-13, 800-6, 800-7, 800-8, 900-3, 1000-15, 1000-16, 1000-17, 1100-5, 1200-17, 1200-18, 1200-19, 1300-5, 1300-6, 1400-9, 1400-10, 1400-11, 1400-12, 1500-7, 1800-6, 1800-7
Spencer, Dan	O	C129	100-19, 100-88, 301-1, 306-3, 601-11
Spoja, William A., Jr.	W, O	C130	100-5, 100-36, 100-89, 100-90, 300-14, 307-4
Stanley Consultants – Ray Walters	O	C131	305-9, 305-16
Starshine	W, O	C132	100-19, 100-91, 305-4, 1600-5
State Conference of Electrical Workers – Dan Flynn	O	C133	100-92
Stenz, Robert W.	P	C225	200-9, 300-4, 603-1, 1500-2
Stephens, Paul	W, O	C134	100-7, 100-25, 100-42, 100-50, 100-59, 100-60, 100-61, 100-93, 100-94, 100-95, 200-4, 200-5, 200-22, 200-23, 200-24, 200-25, 300-2, 300-3, 300-4, 305-17, 500-3, 600-10, 600-14, 602-1, 602-2, 602-5, 602-7, 602-12, 602-13, 602-14, 602-15, 603-1, 603-2, 603-4, 603-6, 603-7, 603-13, 1600-1, 1600-9, 1600-10, 1600-13, 1800-4
Stevens, Bob Jr.	P	C226	200-9, 300-4, 603-1, 1500-2
St. Pierre, Shana	W	C184	1700-5
Stranahan, Lorene A.	W	C325	100-19, 300-1, 500-3, 500-5, 601-1
Stump, Rainbow	W	C185	1700-2
Sunchild, Deidra Rose	W	C189	100-19, 1700-2, 1700-5
Swan, Margaret	W	C191	100-19, 1700-5

Name	Type of Comments*	ID#	Comment Codes
Swearingen, Jennifer	W	C135	100-20, 100-95, 200-4, 300-1, 300-4, 305-7, 602-2, 602-5
Sweet, Bill	W	C309	100-19, 100-41, 603-1
Sylvan Learning Center – Kendall May	W	C170	100-14, 100-19, 602-1, 602-5, 1500-2, 1700-1
Taylor, Neil	O	C136	100-19
Thackeray, William	W	C251	309-10
Thompson, Erin	W	C137	100-82, 601-2, 1500-2, 1500-8
Thornton, Karen	W	C172	603-1
Thornton, Ken	O	C138	603-7
Thornton, Millie	W	C169	300-1, 601-2, 1500-9
Tighe, Dennis	W	C303	100-16, 200-5, 300-2, 601-2
Toldness, Marie Ann, Loren A., and Rachel J.	W	C287	100-13, 100-14, 303-1, 603-1, 1500-2
Tongue River Electric Cooperative – Keith Bales	O	C139	100-5, 100-36, 100-96, 200-30, 305-9, 305-16, 602-6, 1600-12
Tongue River Electric Cooperative – Diana McLean	O	C140	200-3, 1700-4
Tongue River Electric Cooperative – Diane Rapos	O	C141	100-5, 600-1
Tongue River Electric Cooperative – Alan See	O	C142	308-16
Torske, Jim	O	C143	100-5, 200-31
Tourangeau, Pat and Nick	W	C258	100-19, 603-1
Town of Geraldine – Mayor Holly Ebeling	W	C316	100-98, 300-1
Travis, Lee	W	C330	100-19, 200-9, 300-4, 602-1, 603-1, 1500-2
Turner, Gayle	W	C145	600-1
Tuss, Elsie	C	C307	602-3, 602-4
Urquhart, Duane	W	C271	100-1, 100-5, 1600-1
Urquhart, Mary	W	C270	100-1, 100-5, 1600-11
Vincent, Chris (Mary C.)	W	C146	100-48, 600-3, 603-1
Vincent, Clay	O	C147	100-48, 100-97, 302-5, 305-1
Walsh, Portland	W	C195	100-19, 1700-2
Warner, David	O	C148	100-5, 300-15, 1600-12
Weaver, Noel	W	C149	100-97, 200-32
Weber, Cindy	O	C150	100-98, 1600-1
Wendt, Doug	O	C151	100-16, 100-24, 100-42, 200-15, 200-16, 603-1
Wheeler, Myron C.	W	C323	100-5, 100-36
Williams, Jeff	W	C285	200-9, 300-4, 603-1, 1500-2

Name	Type of Comments*	ID#	Comment Codes
Williams, Wendy	P	C237	200-9, 300-4, 603-1, 1500-2
Willison, Jeannine	W	C333	100-19, 100-24, 200-4, 300-1, 500-3
Wilson-Pant, M. Calanthe	W	C152	308-17, 309-9, 1000-19, 1100-6
Windy Boy, Nathaniel	W	C186	100-19, 300-1, 1700-5
Witsoe, Michael	O	C153	300-16, 304-1
Women's Voices for the Earth – Alexandra Gorman	W	C154	601-2, 602-1, 1500-2
Wood, Wilbur	W	C155	100-19, 301-1, 303-10, 303-18, 500-3, 600-3
Yellowstone Valley Electric Cooperative – Irwin Elleson	O	C156	600-1
Yellowstone Valley Electric Cooperative – Terry Holzer	O	C157	200-33
Yellowstone Valley Electric Cooperative – Larry Kaufman	O	C158	100-5, 300-17
Yellowstone Valley Electric Cooperative – Dave Kelsey	O	C159	200-3, 301-5, 302-6, 500-14, 500-15, 602-1, 1400-13
Yellowstone Valley Electric Cooperative – Dick Weldon	O	C160	200-3
Yellowstone Valley Electric Cooperative – Brandon Wittman	O	C161	100-5, 100-36, 1700-4
Young, Brue A.	P	C229	200-9, 300-4, 603-1, 1500-2

* W – Written comment (email, attached electronic file, hard copy letter, etc.); P – postcard; O – Oral testimony at public hearing in Great Falls or Havre

Table L-5. List of Commenters and their Comments in Numerical Order

ID#	Name	Type of Comments*	Comment Codes
C1	Allaire, Robin	O	300-1, 600-1, 602-1, 603-1
C2	Anderson, David	W, O	100-1, 308-2
C3	Anderson, Sharon	W	100-2, 100-3, 100-4, 602-1
C4	Baiz, Claire	O	300-1, 303-1, 305-1, 603-1, 603-2, 1600-1
C5	Ball-Giep, Debbie	O	100-5, 303-2, 304-1, 308-2
C6	Beartooth Electric Cooperative, Carbon County Commission – John Prinkki	O	308-2, 603-3
C7	Beartooth Electric Cooperative – Bob Walker	O	200-1, 200-2, 200-3
C8	Becker, Julia	W	100-3, 100-6, 100-7, 100-8, 100-9, 100-

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ID#	Name	Type of Comments*	Comment Codes
			10, 200-4, 300-1, 300-2, 300-3, 302-1, 305-1, 305-2, 307-1, 307-2, 308-3, 308-4, 500-1, 500-2, 500-3, 600-2, 600-3, 600-21, 603-4, 604-1, 700-1, 800-1, 900-1, 1000-1, 1300-1, 1400-1, 1400-2, 1600-1, 1600-2, 1600-3, 1700-1, 1700-2
C9	Bernard, Joanne	O	300-2, 306-1, 307-1, 700-1, 1200-1
C10	Biehl, Daniel S.	W	100-11, 100-12, 200-5, 200-6, 301-1, 303-3, 303-4, 307-1, 602-31, 603-5, 700-2, 1500-2
C11	Bison Engineering – Jeff Chaffee	O	601-1, 1500-1
C12	Bjornlie, Harvey C.	W	200-5, 200-7, 305-2, 603-1
C13	Bjornlie, Sheila	W	100-14, 100-15, 304-1
C14	Bocock, Charles	W, O	100-16, 100-17, 200-8, 500-2, 500-4, 602-1, 602-2, 602-3, 1000-2, 1300-2, 1400-1, 1400-3, 1400-4, 1400-5
C15	Boysun, Randal J.	W, O	100-5, 100-18
C16	Bradley, Patricia	W	100-14, 100-19, 200-4
C17	Carrick, Patricia	W	100-14, 100-20, 200-9, 300-4, 601-2, 1500-2
C18	Chippewa Cree Tribal Council, Montana Legislature – Jonathan Windy Boy	O	100-15, 100-21, 600-4, 1400-1
C19	City of Great Falls – Donna Stebbins	O	308-2, 602-1
C20	Citizens for Clean Energy – Cheryl M. Reichert	W	100-15, 100-17, 100-19, 100-22, 100-23, 100-24, 100-25, 200-4, 200-10, 200-11, 200-12, 200-13, 200-14, 200-15, 200-16, 303-4, 305-2, 305-3, 305-4, 307-1, 308-5, 309-1, 500-3, 601-2, 602-1, 602-3, 602-4, 602-5, 603-1, 603-2, 603-6, 604-1, 700-1, 900-1, 1000-2, 1100-1, 1200-1, 1400-1, 1600-1, 1600-2, 1700-1, 1700-2
C21	City of Great Falls – John Lawton	O	200-17
C22	City of Great Falls – Jordan Love	O	100-26
C23	Clean Air Task Force – John W. Thompson	W	300-2, 305-1, 305-2, 305-5, 305-6, 305-7
C24	Collins, Carol	O	100-27, 303-1, 305-6, 305-7, 307-1, 600-3, 1600-1
C25	Crete, Ronald A.	W	100-28, 300-2, 300-5, 305-2, 307-1, 603-4

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ID#	Name	Type of Comments*	Comment Codes
C26	DayChild, Henry, Sr.	O	200-15, 300-1, 600-4
C27	Deligdisch, Andree	O	100-29, 303-5, 500-5, 600-3
C28	Department of the Interior (U.S.) – Robert F. Stewart	W	500-6, 500-7, 500-8, 500-9, 600-5, 800-2, 1000-3, 1000-4, 1000-5, 1000-6, 1000-18, 1100-2, 1100-3
C29	Dolman, Aart	W, O	100-7, 100-14, 100-30, 100-31, 302-2, 303-6, 600-3, 602-6, 1000-7, 1000-8, 1000-9, 1400-1, 1400-6
C30	Dopler, Pat	W	200-5, 301-6, 302-3, 303-7, 603-7
C31	Downs, Dan	O	100-32, 300-6, 303-2
C32	Durham, Margery	W	303-8, 308-4, 1600-4
C33	Eckenstein, Vicki	W	308-7, 600-6, 601-3, 603-4, 604-1, 1600-5
C34	Electric City Power, Inc. – Coleen Balzarini	W, O	200-17, 200-18
C35	Emerson, Jim	W	100-14, 100-24, 500-3, 603-1
C36	Environmental Protection Agency (U.S.), Region 8 – John Wardell	W	100-33, 100-34, 303-19, 305-2, 305-8, 306-1, 306-2, 308-8, 400-1, 500-2, 500-5, 500-10, 500-11, 500-12, 500-13, 600-7, 601-4, 601-5, 601-6, 601-7, 601-8, 602-7, 603-8, 603-9, 604-2, 700-3, 700-4, 700-5, 1000-10, 1200-3
C37	Evans, Allen	O	100-5, 100-35
C38	Federspiel, Laura	O	100-14, 600-3, 1500-2, 1600-6
C39	Fergus Electric Cooperative – David Dover	O	100-36, 200-3
C40	Fergus Electric Cooperative – Robert Evans	O	200-3
C41	Fergus Electric Cooperative – Joe Dirkson	W, O	100-1, 100-5, 100-36, 600-22
C42	Fergus Electric Cooperative – Guy Johnson	O	100-5, 200-3, 200-19
C43	Fergus Electric Cooperative – Joe Pirrie	O	100-35, 303-2
C44	Fergus Electric Cooperative – Scott Sweeney	W, O	100-18, 100-36, 305-9, 600-1
C45	Floyd, Jaybe	W	300-2, 300-3, 303-3, 306-1, 800-3, 1600-1
C46	Fraser, Scott	W	100-14, 100-37, 300-2
C47	Freyholtz, Mert	O	308-9, 600-8
C48	Freyholtz, Vicki	O	100-14, 100-38, 100-39, 300-3, 306-3, 602-8, 603-1, 603-2
C49	Gallagher, George	O	100-5

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ID#	Name	Type of Comments*	Comment Codes
C50	Gessaman, Kathleen Z.	W	100-15, 200-4, 301-1, 302-4, 307-1, 307-3, 308-4, 601-2, 601-3, 601-9, 601-10, 602-1, 602-9, 1000-11, 1800-1
C51	Grant, Charles	O	100-40, 300-4, 1500-3
C52	Gray, Randy	O	100-36, 200-3, 305-9
C53	Hamlett, Brad	O	100-5, 500-14, 600-9
C54	Hankins, Lester (Butch)	W, O	100-14, 100-19, 100-23, 100-41, 200-8, 1500-2
C55	Hanson, Victor H.	W	100-41, 500-3
C56	Haug, Catherine	W	100-14, 100-20, 200-4, 1500-2
C57	Helm, Gary	O	100-36, 200-3, 307-4, 600-4
C58	Henderson, Janet	W	100-14, 100-16, 300-2, 303-9, 307-1, 500-3, 1000-1
C59	Hilden, Alan D.	W	100-14, 200-5, 300-4
C60	Hines, Jessica	W	100-19, 308-3, 601-2
C61	Hoy, Mike	W	100-20, 200-9, 300-4, 308-10, 603-1, 1500-2
C62	Hubbard, John	O	100-42, 1500-2
C63	Humphrey, Lucretia	W	100-19, 300-2, 303-1, 1500-2
C64	Hyndman, Donald W.	W	300-5, 300-8, 305-3, 603-1, 603-2
C65	International Electrical Workers 33 – Curtis Sweet	O	603-10
C66	International Union of Operation Engineers, Local 400 – Earl Salley	O	100-5
C67	Johnson, E.A.	W	100-5, 100-36
C68	Jolley, Mary	O	100-7, 305-6, 305-10, 900-1
C69	Jones, Cedron	W	100-19, 100-43, 302-4
C70	Kaufmann, Christine	W	100-20, 603-2
C71	Kendy, Eloise	W	100-44, 500-3, 500-5, 500-16, 500-17
C72	Kent, Paul and Vicki	W	100-14, 100-19, 200-4
C73	Klingman, Vern; Russ Doty, Tom Towe	W	300-3, 305-1, 305-6, 305-11
C74	Kralj, Larry	O	100-14, 601-2, 1600-1
C75	LaCassee, Craig	O	603-1, 603-4
C76	Lassila, Bob	O	307-1, 308-10
C77	Lewin, Hilary	O	100-3, 100-23, 100-45, 100-46, 100-47, 100-48, 200-26, 300-2, 305-2, 307-5, 603-2
C78	Lewin, Stuart	W, O	100-7, 100-17, 100-19, 100-49, 100-50, 300-2, 300-3, 300-10, 304-1, 305-2, 400-2, 400-3, 600-10, 600-11, 600-12, 600-13, 601-3, 602-1, 602-4, 602-6, 602-10,

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ID#	Name	Type of Comments*	Comment Codes
			603-2, 604-1, 1300-1, 1600-1, 1800-2
C79	Lewis and Clark Interpretive Center Foundation – Debbie M. Churchill	W	1000-12
C80	Liebert, Richard	W, O	100-28, 100-51, 100-52, 100-53, 100-54, 100-55, 100-56, 300-2, 300-4, 300-11, 301-2, 302-4, 303-8, 303-10, 303-11, 303-12, 303-13, 303-14, 303-15, 303-16, 303-17, 304-1, 305-3, 305-6, 305-10, 305-12, 305-13, 305-14, 306-2, 306-4, 307-6, 308-11, 308-12, 308-13, 308-14, 309-2, 309-3, 309-4, 309-5, 309-6, 309-7, 400-4, 500-2, 500-10, 500-18, 500-19, 602-3, 602-4, 602-11, 603-1, 603-2, 603-6, 603-9, 603-11, 604-1, 800-4, 800-5, 900-1, 900-2, 1000-2, 1000-4, 1000-13, 1000-18, 1100-4, 1200-1, 1300-3, 1300-4, 1400-7, 1500-4, 1500-5, 1600-1, 1600-7, 1600-8, 1700-3, 1800-3
C81	Lindlief-Hall, Brenda	W	100-20, 300-2, 601-2, 603-1, 1700-1
C82	Longhart, Fred L.	W	100-19, 300-1, 303-1, 603-1
C83	Malsam, Russ	O	100-5, 100-57, 100-58
C84	Mathsen, Ronald	O	100-16, 100-19, 100-45, 303-1, 305-2, 603-5, 603-6, 603-7, 603-12
C85	McDougal, Susanna	W	200-9, 300-4, 303-1, 1500-2
C86	McLaughlin, William C.	W	100-14, 100-19, 200-4, 200-5
C87	Mercer, Colleen	W	200-9, 300-1, 304-1, 600-3, 602-1, 603-1, 1500-2
C88	Meyer, Curt	W	100-14, 300-1, 305-1, 603-1, 603-4
C89	Mid-Yellowstone Electric Cooperative – Ted Church	W, O	200-21
C90	Mid-Yellowstone Electric Cooperative – William Fitzgerald	O	100-1, 100-59
C91	Mid-Yellowstone Electric Cooperative – Judi Knapp	W	100-1, 100-36, 100-59
C92	Mid-Yellowstone Electric Cooperative – Larry Williams	W	100-1, 100-36, 100-59
C93	Montana Coal Council – Bud Clinch	O	100-36, 600-1
C94	Montana Department of Transportation – Jim Skinner	W	1200-4, 1200-5, 1200-6, 1200-7, 1200-8, 1200-9, 1200-10, 1200-11, 1200-12, 1200-13, 1200-14, 1200-15, 1200-16
C95	Montana Environmental	W, O	100-50, 100-59, 100-60, 100-61, 200-4,

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ID#	Name	Type of Comments*	Comment Codes
	Information Center – Pat Judge and Anne Hedges		200-5, 200-22, 200-23, 200-24, 200-25, 300-2, 300-3, 300-4, 500-3, 600-10, 600-14, 602-1, 602-2, 602-5, 602-7, 602-12, 602-13, 602-14, 602-15, 603-1, 603-2, 603-4, 603-6, 603-7, 603-13, 1600-9, 1600-10, 1800-4
C96	Montana Environmental Trade Association – Don Allen	O	100-5, 100-36, 100-62, 300-12
C97	Montana Preservation Alliance – Chere Jiusto	W	1000-4, 1000-18
C98	Moore, John	W	307-1, 308-4
C99	Morris, Pamela	O	301-3, 602-1, 604-1
C100	Murri, Val & Karen	W	100-19, 100-63, 600-14
C101	National Trust for Historic Preservation – Amy Cole	W	1000-18
C102	Norgaard, Roger	O	100-19, 700-1
C103	North Central Montana Building and Construction Trades – Duane Mellinger	O	100-5, 100-64, 603-3
C104	Northern Plains Resource Council – Mark Fix	W	100-28, 100-65, 100-66, 300-9, 303-1, 304-1, 500-3, 500-20, 603-1, 603-5, 603-10, 1400-8, 1800-5
C105	Papoulis, Mary	W, O	100-16, 100-67, 100-68, 200-22, 200-26, 301-1, 305-2, 603-5, 1000-18
C106	Pfister, Ellen	W	100-69, 300-1, 300-4, 301-1, 1600-9
C107	Plumbers and Pipe Fitters, Local 41 – Olaf Stimac	W, O	100-70
C108	Poremba, Maureen	W	200-9, 300-4, 603-1, 1500-2
C109	Putzker, Rob & Joanne	W	100-71
C110	Quinn, Bob	O	300-13, 303-7, 303-10, 305-2, 600-4, 602-16, 1300-1
C111	Ransdell, Hilary	W	100-15, 100-17, 100-19, 100-45, 100-72, 100-73, 200-16, 300-2, 307-7, 601-11, 602-15, 1600-1
C112	Rezeates, Larry	O	100-19, 100-74, 100-75, 1500-6
C113	Richter, Cindy	W	300-4, 308-4
C114	Rio Tinto Energy America – Bob Green	W	100-5, 100-76, 308-2
C115	Robinson, Owen	O	100-5, 307-4, 1600-6, 1600-11, 1600-12
C116	Rockafellow, Rachel	W, P	100-7, 200-9, 300-4, 603-1, 1500-2
C117	Rogers, Bill	O	100-77, 100-78
C118	Russell, Merilee	O	100-39, 100-79, 200-27, 602-17
C119	St. Pierre, Nate	O	100-19, 100-48, 100-80, 1000-14

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ID#	Name	Type of Comments*	Comment Codes
C120	Sands, Jim	O	100-5, 100-81
C121	Schaub, David L.	W	100-14, 300-4, 301-4
C122	Sentz, Gene	W	100-19, 301-1, 603-4, 604-1, 1500-2
C123	Sherman, Roger	W	100-14, 100-19, 200-4, 300-4, 602-1
C124	Siebel, gonnie	W	100-20, 100-82, 200-4, 300-3, 300-4
C125	Skari, Arlo	W, O	100-48, 200-16, 200-22, 300-4, 500-3, 602-1, 602-7, 603-1, 603-10, 603-14
C126	Smith, Jennifer and Scott Friskics	W	100-83, 200-16, 200-22, 300-1, 603-2
C127	Smith, Steve C.	W	100-82, 100-84, 300-18, 303-17, 305-7
C128	Southern Montana Electric – Tim Gregori	W, O	100-39, 100-85, 100-86, 100-87, 200-28, 200-29, 305-9, 305-15, 309-8, 310-1, 310-1, 400-5, 500-22, 500-23, 500-24, 600-15, 600-16, 600-17, 600-18, 600-19, 600-20, 601-1, 601-7, 601-12, 601-13, 602-1, 602-18, 602-19, 602-20, 602-21, 602-22, 602-23, 602-24, 602-25, 602-26, 602-27, 602-28, 602-29, 602-30, 603-15, 603-16, 603-17, 604-3, 604-4, 604-5, 700-6, 700-7, 700-8, 700-9, 700-10, 700-11, 700-12, 700-13, 800-6, 800-7, 800-8, 900-3, 1000-15, 1000-16, 1000-17, 1100-5, 1200-17, 1200-18, 1200-19, 1300-5, 1300-6, 1400-9, 1400-10, 1400-11, 1400-12, 1500-7, 1800-6, 1800-7
C129	Spencer, Dan	O	100-19, 100-88, 301-1, 306-3, 601-11
C130	Spoja, William A., Jr.	W, O	100-5, 100-36, 100-89, 100-90, 300-14, 307-4
C131	Stanley Consultants – Ray Walters	O	305-9, 305-16
C132	Starshine	W, O	100-19, 100-91, 305-4, 1600-5
C133	State Conference of Electrical Workers – Dan Flynn	O	100-92
C134	Stephens, Paul	W, O	100-7, 100-25, 100-42, 100-50, 100-59, 100-60, 100-61, 100-93, 100-94, 100-95, 200-4, 200-5, 200-22, 200-23, 200-24, 200-25, 300-2, 300-3, 300-4, 305-17, 500-3, 600-10, 600-14, 602-1, 602-2, 602-5, 602-7, 602-12, 602-13, 602-14, 602-15, 603-1, 603-2, 603-4, 603-6, 603-7, 603-13, 1600-1, 1600-9, 1600-10, 1600-13, 1800-4
C135	Swearingen, Jennifer	W	100-20, 100-95, 200-4, 300-1, 300-4, 305-7, 602-2, 602-5
C136	Taylor, Neil	O	100-19

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ID#	Name	Type of Comments*	Comment Codes
C137	Thompson, Erin	W	100-82, 601-2, 1500-2, 1500-8
C138	Thornton, Ken	O	603-7
C139	Tongue River Electric Cooperative – Keith Bales	O	100-5, 100-36, 100-96, 200-30, 305-9, 305-16, 602-6, 1600-12
C140	Tongue River Electric Cooperative – Diana McLean	O	200-3, 1700-4
C141	Tongue River Electric Cooperative – Diane Rapos	O	100-5, 600-1
C142	Tongue River Electric Cooperative – Alan See	O	308-16
C143	Torske, Jim	O	100-5, 200-31
C144	Lewis and Clark Trail Heritage Foundation – Wendy Raney	W	1000-18
C145	Turner, Gayle	W	600-1
C146	Vincent, Chris (Mary C.)	W	100-48, 600-3, 603-1
C147	Vincent, Clay	O	100-48, 100-97, 302-5, 305-1
C148	Warner, David	O	100-5, 300-15, 1600-12
C149	Weaver, Noel	W	100-97, 200-32
C150	Weber, Cindy	O	100-98, 1600-1
C151	Wendt, Doug	O	100-16, 100-24, 100-42, 200-15, 200-16, 603-1
C152	Wilson-Pant, M. Calanthe	W	308-17, 309-9, 1000-19, 1100-6
C153	Witsoe, Michael	O	300-16, 304-1
C154	Women's Voices for the Earth – Alexandra Gorman	W	601-2, 602-1, 1500-2
C155	Wood, Wilbur	W	100-19, 301-1, 303-10, 303-18, 500-3, 600-3
C156	Yellowstone Valley Electric Cooperative – Irwin Elleson	O	600-1
C157	Yellowstone Valley Electric Cooperative – Terry Holzer	O	200-33
C158	Yellowstone Valley Electric Cooperative – Larry Kaufman	O	100-5, 300-17
C159	Yellowstone Valley Electric Cooperative – Dave Kelsey	O	200-3, 301-5, 302-6, 500-14, 500-15, 602-1, 1400-13
C160	Yellowstone Valley Electric Cooperative – Dick Weldon	O	200-3
C161	Yellowstone Valley Electric Cooperative – Brandon Wittman	O	100-5, 100-36, 1700-4
C162	Blaine County Farmers Union – Barb Hauge	W	100-19
C163	Hari, Robert	W	100-5, 100-37

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ID#	Name	Type of Comments*	Comment Codes
C164	Good, Mark	W	200-5, 303-3, 602-1, 603-1, 603-2, 603-6
C165	Hardiman, Lisa Lotte	W	100-3, 200-5, 305-3, 500-3, 600-3, 602-1, 700-1
C166	Bennett, Dan	W	300-2, 300-4
C167	Fisher, Joanne	W	100-16, 600-3, 603-2, 1500-2, 1700-1
C168	Fisher, Richard	W	100-14, 100-16, 300-3, 1500-2, 1700-1
C169	Thornton, Millie	W	300-1, 601-2, 1500-9
C170	Sylvan Learning Center – Kendall May	W	100-14, 100-19, 602-1, 602-5, 1500-2, 1700-1
C171	Hemstad, Phyllis	W	100-19, 100-49, 307-1
C172	Thornton, Karen	W	603-1
C173	Makich, Max A.	W	100-19
C174	Shaw, Suzanne L.	W	100-17, 100-19, 603-2, 1400-2
C175	Meissner, Mary	W	100-19, 500-3, 600-1
C176	Carman, Denita	W	602-1, 602-5
C177	Portage Route Chapter, Lewis & Clark Trail Heritage Foundation – Willard R. Weaver	W	1000-12
C178	Montana Electric Cooperatives' Association – Gary Wiens	W	200-3, 305-9
C179	Horn, Claud A. and Brenda	W	100-14, 100-19, 303-1, 600-1
C180	City of Great Falls/Cascade Co. Historic Preservation Office – Ellen Sievert and Ken Robison	W	1000-12
C181	Federal Aviation Administration – Clark Desing	W	1200-19
C182	Little Shell Chippewa Tribe – James Parker Shield	W	1000-20
C183	Denny, Aldean	W	1700-5
C184	St. Pierre, Shana	W	1700-5
C185	Stump, Rainbow	W	1700-2
C186	Windy Boy, Nathaniel	W	100-19, 300-1, 1700-5
C187	Piapot, Cheenah	W	100-76, 602-5, 1700-5
C188	Murphy, Robert A.	W	100-19, 1700-5
C189	Sunchild, Deidra Rose	W	100-19, 1700-2, 1700-5
C190	Ackerman, Terri	W	100-19, 604-1, 1700-5
C191	Swan, Margaret	W	100-19, 1700-5
C192	Eagleman, Ira	W	100-19, 1700-2
C193	Ragged Robe, Wabusk	W	100-19, 602-1, 1700-2
C194	Baker, Mallory	W	100-4, 100-19, 300-1, 602-1
C195	Walsh, Portland	W	100-19, 1700-2
C196	Azure, Vickie J.	W	100-19, 1700-5

ID#	Name	Type of Comments*	Comment Codes
C197	Raining Bird, Brandon	W	1500-2
C198	Gardipee, Kenneth	W	100-19, 1700-2, 1700-5
C199	Blane, Monica J.	W	100-19, 1500-2
C200	Arca, Ronni	W	602-5
C201	Cabigas, Leah	W	602-5, 1700-2, 1700-5
C202	Morrow, Roberta	W	100-19, 1500-2, 1700-5
C203	Duran, Willdette M.	W	602-5
C204	Little, Gloria	W	100-19, 300-2, 602-5, 603-1, 1500-2
C205	Horton, Daniel P.	W	100-19, 300-19, 302-4, 304-1
C206	Alvarez, Abel	W	100-19, 602-1, 602-5
C207	Russette, Tashina	W	100-14, 100-19, 1700-2
C208	Meyers, Nathan	W	100-4, 1600-1
C209	Meyer, Rolane	P	200-9, 300-4, 603-1, 1500-2
C210	Blood, W.A.	P	200-9, 300-4, 603-1, 1500-2
C211	Scharf, Darrell	W	100-5, 603-3
C212	Setter, Marion J.	P	200-9, 300-4, 603-1, 1500-2
C213	Decker, Eileen	P	200-9, 300-4, 603-1, 1500-2
C214	Ellingsen, Valley	P	200-9, 300-4, 603-1, 1500-2
C215	Baxter, Bruce	P	200-9, 300-4, 603-1, 1500-2
C216	Roberts, Carol	P	100-14, 200-9, 300-4, 603-1, 1500-2
C217	Gniadek, Steve	P	200-9, 300-4, 603-1, 1500-2
C218	Dagenais, Phyllis	P	200-9, 300-4, 603-1, 1500-2
C219	Sicotte, Patricia C.	P	200-9, 300-4, 603-1, 1500-2
C220	Kingsland, Margaret C.	P	200-9, 300-4, 603-1, 1500-2
C221	Richards, Paul	P	200-9, 300-4, 603-1, 1500-2
C222	Plouzek, Morlene	P, W	100-19, 200-9, 300-4, 603-1, 1500-2
C223	Morgan, Susan	P	200-9, 300-4, 603-1, 1500-2
C224	Holmes, Krys	P	200-9, 300-4, 603-1, 1500-2
C225	Stenz, Robert W.	P	200-9, 300-4, 603-1, 1500-2
C226	Stevens, Bob Jr.	P	200-9, 300-4, 603-1, 1500-2
C227	Deveny, Christine	P	200-9, 300-4, 603-1, 1500-2
C228	Howe, Charles M.	P	200-9, 300-4, 603-1, 1500-2
C229	Young, Brue A.	P	200-9, 300-4, 603-1, 1500-2
C230	Roberts, Julia B.	P	200-9, 300-4, 600-3, 603-1, 1500-2
C231	LaBuff, Lorna	P	200-9, 300-4, 603-1, 1500-2
C232	Fredlund, Dale	P	200-9, 300-4, 603-1, 1500-2
C233	Richardson, Gail and John	P	100-14, 200-4, 200-9, 300-4, 603-1, 1500-2
C235	Mazzola, Donald	P	200-9, 300-4, 603-1, 1500-2
C236	Bergstein, Diane	P	100-14, 200-9, 300-4, 603-1, 1500-2
C237	Williams, Wendy	P	200-9, 300-4, 603-1, 1500-2

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ID#	Name	Type of Comments*	Comment Codes
C238	Redmond, Carmen D.	P	200-9, 300-4, 603-1, 1500-2, 1800-8
C239	Hastings, Teresa	P	200-9, 300-4, 500-3, 603-1, 1500-2
C240	Heffern, Roy	P	200-9, 300-4, 303-1, 603-1, 1500-2
C241	Savinski, Mark T.	P	200-9, 300-4, 603-1, 1500-2
C242	Larsen, David	P	200-9, 300-4, 603-1, 1500-2
C243	Ferenstein, Jennifer	P	200-9, 300-4, 603-1, 1500-2
C244	Snow, Don	P	200-9, 300-4, 603-1, 1500-2
C245	Helvey, Patricia B.	P	200-9, 300-4, 603-1, 1500-2
C246	Shores, Karen C.	P	200-9, 300-4, 303-1, 603-1, 1500-2
C247	Rana, Paul J.	P	200-9, 300-4, 600-1, 603-1, 1500-2
C248	Bell, James P.	W	602-1, 603-1, 604-1, 1000-21, 1600-14
C249	Simmons, William J.	W	100-16
C250	Smith, Jude	W	100-7, 100-14, 100-19, 300-2
C251	Thackeray, William	W	309-10
C252	Rose, Alison	W, P	100-19, 200-9, 300-4, 603-1, 1500-2
C253	Armstrong, Stuart L.	P	200-9, 300-4, 603-1, 1500-2
C254	Johnson, Jan	W	100-4
C255	Dieruf, Bob	W	100-4
C256	Dieruf, Carli	W	100-4
C257	Crawford, Wayne and Ann	W	100-19
C258	Tourangeau, Pat and Nick	W	100-19, 603-1
C259	Dutchak, Nancy M.	W	100-20, 305-1
C260	Miller, Donald	W	603-3
C261	Makich, Kathleen O.	W	100-19, 300-2
C262	Reichert, Arlyne	W	100-15, 100-19, 300-3, 1000-2
C263	Henneford, Nancy M.	W	100-14, 100-19, 300-1, 305-1
C264	Henneford, J. R.	W	100-14, 300-1, 300-3, 305-1
C265	McBroom, Scott T.	W	100-4, 300-1
C266	Mayernik, Stephen V.	W	306-1, 307-1, 1300-1, 1400-1
C267	Boilermakers in Montana, Local 11 – Robert K. Winger	W	100-1, 100-5, 1600-11
C268	Merasty, Robin T.	W	100-19, 1700-5
C269	Armstrong, Henry L.	W	100-40, 305-1, 1700-1
C270	Urquhart, Mary	W	100-1, 100-5, 1600-11
C271	Urquhart, Duane	W	100-1, 100-5, 1600-1
C272	Northern Cheyenne Tribe – Eugene Little Coyote	W	100-19, 601-2, 602-1
C273	Schroeder, Arthur H. and Elizabeth	W	600-1
C274	Albertson, Joyce	W	100-19, 603-1, 1500-2
C275	Fergus Electric Cooperative –	W	100-1, 1600-11

ID#	Name	Type of Comments*	Comment Codes
	Leo Solf		
C276	Schinttgen, Michael	W	100-13
C277	Chippewa Cree Business Committee	W	100-19, 1700-2
C278	Breeden, Janet	P	200-9, 300-4, 603-1, 1500-2
C279	Heffern, Jacquie	W	100-4, 100-19, 1500-2
C280	Moos, Ted	W	100-13, 100-14, 100-19
C281	Gibson, Susan	W	100-15
C282	Peck, Kathryn E. Peck	P	200-9, 300-4, 603-1, 1500-2
C283	Gupton, Liz	W	100-19, 300-2, 301-1, 603-1
C284	Jennings, Gerry	W	100-79, 300-3, 602-1, 603-1, 1600-1
C285	Williams, Jeff	W	200-9, 300-4, 603-1, 1500-2
C286	O’Neill, Joanne E.	W	200-9, 300-4, 603-1, 1500-2
C287	Toldness, Marie Ann, Loren A., and Rachel J.	W	100-13, 100-14, 303-1, 603-1, 1500-2
C288	Gestring, Charles	W	300-1, 603-1
C289	Fiers, Mary F.	W	604-1
C290	Fiers, Thomas A.	W	604-1
C291	Elden, Cari	W	100-19, 303-1
C292	Engleson, Jerry L.	W	100-13, 200-5, 900-1
C293	Henderson, Noel	W	100-48
C294	Moe, Duane N.	W	100-19, 200-5, 303-10, 602-4, 603-1, 603-2
C295	Burns, Tracy	W	100-19, 200-9, 300-4, 603-1, 1500-2
C296	Dirkson, Pat	W	200-3, 600-22
C297	Dakin, Bill and Sarah	W	100-19, 100-82, 200-5, 303-1, 603-1
C298	Newman, Joe	W	100-19, 603-1, 603-7
C299	Klobofski, Denis	W	100-19, 305-7, 1500-2
C301	Jennings, Doris	W	100-4, 100-19, 300-1
C302	Fisher, Carol	W	100-14, 100-19, 100-16, 300-1, 500-3, 602-1
C303	Tighe, Dennis	W	100-16, 200-5, 300-2, 601-2
C304	Foster, Maureen	W	100-13, 100-19, 300-2
C305	Armstrong, Leila	W	100-19, 200-9, 300-2, 600-1
C306	Montana House of Representatives – Rep. George Golie	W	100-5, 100-6, 100-36, 200-3, 307-4, 500-14, 602-8, 1600-11
C307	Tuss, Elsie	C	602-3, 602-4
C308	Dieruf, Lenore	W	100-13, 100-19, 300-1
C309	Sweet, Bill	W	100-19, 100-41, 603-1
C310	Kington, Jacquelyn	P	200-9, 300-4, 603-1, 1500-2
C311	Anderson, Lynn	W	100-19, 300-1

ID#	Name	Type of Comments*	Comment Codes
C312	Montana Ecosystems Defense Council – Steve Kelly	W	100-16, 100-41, 200-9, 300-4, 500-3, 603-1, 1500-2
C313	Palmer, Jeffrey C.	W	100-14, 300-1
C314	Burgess, Cindy J.	W	602-1, 603-1, 603-18
C315	City of Fort Benton – Mayor Richard D. Morris	W	200-3, 300-1, 500-3, 603-1, 1500-1
C316	Town of Geraldine – Mayor Holly Ebeling	W	100-98, 300-1
C317	Clark, Gerald R.	W	300-2, 303-1, 603-2, 1001-2, 1200-2
C318	McRae, Douglas S.	W	305-4, 500-3
C319	Gotshalk, Richard	W	100-16, 200-9, 300-4, 600-1, 603-1, 1500-2
C320	Fort Belknap Indian Community – Julia Doney, President	W	100-19, 100-28, 307-1, 602-2, 1700-2, 1700-6
C321	Rammer, William A.	W	100-19, 601-2
C322	Click, C. J.	W	100-19
C323	Wheeler, Myron C.	W	100-5, 100-36
C324	Jussila, Neil R.	W	100-5
C325	Stranahan, Lorene A.	W	100-19, 300-1, 500-3, 500-5, 601-1
C327	James, W. Dudley	W	100-7
C328	Golder, Nick	W	100-19, 300-1
C329	City of Havre – Councilwoman Emily Mayer Lossing, Ward IV	W	100-19, 300-1, 602-1
C330	Travis, Lee	W	100-19, 200-9, 300-4, 602-1, 603-1, 1500-2
C331	Burgess, Bill	W	100-16, 601-2, 602-1, 1500-2
C332	Dobyns, Kris	W	100-48
C333	Willison, Jeannine	W	100-19, 100-24, 200-4, 300-1, 500-3
C334	Enk, Michael	W	100-13, 100-16, 200-9, 300-4, 500-3, 603-1
C335	Erickson, Pamela	W	100-19, 600-1, 603-1
C336	Hansen, Laulette L.	W	100-19, 100-48, 300-1

* W – Written comment (email, attached electronic file, hard copy letter, etc.); P – postcard; O – Oral testimony at public hearing in Great Falls or Havre

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Comments and Responses

The following pages contain the comments and agencies' responses to comments, organized under headings listed in Table L-3 above. Comments are shown in italics. Responses appear in boldface print following the comments. In many instances, similar comments are grouped together and have one response.

GEN-100 GENERAL

1. *Member cooperatives of SME are fortunate to benefit from a new stable power source that will be built in Great Falls. C2*

   The board of SME, which I'm the chairman of at this time, has made every effort to address all of the environmental issues and all other issues, so that we could have the best, latest technology and the lowest cost power we can give to you our people. C90

   The completion of the Highwood Generating Station is vital to the cooperatives involved. C91

   SME cooperatives are committed to the goal that this additional generation for Montana will be achieved by using the cleanest coal technology available. C91, C92, C275

   I believe that we, as members of Fergus Electric, do need this generation. In 2011, we will be forced to go to the market to buy our power. It will be much more economical to build our own generation. C41

   I have had the experience of building and recently helping maintain 2 other fluidized bed boilers in Montana, one in Colstrip at the Rosebud Plant, the other in Billings at the BGI plant. I believe this clean coal technology, when properly built and maintained, is environmentally sound. C267

   I am a registered nurse and am aware of the emissions from coal fired generating plants. However, this plant is going to be the cleanest plant available and will surpass state and federal guidelines. We live about four miles downwind form the proposed plant and are very comfortable with this and have no plans of moving anywhere after the plant is built. C270

   We have been in talks for the last two years and have agreed to sell SME the land for the plant. This was not an easy decision and it was only after they flew us down to Maysville, Ky. And seen how clean that the newest generator that was just completed was. There was no visible emissions and the only thing they we seen was the water vapor coming out of the cooling towers. C271

   Response: Thank you for your comments.

2. *As a lay person, I found the EIS virtually incomprehensible. If this project is safe, it shouldn't take 725 pages to say it. C3*

   Response: An EIS has a set format by regulation and is not meant to be read like a book. Certain topics must be addressed. This includes the evaluation of the issues raised by the public and then the development of alternatives to the proposed action that must address those issues. An EIS must describe the setting of the proposed action and where the impacts might occur and then it must describe the potential impacts that may occur if the proposed action or the alternatives were to be implemented. The easiest way to tackle an EIS is to read the summary, then read

the proposed action and any alternatives that interest you. Then read the information on the existing or effected environment and the environmental consequences section for the areas of interest to you. Impacts may be directly caused by some aspect of an alternative, they may be indirectly caused by the action. Then in combination with other activities in the area: past, present, and reasonably foreseeable activities; there may be a cumulative impact to be disclosed. All this must be disclosed regardless of whether or not a project is anticipated to be safe or not. Although NEPA regulations state an EIS should be 150 to 300 pages long, it is generally difficult to write an EIS to be that size, especially if you add appendices to the cost of the EIS.

3. *The consulting company which represented SME is the same company that represented the Thompson Falls project. The Thompson Falls project is a disaster. There is reason to question the impartiality of the "independent contractor" in the preparation of the DEIS. Montana DEQ should require an independent assessment of both the need for and the best available technology for use in any Highwood Generating Project. C3, C8, C77, C165*

   Response: SME's contractor did not prepare the EIS. The third-party independent contractor which did prepare the EIS has no ties to SME. RUS contracted with this consulting firm – the Mangi Environmental Group. SME provides a source of funds from which RUS authorizes payments to Mangi. Purpose and need is established by the prospective borrower as part of their loan application to RUS; RUS thoroughly reviews/approves the purpose and need before the EIS process is begun. DEQ followed the established permitting process according to its regulations in determining what constitutes best available technology.

4. *Montana's greatest assets are her citizens and her clean, healthy, and beautiful environment. Please don't allow SME to damage Montana's citizens or environment. C3*

   Montana is a beautiful state and harmful emissions will do nothing but harm our earth and our people. In the long run it will hurt everyone, even the people that are behind this project and the people that work for it. People will finally realize when something bad happens. No amount of money is worth health and life. C194

   Everyone in the Big Sky State prides themselves on living in one of the last best places; so proud in fact that we use that moniker in our tourism business. Yet we are steadily destroying what makes Montana beautiful. The Berkley pit was one a mountain as beautiful as any of the Rocky Mountains. Remember when smog was only a California problem? The problems of the cities are here and if the coal plant is built they are here to stay. C208

   We do not need to defile our own back yard here in Montana. This is the Last Best Place and we had better not do anything to tarnish and poison our beautiful state. Stop looking at the bucks and start thinking correctly about how we treat our land, our people, our wildlife and our atmosphere. C254

No to global warming, mercury. Don't sully the wind of Great Falls. C255

Who could be cheerful or willing to spew mercury in the air of Great Falls & create more global warming? C256

I am a native of Great Falls, Montana….While recently vacationing in my hometown, I was dismayed to learn that Great Falls is considering the construction of a 250 MW coal-fired power plant. C265

A coal-fired power plant building proposal in 2006!...and during a democratic governor's administration! I am outraged and I am not even downwind from its proposed site. (I am West of GF.) I'd rather have brown-outs! C279.

Give us more wind farms, solar power generation and biofuels for our cars, tax our frivolous use of energy but do not pollute our air for the extravagant energy usage or out-of-staters and to make one company (probably not even American or possibly based in the Caiman Islands to evade taxes) rich. C279

3,0522,081 tons of Carbon Dioxide and 40 pounds of mercury a year going into the air is more poison than I want them or myself to breathe. C301

Response: SME provides energy to the City of Great Falls and industries located in the Great Falls areas as well as five cooperatives Montana. After going through a thorough site assessment process, Great Falls was the most suitable site for a number of reasons. Please read Chapter 2 for a description of the process involved. SME has applied for an air quality permit; even though emissions would be allowed, they must be protective of human health and the environment,

Please look at comments in Sections 601 and 602 for more comments and responses regarding air emissions and mercury.

5. *I support the Highwood Generating Station. C5, C15, C37, C41, C42, C49, C53, C67, C83, C96, C103, C114, C115, C120, C130, C139, C141, C143, C148, C158, C161, C267, C270, C271, C306, C322, C323, C324*

I'm assistant business manager for the International Union of Operation Engineers, Local 400, and president of the North Central Building Construction Trades Council. I have my associates coming to the mic. All of us standing here are considered to be leaders of the union movement in this area. And that may well be, but we are also all environmentalists. And we care deeply about this area we call home. C66

This project is not the brain child of the investment group designed to turn maximum product, while exporting power to the highest bidder. The Highwood station will be owned by the customers it serves. I bring with me over -- well, actually let me give you the right number, 4,139 signed and dated postcards with statement of support for this plant. The cards are signed by members of the Yellowstone Valley Electric Cooperative.

They are signed because the members want control of their energy future. They want and need stable, long-term electric rates, not just for their homes, but for their farms and ranches and other places of business. These people believe in the cooperative model business. They trust Southern Montana is making a solid investment in the future of their livelihoods. C161

We need a new generation of cleaner coal fired power plants in this country, so some of the older plants can be retired. C163

I have witnessed the progressive erosion of high-paying jobs, and value added industries from Montana to other states and overseas. Building the SME plant near Great Falls in small part reverses this trend. There is and will continue to be demand for power in Montana. It <u>will</u> be generated. Let's do it in Montana instead of elsewhere. C322

It is unfortunate that through the occasional commission of acts of violence, the environmentalists have lost some of their credibility. Would that they could be sent back in time to the cast-iron wood-fired cook stove, and the kerosene lantern as the only source of light. Yours truly has been there….We are right now experiencing another climate change in which the summers will grow progressively warmer. We have a choice; either increase generating capacity or experience power interruptions or brown-outs. C323

This project will benefit Montana citizens with high paying jobs. The plant will bring long term and reliable electric service to thousands of Montanans….What I am especially concerned about is that if this project is disapproved it will put thousands of Montanans at risk for being charged higher and higher electric rates. C324

Response: Thank you for your comments.

6. *The DEIS states that the scoping process to solicit public input on the proposed SME-HGS project began in the fall of 2004. A public meeting on October 13, 2004, at the Great Falls Civic Center involved fewer than 100 citizens. The format of this meeting and the information provided offered insufficient opportunity for the public to provide appropriate comment. For example, those who attended were given no opportunity to question City of Great Falls officials. Therefore, citizens had no authentic opportunity to discover the relationship between SME and the City of Great Falls. (Neither has such opportunity been offered to date.)*

   Other public meetings and media coverage have been carefully crafted and limited by SME to offer selling points for the plant. Therefore, public concerns about the plant did not surface during the DEQ scoping period (spring of 2005), as evidenced again by the registry of a mere 45 citizens at the DEQ scoping meeting in Great Falls on April 18, 2005. Also, most of these meetings have been scheduled during the work day which has made it difficult for many of us to attend.

If one contrasts the 2004-2005 lackluster public scoping response to the significant level of public response to this summer 2006 DEIS, the insufficiency of the earlier scoping opportunities are evident. C8

Many people have told me they were never notified of any of the meetings for the HGS. The EIS documents the scoping meetings held in the last 2 years and how the public was notified. As I have followed this project closely for quite some time, the first meetings started in August of 2003, so there has been much opportunity for public involvement. C306

Response: Scoping under the Federal and state environmental policy acts requires that attendees be given the opportunity to comment. Comment forms were provided at this meeting for this purpose. Additional opportunities for comment were also provided in the form of email as the email addresses of both the RUS and DEQ project managers were provided and U.S. mail instructions were also provided to the public for both agencies. The DEQ project manager extended written invitations to specific members of the public who signed up during the RUS scoping meeting. The purpose of scoping is to solicit comments regarding the key issues to be addressed in the EIS; if an attendee believed the relationship between SME and City of Great Falls was such an issue, the opportunity to submit a comment to this effect was given.

RUS and DEQ held their scoping meetings during the evening, not the day, making attendance more convenient for the working public. Agencies provide the opportunity for and encourage public participation, but are not responsible for the level of attendance by the public. Based upon the experience of both RUS and DEQ with other EIS projects, there tends to be greater public response to draft environmental documents than during scoping. This tendency also appears to have been borne out with the proposed SME HGS project.

SME may have held a few meetings during the work day; however, the majority of the SME public meetings were held in the evening. Since announcing its intention to move forward with the construction of HGS, Southern Montana Electric G&T has made in excess of fifty public presentations in the area that will be served by HGS. For example, a presentation to the Great Falls City Commission was made on 19 August 2003 for the purpose of furthering discussions regarding the City's interest in participating in HGS. The meeting was open to the public and well attended.

7. *Not until DEQ issued the [Draft] Air Quality Permit, late winter of 2006, did citizens begin to become aware sufficiently to question the City of Great Falls/SME plans for this CFB plant. Only then did the grassroots group Citizens for Clean Energy (CCE) emerge. Since then, City officials have rejected a number of requests for a public meeting on the coal plant. Therefore, it has been most difficult to get information about responsibilities the City is incurring. Information from SME has been limited to its web site, which has offered only certain particulars.*

The public has been denied access to complete and accurate information during the planning process. Most communities that consider such a public venture seek voter approval of the project. That the City of Great Falls should deny open consideration of this project is unacceptable. C8

There is public concern in Great Falls that the decision for a partnership with SME and that type of electric generation was made without public discussion. C29

In 2003 our city charter, our code, was changed. It was a vote of the city commission to start Electric City Power. When they changed our charter, it started Electric City Power, and part of that charter change said that before any general obligation bonds or taxes were spent on Electric City Power, there would be a vote of the people, and a majority vote of the people would allow the city to spend money. We have not voted on this. I hope, and perhaps we'll be able to vote in November on it, but I'm not holding my breath. C68, C116

The City of Great Falls, Montana, has never permitted its Citizens to vote on whether they want a coal plant business venture in Great Falls, even though it is the taxpayers who may be forced to cover losses in the development and possible operation of the plant. The Cascade County Commissioners have never approved the plant, nor consider its economic and environmental consequences to this region. Others living down wind from this plant have never been involved in the decision-making. Questions put to the city concerning proof of those willing to buy the power and the nature of the contract and the list of public meetings they have submitted to you have never been provided me, although I have requested them. How can citizens be permitted to meaningfully participate in a process which has been determined without such participation and then when participation is only granted if it supports the city manager's view. C78

I believe in the value and mission of rural electric co-operatives as well as municipal public power authorities. Few if any in our group oppose the Highwood Station because it is "public power" or part of a member-owned cooperative. It is precisely because it is someone else's cooperative, in a different part of the state, that we ask and demand that they distribute the benefits as well as the costs among their own members, and in their own region. As for the City of Great Falls and the Electric City Public Power entity, that is a problem we will have to solve for ourselves. This is only one of many boondoggles undertaken by Mr. Lawton and his cronies at our expense. We expect that he will resign or be dismissed shortly, and that his participation in this ill-fated venture will be annulled. The balance of public opinion is swaying markedly against the Highwood Station, and we expect that our complaints will soon find recognition in the official policies of the City of Great Falls. C134

The city of Great Falls has gone ahead with their plans without allowing its citizenry to have a vote on the matter. C250

I am writing regarding the Montana cities, including Great Falls, going in to electricity business….I think this is something that none of them know anything about. This reminds me of Montana Power going into the communications, and leaving a great Electric Co.

they knew and had done real well with….If they were to get set up in this, I think that a coal fired unit is not the way to go. Prior to even thinking about this, the City of Great Falls and the Cascade County commissioners made it impossible for NorthWestern to set up the gas fired generators they had planned. They are telling us how this is one of the best units of its kind. This may come under new regulations in a few years and be another big expense. C327

Response: In this case, neither RUS nor the DEQ has any control over the City of Great Falls' efforts to provide information, conduct meetings, or allow a vote on the city's bond issue. This item is outside the scope of review of the EIS.

8. *SME is continually modifying its proposal. After the DEIS comment deadline, how is the public to be kept informed of these modifications, and what is the appropriate method to respond to such changes? C8*

   Response: Any material changes to the proposal would be in response to comments/input received thus far from RUS, DEQ, or the public, and be reflected in the final EIS. The public will be given the opportunity to comment on the final EIS, per NEPA requirements and RUS regulations. The State of Montana MEPA process does not provide for a comment period on a final EIS.

9. *Who and how are the Feds going to ensure that "all necessary actions are taken for the prevention, control and abatement of environmental pollution"? C8*

   Response: If the comment is referring to air quality, wastewater or solid waste, the state permitting process, which is authorized by the U.S. Environmental Protection Agency, assures compliance with the necessary standards; no Federal action can proceed without this compliance. If the comment refers to "environmental pollution" in general, the impact assessment process and any required mitigation actions assure there are no significant impacts on the environment.

10. *The DEIS does not fully comply with the Montana Environmental Policy Act (MEPA) to promote "efforts that will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humans." Emissions of CO2, SO2, nitric acid, mercury and other contaminates are not acceptable, especially when alternative clean energy sources are now available. C8*

    Response: The DEIS and the air quality permitting process both assist with efforts to prevent and reduce pollution that would otherwise have occurred. With regard to CO2, there are no Federal or state standards for CO2 emissions, and therefore, DEQ cannot stipulate CO2 emissions standards for the HGS. Further discussion is provided in responses to comments included in AIR-603. Moreover, DEQ cannot stipulate or mandate alternative energy technologies, if the proposed action complies with all air quality standards.

11. *The statement is generally well written and comprehensible to most audiences, but 14 pages of Executive Summary preceding the vital Table of Contents makes general access*

to particular passages in the text more difficult. For example, at an Open House in Great Falls in July 2006, even a DEQ staff person needed almost ten minutes to locate a particular set of facts about which I had inquired. C10

Response: Thank you for your comment.

12. *The compartmentalized structure of the document does not cross reference important facts from one section to another in a meaningful way. For example, a rather thorough treatment of hazards of mercury poisoning stands alone (3.3.5), so that sections dealing with biological resources (4.6.2) or recreation (4.8.2) do not even mention this important subject. C10*

Response: An effort has been made while preparing the FEIS to provide more cross-referencing between sections.

13. *This new coal plant will add pollution to our environment. This is a point that cannot be disputed. No matter how "clean" the plant is, an ounce of pollution produced is an ounce more than what existed before. The dilemma is that we do have other cleaner ways to produce power, methods that produce no harmful byproducts, such as wind power. The reason that these alternative methods are not being placed in the Highwood area is not because they are ineffective, but rather because they do not turn the same hefty profit that a coal plant would. C276*

The entire state of Montana is being developed by wealthy corporations and out-of-state developers….The name of the game is more money for them and more pollution for us. We need a Public Utility that will give Montana Tax Payers a break in their energy bills and taxes. C280

The State has been sold out to Big Money and greed far too many times in the past. And we don't want it happening again, especially when it would affect our health and that of our friends and family. C287

Why is this plant even being considered? Are you people being bought off? I know how corporate America operates it is all about profit. C292

I cannot believe greed could overcome good sense and that we would actually agree to poison ourselves with a plant that pollutes with noxious emissions and mercury and brings on more global warming. C304

We have all seen what greed and avarice have done to Montana….A businessmen should not be allowed to poison the atmosphere of this city and this state and endanger all of the inhabitants because they can see nothing but dollar signs….Even California does not allow coal plants, nor will the governor of Idaho, our neighboring state. C308

The proposed HGS is a clear example of a failure of government at all levels to serve the people. It appears to be promoted by short-sighted few, and driven along by those who *stand to profit from the project and by those who have succumbed to the lure of tax revenues. These people are blind to the broader energy issues at stake here and the environmental impacts at larger scales. C334*

Response: Thank you for your comments.

14. *The technology planned for this enterprise is outdated. It will contribute pollution on a serious scale. There are better and safer technologies available. In this day of global warming, such proposed methods of producing power should be out of the question. C13, C16, C17, C29, C35, C38, C46, C48, C54, C56, C58, C59, C72, C74, C86, C88, C121, C123, C168, C170, C207, C233, C250, C252, C280, C287, C302*

    I would like to remind the board that coal is a dirty fuel that contributes to global warming. Also, the technology that is proposed for this particular plant is certainly not the cleanest that is available. California currently forbids the construction of coal-fired plants. The governor of Idaho recently announced that Idaho would not build coal-fired plants in the future either because, "Idaho's citizens deserve better." Montana deserves better too! C179

    Why would Montana want to build more coal plants and mire us in the 19th century? Let's move forward! C216

    Wrong plant. Wrong technology. Improperly studied. Don't build. C236

    I think the coal-fired technology is out-dated and produces unacceptable levels of carbon dioxide and mercury pollution. IGCC technology offers much more efficient production of energy with added benefits of much less pollution, although admittedly, at an initial higher cost. Still, I believe the cost is worth the long-term benefits of preserving our current quality of life, minimizing atmospheric carbon dioxide accumulation and probably avoiding a future "carbon tax." C263

    While I support generating more power locally and am in favor of cooperative efforts from Montanans to boost our economy, I am opposed to the technology being considered and the pollution that will be generated. The "circulating fluidized bed" technology doesn't appear to be as efficient as other options…. C313

    Response: The combustion technology proposed for HGS was selected after a thorough review and elimination of other possible means of generation. The technology was chosen as the most feasible based on its ability to address the purpose and need, be technically feasible, cost effective, and limit emissions to meet current federal and state standards.

15. *This project, if approved, will be another example of short-term profiteering at the expense of long-term destruction. Just as Montana Power so unwisely speculated on the water power readily available. The region is already seriously impacted by the arsenic*

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plum created by Anaconda Copper. Montana must be vigilant in preserving our environment. It's our constitutional right. C13, C50, C111

If we in the most prosperous nation of the world and in a state with the strongest constitutional guarantee to a "clean and healthful environment" can't set the example for making a decision in the best interest of public health and the planet, what hope do we have for impacting the 750 coal plants that will be built in China and India during the coming decades. A modern world needs electricity, but we also need clean air and water. C20

The Constitution of the State of Montana, Article 9 Environment and Natural Resources, Section 1 Protection and Improvement, One, the state and each person shall maintain and provide a clean and healthful environment in Montana for present and future generations. C18, C111

I had the honor of being elected as one of 100 delegates to the Montana Constitutional Convention in 1972. We debated over the wording in the document to give Montanans the strongest environmental protection in the country….We are very fortunate to be protected by our Constitution. Clean air is among Montana's most significant assets. It would be tragic to permit mercury emissions, particulate matter, and greenhouse gases to harm our beautiful state. C262

Not only am I concerned about Highwood Generating Project, but the Co-Gen Power Plant in Thompson Falls. I do have the right to clean air and water. C281

Response: Montana's environmental permitting regulations are promulgated to maintain a clean environment for all Montanans. This project as proposed will meet or comply with those regulations.

16. *The Draft EIS documentation that has been provided, while lengthy, is woefully inadequate. It does not address many health, environmental and financial concerns. C14, C58, C84, C105, C151, C167, C168, C331, C334*

After studying all the information at my disposal, I must say that there are too many questionable areas that are either unanswered or not addressed totally in the "EIS" concerning the proposed HGS near Great Falls….Please do not issue an air quality permit until all questions have been thoroughly analyzed properly. Mistakes could be devastating, in many areas…and the populace does not deserve that! C249, C302

This DEIS should be scrapped in favor a real analysis that places value on human lives and the human environment rather than the coop pocketbook. C303

The proposed Highwood Power Project and accompanying draft EIS are inadequate as currently designed. The proposal presents an unnecessary and dangerous threat to our environment, public health and welfare, and economic stability. C312

What I find most distressing….is that the proposal, which is being made in a context of recognized problems, some of which can be dealt with by way of technical and technological adaptations but some of which require of us value and/or attitude adjustments, will not be considered on the deeper level that is warranted by the realities of our times. In the light of such things as global warming, for example, all of the relevant problems require of us an urgent reassessment of how we have been living as Americans and Montanans, and a commitment to ways to realize the values that survive that critical reassessment which enable us to affirm them without creating a future for ourselves and coming generations that is intolerably degraded from what we know now, let alone what we inherited when we became old enough responsibly to participate in social, economic, and political life. C319

Response: An EIS is required to provide sufficient information to address issues to the level necessary to make an informed decision. This does not mean that an encyclopedic volume of information must be included for each issue raised by the public. Health impacts are addressed in the EIS and additional information is provided in Section 1300 in this Appendix. Numerous environmental resources are covered and the impacts identified and discussed in the EIS and responses to comments relative to those resources are presented in this Appendix. Since air quality is the primary issue of concern, it has the largest resource section. Financial concerns are not covered in detail as they were not brought up as an issue of concern and are outside the scope of this EIS. Cost in terms of mitigations is not a reason to require or not require it. Financial arrangements between SME and the City of Great Falls are outside the scope of this EIS.

17. *Where is the complete current "Up to Date" business plan, allowing the R.U.S. to compile their due diligence, which would show this loan to be viable and not a financial scam using taxpayer's money? Despite repeated requests, this "Up to Date" plan has not been available to the public for study, and no "Up to Date" financial report was submitted to the R.U.S. Somehow R.U.S. has to be able to show to the public how this money will be repaid in a repayment schedule and over what time period? C14, C78, C111, C174*

    Where are the documents in this draft EIS showing "The Itemized Use" of these tax dollars? There are also missing documents which would show allowance for contingencies and inevitable cost-over runs; this is important for the R.U.S. financial lenders. How much in cost-over runs is the R.U.S. allowing? All the cost estimates for this plant are older than one year. Is the R.U.S. going to require current cost bids? C14

    Capitalizing this plant will require certain loan security of this large loan. Will the R.U.S. require the documents showing the origin of the boiler, the boiler cost, the condition of being new or used? Also how much of the plant will be allowed to be used equipment? C14

    There needs to be a complete new draft EIS. The R.U.S. is morally obligated under standards of Good Business Practices to tell SME and the City of Great Falls that no *loan guarantee of any type will be forth coming until such time as a new document could be prepared with up to date cost, time schedules, complete business plans, signed contracts showing length of negotiation and price and quantity of product delivered. Such documentation should include all avenues of power supplied and types of help offered from different electric companies. The R.U.S. must require that accurate information is given in every aspects of the new document. C14, C20*

Response: The financial viability of the proposal must be demonstrated as part of a prospective borrower's loan application to RUS, and in turn forms a large part of the RUS review. Much of this financial information is contained in publicly available documents such as the Load Forecast Study and some of it is confidential and is not publicly available.

The loan application process to the RUS requires a prospective borrower to provide financial information, load forecasts, and requests for alternatives (i.e., building generation vs. buying power). This information is reviewed and the proposal is determined to be feasible prior to the EIS being started. Throughout the EIS preparation phase, the prospective borrower meets periodically with the RUS (both loan and environmental staffs) to update information as necessary. The RUS process assures that the information provided by any prospective borrower is accurate, current, and in conformance with standard financial and environmental best practices.

The use of contingencies in estimating the cost of the project is standard. These contingencies are reviewed with RUS in the application for a loan. If appropriate, periodically in the course of project development the project cost is reviewed. Should there be increases in the original estimates of project cost, the borrower must provide the additional financial information for RUS review. Therefore, any project cost increases and their financial impacts are known prior to loan approval by RUS. The RUS procurement requirements are established to ensure new equipment and materials are utilized in the development of the project. All of these RUS processes and procedures have been time tested and served to protect both the cooperatives receiving the loans as well as the federal government and taxpayers.

18. *Another reason for supporting this project is the cooperative spirit. This movement, contrary to other opinions, I believe is exactly what co-ops are all about, and have made this a very livable state over the past several years. Co-ops were started back in the days of my grandparents and provided electricity to them. This group today will seek and obtain affordable, stable electricity for Montanans. I think that's the key. We're not looking at some investor in utilities from out of state. The people that are doing this are friends and neighbors in our state. C15*

    The five cooperatives and the city of Great Falls are all local. We're all Montanans. I don't think any of this energy will leave the state. And we can be held accountable. That's considerably different than many of the large conglomerates who I think have taken advantage of Montana, have extracted resources from our state, taken them all out *of state, made money off of Montana. Our idea is to keep the energy here in Montana for benefit to fellow Montanans. And I guess just many of the board directors of the cooperatives have been around for years, and they have no desire to leave. C44*

Response: Thank you for your comments.

19. *I (we) oppose the approval of this power plant. C16, C20, C54, C60, C63, C69, C72, C82, C84, C86, C100, C102, C111, C112, C119, C122, C123, C129, C132, C136, C155, C162, C170, C171, C174, C175, C179, C186, C188, C189, C190, C191, C192, C193, C194, C195, C196, C198, C202, C204, C206, C207, C222, C250, C252, C257, C258, C261, C262, C263, C268, C272, C274, C277, C279, C280, C283, C291, C294, C295, C297, C299, C301, C302, C304, C305, C308, C309, C311, C320, C321, C325, C329, C330, C333, C335*

I oppose the DEQ issuing the above [draft] air quality Permit. Furthermore, I believe the DEIS is flawed, that there should be no ROD issued until the DEIS has been corrected, and finally I oppose the REA, of the US Dept of Agriculture providing guarantees, loans, and moneys for the development of the Highwood station. C78

The draft [EIS] at 700 pages is formidable and seems to cover many important facts. I want to call attention to the overall approach of this project. It seems to me that backers are encouraging a "this is good enough" or "this is the best we can afford to build" attitude. This is seriously flawed. It fails to recognize that a crisis in levels of heavy metals and chemical toxins in our atmosphere is rushing toward us at great speed…at this point the study offers choices we should not make. Only the very best of technology can be chosen. C173

My intention is not to patronize but assist. Our world is in danger of such setbacks. It is our job to keep it safe for our children and theirs. Our world already has too many problems to deal with and this should not be one of them. People have worked too hard to watch a company start up a facility so archaic. We are past the times of coal burning and should not think twice about its construction. It is an abomination to science, technology, and our current way of life. C205

I live near Colstrip and have lived through countless reassurances that all is well with practices of the industry there, in spite of some problems that are becoming increasingly visible to local folks….Many times we have gone through the EIS process, a process that seems to give lip-service to the law, but has an undercurrent of bias towards let's-build-whatever-it-is-this-time. We gotta have jobs today; the grandkids will figure out something when some of this goes sour. And customers keep asking for more power, believing the reassurances and seemingly unaware of the true costs to the people and the land. C328

Based on information provided at meetings, newspaper articles and concerns of respected citizens and community leaders in the affected area, it is my opinion that this proposed project will cause more harm than good. I'm all for good paying jobs, *increased tax base and energy options, but sacrificing a clean environment and a good quality of life for a few jobs and money is not the solution to the problem. C329*

Response: Thank you for your comments.

20. *Coal-fired power plants (particularly the type proposed in Great Falls) are highly polluting and economically risky. C17, C56, C61, C70, C81, C124, C135*

    I believe that it is very short-sighted and irresponsible to build the plant as proposed because of the mercury emissions, carbon dioxide emissions, and large consumption of water from the Missouri River. C259

    Response: Thank you for your comments.

21. *For over 2,000, 3,000 years plus, many generations before me, my people have lived off the land. And one of the things that they have done and that they have told us many times before is you don't fool with Mother Nature. And that's what they're doing here. And if we're messing with Mother Nature, there's a consequence. And there are some things that are far more powerful than we as humans. And I think those are the consequences that need to be taken into consideration here. C18*

    Response: Thank you for your comment.

22. *Considering the far reaching and longterm adverse impacts of the coal plant, the amount of time given to the public to weigh in on this issue has been woefully inadequate. We appreciate the two weeks extension of the deadline, but because this issue is so complex and because the public comment period falls within the busy timeframe of summertime vacations, we feel the public has been shortchanged in this process. It is clear that the more informed people have become, the greater their level of opposition to the coal plant. We hope the RUS and DEQ will consider further extending this deadline for at least another 60 days, leading up to the November elections so that our politicians can weigh in on this important decision. C20*

    Response: The RUS and MDEQ have followed all mandated time limits under Federal and state laws and, as noted in the comment, have provided for additional time periods. At the request of the public, MDEQ and RUS allowed for additional public comment in a second public meeting at Havre, Montana.

23. *Despite its public claims that it has "60 years of experience" in providing electricity to rural Montana, SME has had NO experience in the competitive and complex world of power generation and has had no experience in managing the round-the-clock grid transmission. In fact, SME was formed on May 31, 2004, following its "divorce" from Central Montana Electric Power Cooperative (CMEPC); this separation was triggered by irreconcilable differences in opinion about the coal plant proposal. Of the 14 original members of CMEPC, the overwhelming majority of member cooperatives (9) refused to*

participate in the risky plan to build a coal plant. The remaining 5 cooperatives formed SME. C20

Before loaning any money to SME, the Rural Utility [Utilities] Service needs to find out why the overwhelming majority of rural electric cooperatives serving our area refused to participate in building a coal plant. Consider that SME has no experience operating electric generation facilities, and they do not have the coal expertise in managing the transmission grid. C77

Has SME ever built any power generating station before. And have they ever managed the transmission grid? C54

Response: The prospective RUS borrower and ownership and operation of the proposed activity are evaluated along with other technical and financial criteria as part of the loan application process. SME and its member cooperatives have experience in many aspects of the electric utility industry. They have worked with BPA, WAPA, PPL Montana, and Northwestern Energy in wholesale power supply and transmission capacity procurement. SME was formed to provide power supply to its five member cooperatives, and this was reviewed as part of the loan application process.

With regard to the implication that Southern Montana Electric G&T's staff is woefully lacking in experience, according to SME, the core staff that launched Southern Montana Electric G&T (Warren Bickford and Tim Gregori) have a total of 58 years experience in the electric utility industry. They have a combined 32 years experience in wholesale power supply and transmission capacity procurement. From the time the decision was made to form Southern Montana Electric G&T in November 2003, they have negotiated contracts with the Bonneville Power Administration Power Business Line (BPA PBL), the Western Area Power Administration (Western), PPL Montana LLC, NorthWestern Energy Transmission Services Group, the Bonneville Power Administration Transmission Business Line (BPA TBL) and the Western Area Power Administration – Transmission Services Group.

Additionally, according to SME, Southern Montana Electric G&T is a registered entity on the OASIS as SMGT01. This is an important attribute as the OASIS is the mechanism utilized to schedule power transmission transactions. Southern Montana Electric G&T has renegotiated bifurcated BPA TBL contracts that separately serve the needs of Central Montana and Southern Montana Electric G&T, renegotiated the NorthWestern Energy NITS agreement in the name of Southern Montana Electric G&T, negotiated a new NITS agreement with the Western Area Power Administration transmission services group, and have continued to update the model real time telemetering system that protects the cooperative members from supply market volatility.

24. *SME's customer base is in southern and eastern Montana, so it appears that not only is it inefficient to haul the coal hundreds of miles, but also it is inefficient to transmit the electricity back to energy-rich southeastern Montana and northern Wyoming. C20, C151*

    If Montana needs to produce more electricity from coal, they should produce at the mine, to save energy, and keep all the pollution in one sacrifice zone. C35

    It would seem more practical that a facility dedicated to serving the needs of the energy industry in Southeast Montana could be built near that site, if only for the economic benefits of transporting the coal fuel and electricity much shorter distances. C10

    Coal mined in SE Montana will use petro fuel to ship the coal to GF, then burned here –a poor, inefficient use of fuel. C333

    Response: The Site Screening and Site Selection studies conducted as part of the proposal development phase explain in detail the criteria and processes used in choosing the proposed plant site. Additional information from these studies will be included in the FEIS. Forty percent of SME's customer base is in relatively close proximity to Great Falls. In fact, if the plant were to be built in southeastern Montana, much greater transmission infrastructure construction would be required, as noted in the referenced studies. Other environmental factors were weighed in the elimination of alternative sites, such as access and the availability of water, heat rate, and the proximity to Class I air areas and Indian reservations.

25. *As part of its overall agricultural mission how much better it would be for the RUS to use its twenty-first century federal tax dollars to fund futuristic distributive renewable energy sources such as the emerging biofuels industry, windfarms, and small hydropower, thereby bringing additional "crops" to struggling family farms. C20*

    Instead of encouraging rural electric cooperatives to become producer-cooperatives of distributed, farm-based renewable energy (wind, biomass, solar, etc.), they are funding more old-style coal plants which have proven to be environmentally disastrous and economically unsound, given the external costs of global warming. C134

    Response: RUS also funds renewable energy projects, but addressing the mission of RUS is outside the scope of the EIS.

26. *I believe that all parties involved in the process have done well in including public input, including the RUS, SME, the Montana DEQ, and the City of Great Falls. From the beginning of our energy venture, the city has kept its activities highly visible to the public and has provided opportunity for public input at every public meeting it's held. C22*

    Over the past several years, there have been at least 50 public meetings relating to the city's energy activities before the Great Falls City Commission, Great Falls Neighborhood Council, the Electric City Power board of the directors, and the Montana Public Service Commission. C22

Montana enjoys some of the best open government laws in the nation. And in Great Falls we pride ourselves on being an information resource to the public, as well as including public input into all of our processes. Our energy activities are certainly no exception. C22

Response: Thank you for your comments.

27. *I urge all decision makers not to base your decision on the fact that the proposed plant has gained a certain momentum and has many supporters, many whom stand to financially benefit from an affirmative decision. It is not too late to change direction. C24*

Response: Thank you for your comment.

28. *I cannot find where the applicant has done extensive scoping and alternative review with the primary downwind communities in Montana and Canada. This would include extensive discussions with the Indian Nation residing at Rocky Boy Reservation. The Final EIS should include discussion and documentation of the public scoping and mitigation incorporated into the plan to give priority to the primary downwind recipients of the pollutants from the proposed plant. C25*

What 'scoping' was done for citizens outside of the City of Great Falls to get their input, especially when many rural residents, ranchers and farmers already use Northwestern Energy, and where is our right to be heard, as this could effect Northwest Energy's rate structure and service for Cascade County citizens outside the city? C80

The process that has occurred with this proposed power plant seems one sided. All the scoping hearings and hearings for the draft EIS have taken place in Great Falls. We were not given notification of these hearings. Hearings should have been held in multiple communities that this power plant will service and impact. C104

All during the RD and DEQ scoping process, not once did the Fort Belknap notice a scoping meeting being held on a Native American Reservation. With the high unemployment rate and poverty, many Tribal members are unable to travel, due to high fuel places. C320

Response: The DEIS, Section 1.5.1, describes the scoping process that was undertaken, and includes web links to detailed scoping reports that were completed by RUS and the DEQ. The Record of Decision will describe any required mitigation. There were no requests from the Rocky Boy Reservation to hold scoping meetings after the RUS and DEQ scoping meetings. As required by the EIS and NEPA, MEPA requirements and processes, notification was made to the potentially affected public by means of public legal notices and news releases. These notifications and releases were noted in the public scoping report as recorded in the DEIS document which has been carried over to the final EIS document. In

addition, when the first draft air quality permit application was issued on March 30, 2006, additional public notification occurred which fulfilled the requirements of the MDEQ process.

The number and location of scoping meetings is determined by the magnitude of the proposal, the potential area of effect, and population size and distribution. It was determined that one scoping meeting each for the RUS and DEQ, which occurred at separate and distinct times, was sufficient.

29. *Short of court injunctions, my question is whether there any way at this point to stop the progression of the power plant, or is this a done deal? C27*

Response: The proposed project will progress to the completion of the EIS process. Once the Record of Decision has been signed, one could challenge the EIS under NEPA or MEPA through the Federal and state court systems, respectively, depending on whether the Record of Decision is a joint one. The state air quality permit has not been issued, to date, in final form. There is a Montana state appeals process to appeal the air quality permit.

30. *The fact is that the Draft EIS presents the public with non-scientific and conflicting misinformation. The document reflects a close cooperation between the proponents of the coal industry and the DEQ. C29*

Response: Thank you for your comments.

31. *I have many more objections to the awarding of a permit for the Highwood Generation Station. At minimum, there should have been wider collaboration between Montana governmental agencies such as the Fish, Wildlife and Parks, and especially the Montana State Historic Preservation Office before a Draft EIS can be complete. Since it is obvious that there has been a great deal of collaboration between SME and DEQ in the composition of this Draft EIS, there has been a failure to understand the unintended consequences in a wide range of subjects from air pollution to social impacts for this document fall far short of its objective. C29*

Response: Notice and coordination was completed with a large number of state and federal agencies as shown in Appendix D. The array of topics covered in the EIS reflects the breadth of concerns considered. The Table of Contents lists 14 resource areas, including air quality and the socioeconomic environment. Additional consultation is occurring with regard to the Great Falls Portage National Historic Landmark, and the FEIS documents this consultation process and any mitigations recommended as a result of the consultations.

32. *As I heard about the opposition to this power plant, my big concern was what are we going to do in the future. It's been pointed out by some of the SME board members that we're going to be out of electricity shortly. Where is it going to come from? I know there's a few against the HGS, but on the other side there's many Montanans that would*

benefit: Homes, businesses, and agriculture. It appears that some people come up with reasons to stop any kind of new production of electricity or energy. And I wonder how many people are willing to turn off their lights, do without your computers, shut off your air conditioning. I enjoy the 21st century. I know we have to go about this right, but I believe we need a good solid supply of electricity. C31

I don't think Montanans should have to contend with brown-outs in the summer and rising costs at someone's whims while competing in California, Arizona, Colorado or other states for grid electricity. We could be producing that electricity through our local co-ops in our own state with our own people, with our own coal and, just for something different, providing a future for Montana. C31

Response: Thank you for your comments. The purpose of the EIS is to help determine whether the HGS should be financed and permitted to provide power for the cooperative.

33. *Based on the procedures EPA uses to evaluate the adequacy of the information and the potential environmental impacts of the proposed action and alternatives in an EIS, the HGS DEIS has been rated as Category EC-2 (Environmental Concerns - Insufficient Information). This rating is based on EPA's remaining concerns about potential visibility impairment at Class I Wilderness Areas, and additional information and analysis needed for wetland and aquifer protection in the FEIS. EPA believes additional information is needed to fully assess and mitigate all potential impacts of the management actions. C36*

    Response: Appropriate information has been added to the FEIS to address these concerns.

34. *Under Section 6602(b) of the Pollution Prevention Act of 1990, Congress established a national policy that details preferences for pollution prevention. Pollution prevention, or "source reduction," encompasses practices which reduce, eliminate, or prevent pollution at its source. By reducing the total amount of pollution that is produced, there is less waste to control, treat, or dispose of, and there are less hazards posed to public health and the environment. We recommend that the final EIS identify how SME will avoid/reduce pollution at the source as the preferred course of action at the HGS to lessen the need to recycle, treat and otherwise implement Pollution prevention objectives. C36*

    Response: The installation of a new facility brings with it the technological advances which have been made over the past years. This means there exist newer steam turbine blade designs and steam generator configurations which have been improved upon for many years and decades. When used in the proposed project, the results will be less utilization of fuel (coal in the case of the proposed project) for an equivalent unit of electricity compared to older, less efficient designs. Thus, in general, there is reduction in the pollution generated compared to these older facilities. Additionally, the use of Montana sub-bituminous coals and the hydrated

ash re-injection system requires less lime injection in the form of limestone utilization (and the resultant waste stream) for an equivalent removal process to control SO_2 emissions. This potentially results in less waste material which will be disposed in a landfill location. Finally, if the materials produced at the facility are deemed compatible for use in a secondary application, the material could be "recycled" into such items as concrete or road base applications. Options such as these will be explored once the material streams are identified. Other utility practices will be evaluated to determine if they are compatible for the HGS materials produced.

35. *The Montana antidevelopment community says the pace of life in American is too fast. The best means to control and reduce that pace is by controlling the availability of electricity. Their strategy is working. New hydro power is shut down. Nuclear power is frowned on. Coal-fired power is under attack. Wind power has serious problems. As each form falls on hard times, a replacement comes forward, but at much higher costs. What is the real agenda of the protagonists? In my mind, the answer to that question seems obvious. America, as we have known it, is headed into third world status. C37*

As a fourth generation Montanan, I ask the Montana majority to stand up, reinstate control over our future. Environmental elitists have had their way with us long enough. Montana is the milk cow for the east, west coast, and now the world economy must change. We must stop exporting our economy and leave our life blood in our own children. C37

I don't see why that we should kill this plant in order that someone else will build it and sell us the power at a higher rate, and maybe not as reliable. They talked last time in Great Falls about the steam plant not being reliable. It's the second most reliable plant going outside of hydrogen, and I don't think anybody can deny that. Every day we see more houses built, more buildings built. And every day I see a power line extended to them. They haven't adopted this alternate power of hydrogen whatever. It may come, but we cannot wait for it at this time. C43

Response: Thank you for your comments.

36. *The draft EIS outlines very well the study and work that went into the decision that SME made to build the HGS. SME has spent a great deal of time and invested money to thoroughly examine each step of this process. Some of the major steps we have studied were, number one, the need for generation; number two, the type of generation to build; and site selection. And I would just like to reemphasize that I feel that this draft EIS does a good job of outlining that. C39*

I believe we got a real sound EIS with standards that we'll meet, and also that our air quality permit is a very stiff one, which we plan to meet them, especially on the mercury rule. C41

Nothing that I've seen over the course of the past several years has caused me to have any reservation about proceeding on with this plan. The question tonight is whether the EIS is adequate. I've read part of it. In my view, it is adequate. It addresses the issues that need to be addressed. C52

I thank all of those that put the work into the draft EIS. I think they bent over backwards to try to get everything, spent more time and more paperwork on a bunch of junk that is worthless. But they have to do it, and they've done a wonderful job on this EIS. C57

I have reviewed the DEIS and have no concerns with it. The power plant will have a positive on local and state economies. It will provide jobs and power. It will have minimal impact on the environment. Please complete the EIS with haste so that this plant can be put into operation soon. C67

The completed DEIS was done very carefully and very thoroughly, with attention given to all areas of concern Any concerns that I have heard expressed by the environmental community have already been addressed by the DEIS. C91, C92, C93

If this plant isn't built, if it really does get to a 120 degrees, then who is going to have the electricity to keep cool. I mean there are consequences to all of these decisions. But this is a good way to go. This is a good plant. I think you did a great job with the DEIS. I agree with the conclusions they reached on all the levels. C96

My reading of the published DEIS tells me that it is a reasonable, accurate reflection of the facts as they exist. The members of Southern Montana Electric must replace power they are now receiving from Bonneville Power Administration by the year 2011. It cannot do this with hydroelectric power nor with wind power alone. As a result, the most feasible and workable solution to this dilemma appears to be that which Southern Montana Electric has developed, a coal fired generating plant with the most recent and cleanest technology of proven reliability. This, coupled with the wind power being proposed to supplement it, will be cleaner than any other reliable source actually available to the consumers of Southern Montana Electric. C130

I think the HGS is a well designed, well planned, well thought out project. And I want to say that I think that you did a very good job working on the EIS trying to address the issues. C139

We're not claiming that HGS will solve the nation's or the state's energy needs, but is a solid step in the right direction. Building this plant would remove Yellowstone Valley Electric's, and the other cooperatives and City of Great Falls' reliability on plants such as the Corrette steam plant. This is a coal-fired steam plant with absolutely no emission controls. It's a stack and a boiler. This is a solid EIS and a solid air quality permit, and it should be resoundingly approved. C161

I believe the EIS for Highwood Generating station is a good quality draft put together by top notch engineering like Mangi and Bison. C163

As the General Manager of Fergus Electric Cooperative, I strongly support the Draft EIS and Draft Air Permit for the HGS. I believe that the Montana DEQ and the USDA Rural Utilities Service have done an excellent job of addressing all the environmental needs of the proposed CFB power plant east of Great Falls….I strongly agree with the Draft EIS and the Draft Air Permit that the environmental impacts on Great Falls and the surrounding area will be minimal. The four wind turbines will be a nice complement to the coal-fired power plant. If the four wind turbines are a cost-effective addition, it would likely encourage more wind generation to be built in the state. C44

I would like to commend both the Montana DEQ and the Rural Utility Services for the thoroughness of the DEIS for the HGS. I believe it covers all aspects of the proposed plan and alternatives. C306

It is understandable that some are now, and always will be, rightfully concerned about air pollution, especially here in "Big Sky Country." However, we've come a long way since the days of huge "sky-scraper" smokestacks belching black, sooty pollutants into the air. C323

Response: Thank you for your comments.

37. *Montana generates more electricity now than it uses. I believe that it is bad public policy to allow more power plants to be built in this state, especially non renewable, air polluting, greenhouse gassing generating businesses. This proposal boils down to the simple effect of a business, albeit a coop, seeking to profit at the expense of Montana's air quality. C46*

Response: The State of Montana, by regulation, responds to a permit application regardless of the reason or the power source. The permitting process determines whether the proposed project can comply with the state's air quality statutes and regulations. The air pollutants are addressed in other subject categories. Governor Schweitzer and the state legislature have determined that all state-based cooperative utilities must comply with the spirit of the law as it applies to other power utilities, and work to include 15 percent renewable sources in their energy portfolio. This project includes four wind turbines that would include 6 MW.

38. *DEQ has given the Thompson Falls plant three different permits. They were fining the plant $1.8 billion upon inspection. But that's a drop in the bucket for a big corporation like them. The DEQ may fine the plant, but it's very rare for them to ever shut one down for violations. So who pays for that? We do in our health and well-being. C48*

My sympathies go out to the citizens of Great Falls. I say to them inform yourselves about coal fired generation. Know the facts for yourselves because you will be facing a barrage of propaganda. In promotion of a coal fired generator propaganda is elevated to an art form….Thompson River Go-Gen has been fined twice for non compliance. There will be no benefit, only pollution and destruction to our community. People were brought in for the 12 jobs that resulted after construction. Montana needs to reinstate laws to control the pollution from coal fired generators. C222

Response: The status of the Thompson Falls plant is outside of the scope of the EIS review for the proposed project. The proposed action is based on fulfilling the requirements established by the state and federal regulations at the time of the permit issuance. The benefits of the proposed action include up to 550 construction jobs and 65 permanent jobs. SME has proposed this plant to provide power from Montana coal for Montana customers and would most like try to contract with Montana companies for constructing the plant and hire Montana residents to operate the plant. The permanent workers would pay income tax, the plant would generate more property and income taxes than is generated from the land now, and there would be secondary financial benefits from support industries. This proposed project and any coal-fired power plant are subject to numerous statutes and rules that control pollution discharges and emissions.

39. *Regarding the EIS, I find it is very vague. I found many instances where it stated impacts cannot be specified or quantified, or, quote, "would likely lead to" or "probable likelihood of occurring." A really good example of EIS double speak, on EIS-9, "The overall rating from construction impacts would be adverse and nonsignificant." If the impact is adverse, which Webster says is meaning acting against or hostile to one's interest, how can it be nonsignificant? I think the EIS should have facts, not conjecture. It needs to be reviewed and rewritten. C48*

I would like to address some of the language that appears in the comparison of direct, indirect, and cumulative environmental impacts of alternatives that appear in the EIS document. It's an interesting thing. Small bits of language sometimes are very -- and you'll find in the Alternative 2, the Highwood Generating Station Salem site, proposed action, if you look at the bottom of each little item, it says that overall impacts would be adverse, but that they don't appear to be significant; nevertheless, the potential is for them to become significant. That seems to be the language in each item that we're discussing. C118

In numerous sections throughout the DEIS, descriptions of impacts of HGS on various resources contain the phrase "there is a potential for them to become significant." The phrase first appears on page ES-8, appears in numerous other impacts summaries in the Executive Summary and throughout impact assessment in the document. This phrase has no meaning, not only in terms of the matrix of significance developed by Mangi Environmental, but also in the context of the DEIS itself. If the impacts are likely to be non-significant, unless there is a projected change in circumstances that is discussed in the DEIS, there should be no "potential for them to become significant." This phrase should be eliminated in the Executive Summary and throughout the DEIS. C128

Of the 14 categories reported on (pages 9-10-11) under "Proposed Action: Highwood Generating Station – Salem Site," nine of these make the statement, "Proposed Action would be adverse and most likely non-significant, but with the potential to become significant." How can the DEQ issue a permit under these vague findings? C269

Response: Statements like "would likely lead to" or "probable likelihood of occurring" are conclusionary statements, not the analysis itself. Predictions in environmental science are often by their nature inexact, and necessitate broad ranges or levels of uncertainty. Impact assessment can result in adverse (or beneficial) impacts that are non-significant. The DEIS explains how significance was defined in Section 4.2.2.

Use of the phrase "…potential to become significant" has been re-evaluated in response to comments and a re-evaluation of what is required for an impact that is likely to be non-significant to become significant. Appendix J contains those definitions.

40. *I think right now you're building a big, white elephant. I think that the generating powers of the world, especially Scottish power that owns most of them here, the thing that you're building is an obsolete white elephant. In a few years, everybody's home is going to have a little power pack, a little hydrogen generator. There are all kinds of things on the market. C51*

Response: Thank you for your comment.

41. *I live where the air is very fresh, and the water is clean, and we would really like to keep it that way. For the record, I would like to ask if the Highwood station were be located upriver and upwind from Great Falls, Montana, would the same proposed technology be acceptable? Twenty-year-old technology has no place in Montana culture, land, air, and water. More time and more public input is necessary to ensure that we make the right decisions. C54*

Please take a new look at this plant and require it to use current technology and reduce its size. C55

Why generate the huge amounts of pollutants associated with this old technology? Whatever happened to wind power, solar power and good old-fashioned conservation? C309

This is old technology, which will emit unacceptable levels of pollutants, including mercury and CO_2 & CO. Has DEQ heard of global warming? Is there no Montana policy to minimize CO_2 emissions? C312

Response: Permit decisions are not based on the age of the technology, but on the ability of the technology to comply with current environmental standards and with the Montana air regulatory requirement of "best available control technology." The Montana DEQ has issued a draft air quality permit for this project finding that the project does meet this "best available control technology" standard. Moreover, the boiler design and pollution control technologies proposed for this project are "state of the art" advanced technologies proven in their applications. The NEPA process provides for one additional comment period after the issuance of the final

EIS. The pollutants regulated by Montana law are discussed in detail in the draft and final EIS. The greenhouse gas emissions noted in the comment are not currently regulated and an additional subject category of responses to the public comments (AIR-603) are noted in these responses.

42. *I say deregulation needs to be repealed. I say we need to take our dams back. C62*

We find it totally incomprehensible that this plant should have ever been proposed or planned as a "solution" to the state and federal deregulation debacle of our electric utility companies. These were legislative mistakes, sponsored and actually written, in most cases, by private corporations and industry associations in pursuit of their own private gain, not the public well-being and convenience. The process by which this happened was largely illegitimate, and even if we can't do much on the federal level to change or repeal these "de-regulation" policies, the State of Montana and the RUS can do a lot, within their own administrative and legal mandates, to minimize the damage which these industry-sponsored policies have brought about. C134

I looked at the draft environmental impact statement, and it's brought to you by the same people that brought you energy deregulation. Let's be clear about that. Deregulation is lawlessness. Privatization is selfishness. Public utilities are for the common, they're for the common good. C151

Response: Thank you for your comments.

43. *Part of me says those Great Falls politicos can just go ahead and lose their shirts - why should I care? But we really are all in this together. "We" will end up bailing out the SME folks, and 'we' will all be impacted by their greenhouse gas emissions and other pollution. There is really something fundamentally wrong with our economic and political and regulatory system if such a lousy proposal as this can somehow gain a critical momentum and then become unstoppable. C69*

Response: Thank you for your comments.

44. *I concur with all of the concerns expressed by Montana Environmental Information Center (MEIC) regarding the proposed power plant. C71*

Response: Thank you for your comment.

45. *This DEIS seems to be based largely on information supplied to it by SME, and as such the EIS is biased and incorporates these assumptions. This affects conclusions of the DEIS and results in a document that does not accurately reflect the truth. C77, C111*

It was clear to me in reading the DEIS that it was put together by proponents of the HGS, and the statements were not subjected to scrutiny of knowledgeable experts in the variety of areas that it addressed. C84

Response: Environmental impact statements on proposals for which RUS is considering funding and DEQ is considering permitting are prepared by contractors procured by RUS. It is standard practice for the contractor to rely on preliminary information and documents that the project proponent collects and prepares during the loan and permitting application processes. The USDA and DEQ are ultimately responsible for the content and findings of the EIS.

46. *Consider that this coal plant is many times larger than it needs to be. Where are the customers? C77*

Response: These topics have been, continue to be, and will be evaluated in the consideration and approval of the loan application. This is also addressed in the EIS through the discussion of predicted load demand. See also response to comment #23.

47. *SME asserts that this plant will provide a stable, low cost source of electricity. This assertion is assumed to be true in this EIS. But what if the power from the Highwood station is not less expensive but more? I think it is at least very possible that the cost from this plant will be volatile and expensive rather than stable and cheep. The people proposing this plant have not considered the add-ons of a tax on coal generated power or the rising cost of fuel, even to haul the coal, and other raw materials to the site. These things must be considered before we can assume that the power from this plant will be cheap. C77*

Response: SME has informed the agencies that they have considered these factors and it is in their own interest as a consumer-owned cooperative to have done so. That said, in the more distant future, uncertainty affects any and all forecasted prices. These are SME's, not the agencies' assertions, pertaining to the proposed action, although these assertions were derived by analysis using methodologies mandated by RUS to all prospective borrowers and prepared under RUS guidance.

48. *I believe the things we will lose by building this plant are things that are priceless. Things like our Big Sky, the health of ourselves and our children and our children's children, and the viability of our planet to sustain life. C77*

I'm concerned about the unstudied adverse effects on the vegetation, the water, the air, the animals, the entire ecosystem that has a delicate balance. As the previous speaker mentioned that, for my generation, I'm concerned about the seven generations to come. There will be an untold imbalance and a cost to our health, our culture, our plants, medicines, our food, and our way of life. C119

Thank you for the opportunity to comment and may you make a decision which is good for all of Mother Earth's residents. We must preserve this planet for future generations and not allow unmitigated greed to run rampant over us. C125

I have heard about this in the news, and I am extremely upset that a project such as this is even being considered anywhere in the U.S., let alone in the most beautiful, "Last, Best

Place" that there is - Montana. It is also near enough to me to affect me and my family personally, and I do not wish to be more contaminated and unhealthy because of this. C146, C147

Those favoring the coal plant only talk of jobs and furnishing some electrical power. As I understand it would be primarily for businesses. It is too high a price to pay for the health of the citizens of Great Falls and surrounding areas to accept such poor planning on behalf of our city. I shall be extremely disappointed if this plant is accepted on the EIS review with the emissions that it lists for this plant. C171

If we only learn one thing form the fire season in Montana, it's just how precious, prodigious, and priceless our clean, clear blue skies are and just how quickly and easily they are changed and gone. Furthermore, if we truly believe Montana is "The Last, Best Place," why, then, would we want to bring in pollution equivalent to the emissions of every car, truck, motorcycle and bus in the Seattle area…everyday?....We do not need this plant – not until safeguards are in place to protect and keep clean the Big Sky of Montana! C293

I believe the proposed coal plant is not in our benefit…I think the coal plant will badly impact our environment. C332

The country north and east of here, where I grew up, was pristine when my grandfather homesteaded here, less than 100 years ago. It still has the qualities so much of the rest of this country – the rest of the world, and I have seen it – only longs for in dreams: clean water, air you can breathe, unpolluted ground and Montana's famous skies, a reprieve for the soul….In less than 200 years we – not "we," but a few big industrial polluters – have turned a green and beautiful land, capable of sustaining all of us, into something like the filthy, grimy country around Pittsburgh. C336

Response: Thank you for your comments. The intent of the EIS and permitting processes is to analyze and minimize the impacts of the proposed action on these important values and the environment that all Montanans cherish.

49. *I oppose the DEQ issuing the above [draft] air quality Permit. Furthermore, I believe the DEIS is flawed, that there should be no ROD issued until the DEIS has been corrected, and finally I oppose the REA, of the US Dept of Agriculture providing guarantees, loans, and moneys for the development of the Highwood station. C78*

The City of Great Falls, Montana, has never permitted its Citizens to vote on whether they want a coal plant business venture in Great Falls, even though it is the taxpayers who may be forced to cover losses in the development and possible operation of the plant. The Cascade County Commissioners have never approved the plant, nor consider its economic and environmental consequences to this region. Others living down wind from this plant have never been involved in the decision-making. Questions put to the city concerning proof of those willing to buy the power and the nature of the contract and the list of public meetings they have submitted to you have never been provided me, although I have requested them. How can citizens be permitted to meaningfully participate in a *process which has been determined without such participation and then when participation is only granted if it supports the city manager's view. C78*

Response: Any potential borrower must demonstrate in its loan application the financial viability of the proposal, including the participation of other entities.

50. *I feel that our process here in Montana under our requirements constitutionally for a clean and healthful environment have been pulverized by the past administrations. The fact that we no longer have a facility siting act; that we have an air quality permit process, which is backwards; the fact that this is only a procedural method for them and not a substantive method for them means that there's no guarantee in the decision that is going to be made by the Department of Environmental Quality as to whether or not this plant really does affect things. So it can't really do what it should do. This is a failing of our legal system. We don't have adequate measures that you people can follow. C78*

    In the absence of scrutiny under the Major Facility Siting Act, the duty for performing a robust and independent determination of need for a coal-fired power plant does not go away. Rather, it must instead be carried out in the context of the EIS. C95, C134

    Response: The RUS is responsible for and will complete such a determination.

    DEQ implements the statutes for which it is responsible. DEQ can make recommendations with regard to resources for which there are no statutory requirements. It is up to the applicant to determine which of those non-statutory mitigation measures they would choose to implement. Changes to this system can only be met through the political process through the state legislature.

51. *Why is the Department of Energy not included in this entire assessment, particularly since the US Department of Energy has its own 'Wind Powering America' that could be exploited to fulfill and to complement the USDA's efforts to increase RURAL economic development and protect the environment? C80*

    Response: Although the U.S. Departments of Agriculture and Energy cooperate on other types of energy-related programs and initiatives, including a recent national conference on renewable energy, the DOE does not have a financial, programmatic or procedural connection to the Highwood proposal. However, as noted in another response, SME has been notified by the IRS that it was approved for financing for its wind turbines under the Clean Renewable Energy Bonds (CREBS) program.

52. *Where are the actual advertisements listed in the Great Falls Tribune, or where they merely legal size notices 'buried' within the daily papers? C80*

    Response: RUS is required to publish its public notices in the main section of newspapers, rather than the classified, legal or other obscure sections. Both the RUS and DEQ notices were made a part of the public record and included in the public scoping reports. The subject advertisements were copied and incorporated into the reports as an appendix. Also, affidavits by each paper editor are provided

as proof that the subject published notices exist. DEQ issues press releases that the news media may or may not choose to publish or air. These releases are often followed by reporters' inquiries to the agencies and articles that appear in prominent locations.

53. *What 'scoping' was done for citizens outside of the City of Great Falls to get their input, especially when many rural residents, ranchers and farmers already use Northwestern Energy, and where is our right to be heard, as this could effect Northwest Energy's rate structure and service for Cascade County citizens outside the city? C80*

    Response: The number and location of scoping meetings is determined by the magnitude of the proposal, the potential area of effect, and population size and distribution. It was determined that one scoping meeting each for the RUS and MDEQ was sufficient.

54. *Why was the civic group, 'Citizens for Clean Energy' denied the 'Right of Assembly' to setup a table – not necessarily in close proximity to SME, ECP and commercial contractors – at 5PM, 27 July 2006 before the 7PM public hearing? C80*

    Response: The 27 July 2006 event at the Great Falls Civic Center was a public hearing and open house to provide and receive information, not a political forum. Citizens for Clean Energy members were not denied the right of assembly; their representatives were able to gather petition signatures at the entrance to the building. They were also informed that they could speak to members of the public entering the building but requested not to impede their access. Members were observed gathering petition signatures. This approach is standard procedure at MEPA hearings conducted by DEQ.

55. *Would SME ever purchase coal locally in the old coal-mining area of Stockett, Sand Coulee and Tracy, particularly when an SME official 'speculated' on the possibility? C80*

    Response: The coal located in these areas is a high-grade, sub-bituminous or low-grade bituminous coal. SME conducted a very high level review of these reserves as a potential fuel supply and concluded that these reserves are not currently a viable fuel supply option. If a different coal supply was used for HGS, it would likely require a modification to the air quality permit for the project. Furthermore, if the coal supply envisioned for use in the boiler is not at a permitted mine, a full permitting process for a coal mine would be required before the coal could be mined and supplied to HGS.

56. *What impact would occur if the either CFB coal plant site were to be shutdown for regulatory non-compliance or for any other reasons? C80*

Response: DEQ works with permitted sources to resolve issues of non-compliance before resorting to shutdowns. Therefore, this regulatory scenario is possible but highly improbable.

57. *One of the hardest things that we have to focus on in the future is where do we get our energy from. America is growing. Montana is growing. And as we grow, as our kids, our grandkids and all of these people grow, form their own households, they need energy. We need energy to run our computers, power the lights, power the irrigation pumps, which are more efficient use of the land. C83*

Response: Thank you for your comment.

58. *Those who want to see an IGCC plant should introduce this in the State Legislature. We have a few legislators here tonight. Let's introduce some bills to have the State of Montana help fund this. I'm hearing that it's going to cost more. SME customers are my neighbors and I can't tell them to go out and spend more because, you know, there is better technology out there. I'm saying, if the technology tonight [CFB] meets the rules as we have them set up, let's go for it. C83* N

Response: Thank you for your comment.

59. *The board of SME, which I'm the chairman of at this time, has made every effort to address all of the environmental issues and all other issues, so that we could have the best, latest technology and the lowest cost power we can give to you our people. C90*

The completion of the Highwood Generating Station is vital to the cooperatives involved. C91

SME cooperatives are committed to the goal that this additional generation for Montana will be achieved by using the cleanest coal technology available. C91, C92

Through atmospheric pollution and depletion of natural resources, it is clear that coal-fired power plants such as Highwood impose a significant cost on the environment. It is therefore incumbent upon DEQ and RUS to perform a thorough analysis of the impacts of the proposed project, and to meaningfully investigate alternative methods for accomplishing the purposes of the plant. This process should be guided not only by the National Environmental Policy Act (NEPA) and the Montana Environmental Policy Act (MEPA), but also the Montana Constitution -- a document which explicitly recognizes the right to a "clean and healthful environment" and a corresponding duty to "maintain and improve a clean and healthful environment in Montana for present and future generations." (Article II, Section 3 and Article IX, Section 1). C95, C134

Response: The analyses required by NEPA and MEPA must be in compliance with and/or integrate all applicable environmental laws and regulations. NEPA itself includes the Congressional declaration that "… it is the continuing policy of the Federal Government, in cooperation with State and local governments … to use all practical means and measures, including financial and technical assistance, in a

manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans."

60. *In the absence of scrutiny under the Major Facility Siting Act, the duty for performing a robust and independent determination of need for a coal-fired power plant does not go away. Rather, it must instead be carried out in the context of the EIS. C95, C134*

    Response: The RUS is responsible for and will complete such a determination and this is addressed in the EIS.

61. *Due to the unacceptable large threat the Highwood project poses to public health, the natural environment, and the quality of life in Montana, and due to the absence of a need for a facility of this size and also the availability of other cost-effective options that cause far less pollution, MEIC stands in strong opposition to the Highwood Generating Station as currently proposed. MEIC finds the DEIS to be fundamentally flawed in it analysis of need, impacts and alternatives, falling far short of the requirements of NEPA and MEPA. The decision to grant an air quality permit to the plant as currently configured would also contradict both the spirit and letter of Montana's Constitution. Finally, a decision by USDA to provide financing (with federal tax dollars) for a speculative project designed to produce power far in excess of the actual needs of the rural electric cooperative members of SME would violate the boundaries of the Rural Development Program. There is simply too much at stake to allow this faulty project to proceed. C95, C134*

    Response: The DEIS and FEIS adequately address the need, alternatives, and impacts of the proposal. Discussion of alternatives is expanded in the FEIS, in particular, detail has been added to the IGCC option. USDA-RD, in its evaluation and approval of the loan application, has determined that the proposal meets the requirements of its program. In addition, any air quality permit will comply with all standards, and the plant will be required to meet the recent mercury regulations adopted by the Montana Board of Environmental Review.

62. *You're talking about a really clean plant. SME has done a great job with their moving beyond what they really needed to in some instances of the development. The Department of Environmental Quality has done a great job trying to look at everything. EIS, they have to consider the social and economic impacts, as well as the impacts to the environment. They have to look at the global requirements. And they're doing that. C96*

    Response: Thank you for your comment.

63. *It is true Montana has a large deposit of coal, but let the companies that want to use that coal do it in manner that will not pollute our environment. Yes that might cost a lot of money now, but what about the cost of our health and the cost of any future 'clean up' if necessary because of short cuts use today. C100*

Response: Thank you for your comment.

64. *I represent the North Central Montana Building and Construction Trades. And I know what everybody is saying, oh, God, here's the union guy up there, because they want to build a plant. Yeah, we do want to build a plant. We built the Colstrip back in the '70s and '80s. We built a lot of other projects around the country. A lot of them are not as environmentally friendly as what we have in this kind of plant. And that's a good thing, because we're putting on a plant that is better and more technology advanced than what we used to do. We progress. That's what we do as a nation and as a people. C103*

Response: Thank you for your comment.

65. *In the August Issue of* Rural Montana Magazine*, Dave Wheelihan, CEO of the Montana Electric Cooperatives' Association, had an article praising the fact that Congress has initiated a resolution that requires that 25% of the nation's energy needs come from renewable sources by 2025. Currently, most of our power comes from Bonneville Power and it is hydro-power which is renewable. It appears that we are going from almost 100% renewable power to almost 100% non-renewable power from a coal fired generation plant for almost a third of the State's area. It doesn't seem prudent to back pedal to the minimum renewable requirements, when we are currently meeting and exceeding expectations with reliable, renewable power. C104*

Response: 'Energy portfolio' standards have been mandated in several states, including Montana, but not at the national level. A central element of the purpose and need for the Highwood proposal is that a current contract with Bonneville Power will be terminated in part in 2008 with complete termination in 2011. SME will continue to purchase a portion of its power from the Western Area Power Administration, whose supply relies heavily on hydropower. Also, SME will install 6 MW of windpower. Again, this is stated in detail in the DEIS and carried over to the FEIS.

66. *Cost of power to the consumer needs to be the overriding factor considered in the decision to build and operate a new power plant. All costs must be considered including health. C104*

Response: RUS and DEQ do consider health as an important factor in environmental analysis and decision-making, including permitting, and the EIS reflects this.

67. *Where is the information on the environmental impact of the coal mining for this plant? If it proves to be too expensive to ship the coal, are other closer sights an option? Impacts of such places should also be part of this document. C105*

Response: The impacts of coal mining at the specific mines likely to provide coal to the HGS were assessed in earlier EISs conducted by the federal and state governments for those mining operations. These assessments were incorporated by reference in the DEIS and the FEIS.

68. *You've left a huge job, the way the system apparently works, to have citizens to go through this 700 page document and find all of the errors, misinformation, and shortcomings. For those of you that are hired to do this and don't have the other jobs that we have to do this on the fly, I encourage you to look at it in deep detail. C105*

Response: Thank you for your comment.

69. *I have very mixed feelings about the Highwood Station. I am extremely disappointed that SME has opted to depend nearly entirely on a coal- fired plant. C106*

Response: Thank you for your comment.

70. *One thing caught my eye going through it. On the no-action alternative in just about every spot, on the conclusion it would be to the extent that other generation sources may be pre-existing and under the purview of older and less stringent safety and emissions regulations. The no-action alternative could potentially be contributing to greater regional impacts on human health and safety. Now, many people I've seen up here tonight laugh this off with a wave. I know what it is to have hard work being not appreciated. And I want you folks to know that we appreciate everything that you've done with this. And we look forward to building the plant. C107*

Response: Thank you for your comment.

71. *Let the electric city do without coal or gas fired generation. In light of today's knowledge of alternative means of generation and of global warming , let us not add to it in old fashioned ways. Lets help by using clean new technology of solar and wind. We don't need to produce sulfur emitting, CO2 emitting , native prairie digging , railroad fuel burning ,coal fired electricity. Right now Sletten construction Co. is building a 40 acre 6 megawatt solar generating facility in Nevada. coupled with wind power Great Falls could produce more megawatts of clean power. I think the coal facility is a short sighted development. I will fight it. C109*

Response: Thank you for your comment.

72. *I hope that this process of commenting on the DEIS will actually be meaningful. I hope that this ridiculous, ill-conceived, possibly illegal and even dangerous project is not a fait accompli, as it seems. I hope that the will of the people in this country still counts for something. I hope that the "powers that be" are able to be far-sighted enough to do what is right, not what is expedient or what they hope will put money in their pockets to the detriment of this community and indeed of this planet. C111*

Response: Thank you for your comment.

73. *I have lived here for 19 years, and I raised my daughter here. I have set my roots down. I am an avid gardener, and while I am probably not an expert, I enjoy learning and my gardens give me a source of joy, relaxation, beauty, and organic produce. I thought you might enjoy some pictures of what I have going on here. I don't want my gardens polluted by this plant. I want the rains to refresh the nourish my garden, not impair it or render*

my produce I work so hard to raise organically unfit for consumption. I don't want to have to leave Great Falls because this thing is built here. C111

Response: Thank you for your comment.

74. *I love the Great Falls area. And one of the aspects of life here that I love so dearly is the clean area, the clean water, the friendly people, the opportunity to hike and enjoy this wonderful outdoor life that I had denied to me when I lived in the northeast. C112*

Response: Thank you for your comment.

75. *I think we're being very short-sighted in even considering this plant for development here in this region that we love so dearly. Why do we want this here? I don't know if any of our members of our city counsel is here or our mayor is still here. I guess my question is why aren't you protecting us from this. I think it's very clear that those who are speaking in favor of this are those who have an economic interest or those in the industry itself. I have heard no one here really that wasn't in one of those two categories. C112*

The idea of the Highwood Power Plant is a cruel and unusual way of putting our lives and the environment in danger just to generate electricity that can be easily done with safer methods. C187

Response: Thank you for your comments.

76. *Rio Tinto Energy America supports economic development in Montana that promotes a healthy environment and is sustainable for the state and its communities. Southern Montana Electric G&T's efforts are protective of the environment by employing clean and proven coal-fired electrical generating technology to address the forthcoming need to replace the baseload electricity generation that will be lost from BPA in the near future. Southern Montana Electric G&T's efforts are forward thinking, providing replacement power critical to the sustainability of the economies of the state and regional communities, creating new jobs and utilizing local energy resources. C114*

Response: Thank you for your comment.

77. *If I, as an individual homeowner and Great Falls resident, won't be able to utilize any of the electricity from this plant, which I have been told that I won't be able to, because I'm not, quote, big business in Great Falls, how is this going to keep my costs competitive? I don't understand that. C117*

Response: Whether or not an individual homeowner and Great Falls resident will be able to purchase from the proposed facility has not been determined. At this point there is every hope that individual homeowners will be able to purchase from the proposed facility; however, that matter ultimately rests with the Montana State Legislature. At this point the City of Great Falls has a "pilot project" underway to demonstrate to the Montana Public Service Commission (PSC) that it has the ability to meet the needs of residential consumers as efficiently as the existing "Default Supplier." If the pilot project is successful it is hoped the Montana State Legislature

will see it is in the best interest of Great Falls electricity customers to expand the ability of the City of Great Falls to serve a broader segment of the electricity customers in Great Falls.

If the City of Great Falls is allowed to serve a broader segment of the electricity customers, it is believed that by participating in HGS, the cost of providing that service will be no greater and perhaps less over time than those customers are paying under existing conditions. The reason there is a potential for cost parity or even a reduction is that, based on the costs paid by Montana electricity customers over the course of the past several years, "cost based" rates which are enjoyed by the members which SME serves, have been lower than the market based rates paid by the customers of NorthWestern Energy (NWE).

78. *I'm for jobs. I'm a small businessman here in Great Falls…. I'm for good jobs and good wages. After hearing all of the comments and seeing your proposals, I'm afraid I might vote against this thing. I believe there's a better way. Several ways have been proposed. I hope that my vote counts. Does my vote count? C117*

Children are so susceptible and it is unfair to subject them to the fallout from this project. I don't believe they have a vote on it. Do I? C284

Response: Voting is not part of the NEPA/MEPA processes.

79. *What concerns me is the potential for impacts to become significant. I think time is an important element that has to be addressed. People are in a great hurry always to make money. People are in a great hurry to meet needs. People are in a great hurry when they have a project they've worked very hard on and want to do it. And many of the things that are adverse in the environment, or potentially adverse in the environment, take years to develop, take lifetimes to develop, take a long time to develop, and I think that that needs to be remembered when addressing an issue of this magnitude. C118*

Response: The DEIS addresses potential impacts extending over the life of the plant and beyond, described in Section 4.2.1, where "duration" is defined as a criterion.

80. *I'm opposed to this coal-fired plant, and I'm not satisfied with the draft environmental impact statement. I would like to see hard evidence from the tribal elders, the tribal community, the grass roots people who reside in that area of north central Montana. And until they endorse this plant, I will continue to object and express my opinion. C119*

Response: Tribal leaders have no authority regarding approval or permitting of the project but they, like other citizens, have the right to comment on the adequacy of the EIS and mitigation measures.

81. *It's been said that Montana is the last best place. We can see that by the population increase. It's not only Montana, it's the whole northwest United States. In order to accommodate this, there's going to have to be an increase in generation throughout the area, and we can see this by the competition for the cheap power that is available. C120*

We have SME here. We have Montanans looking out for Montanans. They're not out to pillage the land. They're out to provide low cost power to the members. And they're not out for the mighty dollar, like I've heard here tonight by several people. I've worked for a lot of these co-ops, and I can tell you that they are not for profit, and run mostly, by the large part, by conservative farmers and ranchers throughout the State of Montana, and they're just looking out for the best interest of the neighbors. C120

Response: Thank you for your comments.

82. *I am very concerned about the proposed Highwood coal-fired power plant and the thousands of tons of toxic pollutants it would send into the air, endangering the health of all living beings in a far reach around it and adding significantly to global warming, if it were to be approved. C124, C127, C137, C297*

Response: If approved, the air quality permit would limit emissions of air pollutants to levels considered protective of human health and the environment. While CO_2 is not currently regulated, SME has asserted that it is developing mitigation measures that could offset a portion of its CO_2 emissions. Refer to Category Code AIR-603 for additional responses to public comments

83. *We are very concerned about the Highwood Power Plant as it is proposed in the draft EIS. As residents of Great Falls we find no compelling reasons to build this facility. It also seems that some fairly serious omissions from the draft EIS prevent a correctly comprehensive view of the project. Please do not go forward with the plans as they exist in this draft EIS. They are incomplete and irresponsible. There are better ways to provide power, create jobs and generate revenue in this region of Montana without polluting our air, rivers and environment. This is not an either/or proposition and shouldn't be treated as such. C126*

Response: Thank you for your comment.

84. *This letter is written in protest of the proposed Highwood coal plant being built by SME. This letter will surely fall on "deaf ears" since your department seems bent on building this albatross. Our children will wish we hadn't built it and will have to undue our damage. It will be your legacy having your fingerprint on this smoking gun. My conscience will be clear since I am doing all I can do at a citizen level. C127*

Response: Thank you for your comment.

85. *On page ES-10 and throughout the DEIS, the "Lewis and Clark staging historic site" and various other descriptions of the interpretive site on Salem Road are used. SME suggests that the description of the site be consistent throughout the document based on the name of the site on the entry sign as follows: "Portage Staging Area." C128*

Response: This correction has been made in the final EIS.

86. *In Section 4.4.5, under mitigation measures there is a provision that "construction activities in or adjacent to the Missouri River may be limited to times when spawning,*

nesting, or breeding of aquatic and/or wetlands species is not occurring." At this time SME does not agree as a mitigation measure to limit its construction under these parameters since there is no limitation as to types of species, places that activities are taking place, or their duration. SME will comply with all necessary permitting requirements. C128

SME is willing to consider taking certain voluntary mitigation measures regarding the adverse impacts of the project. However, SME reserves the right to agree or disagree with such mitigation measures as part of the final EIS and Record of Decision for the project. The recitation of such mitigation measures in the DEIS does not necessarily indicate SME's agreement to undertake them. C128

Response: Specific mitigation measures are discussed and recommended in the EIS regardless of authority to impose these measures, and requirements for implementing some mitigations, such as those for historic resources, will be negotiated prior to the Record of Decision according to Federal policy. DEQ cannot impose mitigations for which it has no regulatory authority unless a permit or license applicant requests that those mitigations be added to the permit or license. Other permitting agencies may use the final EIS in their decision-making, such as the Army Corps of Engineers in its 404 permitting process, and may impose some or none of the mitigation measures that neither RUS nor DEQ have the authority to require. More detail is being added to the mitigation measures to make them less open-ended.

87. *At the end of the day what we will have is a facility that the State of Montana and Rural Utilities Services can be proud of as exemplary of the ability of the utility to use control technology to maximize its efforts to control pollutions from this facility. C128*

Response: Thank you for your comment.

88. *I just like to let you know that I read about this in the Tribune yesterday or a couple of days ago. I don't remember. But my wife threw the announcement away, and I don't remember where it was when we had it in Havre. So I went to the Havre Daily News. They did not know about this meeting. I called the radio station. They did not know about it. Okay. You are all federal employees, and part of the NEPA process is that you have to post notice of these public meetings and the environmental documents, that's a public meeting. So those meetings weren't posted, okay. C129*

Response: Notice of the public hearing in Havre was posted in locally available media and announced at the Great Falls hearing two weeks before. In addition, a news release was sent to the Havre Daily News.

89. *As a consumer of electrical energy from Fergus Electric Cooperative, Inc., beginning in the latter 1930s, I have watched it operate and know it to be a responsible organization, concerned about its environment and with the welfare of those it serves. Its current board and management are continuing in that direction, and will ultimately be shown to be very responsible in addressing their duties. C130*

Each of us needs to be responsible stewards of our environment. Science no longer argues with whether or not our environment is troubled by excessive emissions. It clearly is. Thus, like other responsible citizens, Southern Montana Electric G&T was compelled to find the best solution it could without simply curtailing and limiting its members' source of electrical energy unreasonably. Like all other human activities, it will have some negative impact; this must be held to a minimum. C130

Response: Thank you for your comment.

90. *My reading of the published DEIS tells me that it is a reasonable, accurate reflection of the facts as they exist. The members of Southern Montana Electric must replace power they are now receiving from Bonneville Power Administration by the year 2011. It cannot do this with hydroelectric power nor with wind power alone. As a result, the most feasible and workable solution to this dilemma appears to be that which Southern Montana Electric has developed, a coal fired generating plant with the most recent and cleanest technology of proven reliability. This, coupled with the wind power being proposed to supplement it, will be cleaner than any other reliable source actually available to the consumers of Southern Montana Electric. C130*

    Response: Thank you for your comment.

91. *We moved to Montana in 1955 because we wanted to hunt and fish and hike. In those days we lived on Flathead Lake, and believe it or not, our pipe that came into the house went straight into Flathead Lake, and it had a screen on it to keep the critters out. We didn't have any treated water at all. This is 50 years later. Doesn't that sound like a fairytale? We have to filter our water. We can't eat the fish because of the mercury. And it's up to the DEQ, to prevent any further degradation of the air and the water by denying the air quality permit and preventing any mercury from entering our air and water. It's time for us to recognize that our human health is more important than money. C132*

    Response: DEQ must respond to air quality permit applications and determine if permit limits, including those on mercury, can be established that are protective of human health and the environment. If so, then DEQ is authorized to issue the permit.

92. *All I know about this situation is there's five co-ops that are trying to take care of the people that own those co-ops. These are nonprofit corporations, if you will. So is SME. And what they're trying to do is they're trying to go back to a base of cost-based power. That's what the rest of us in NorthWestern used to have before deregulation went in. Cost-based power is the cost of the plant is plus a very small amount of maintenance, that's what they give it to their members for. There's no profit. It's what we used to have with NorthWestern. It was what the cost was with NorthWestern, plus some profit, and then it was sold to the rate payers. This is the thing that we have always wanted to have since 1997. This is the thing in Montana that we lost as NorthWestern consumers. This is a bunch of co-ops trying to take care of their people with the lowest cost of energy they can provide. C133*

    Response: Thank you for your comment.

93. *Unfortunately, a number of air quality rules and standards have been changed by industry lobbying so that old plants don't need to be retrofitted or updated, and new plants of the old types of Pulverized Coal (PC) and Circulating Fluidized Bed (CFB) generating facilities are still being planned and built - often with subsidies, low-interest loans, and the active participation of agencies such as the Rural Utilities Services (RUS). C134*

Response: In accordance with the requirements of the Administrative Rules of Montana, an existing emitting unit is not required to retrofit or update existing equipment or emission controls until such time as the affected unit is modified. Modification of the affected unit would subject the unit to current day operating and pollution control standards including, but not limited to, the use of best available control technology (BACT). This ensures that air quality is not significantly degraded from the modification of sources of air pollution and that any modified industrial source will be as clean as possible and that advances in pollution control will occur concurrently with industrial modification. Further, current day circulating fluidized bed (CFB) and/or pulverized coal (PC) boiler technologies are recognized world-wide as state-of-the-art coal combustion technologies for the production of steam and electricity for utility application.

94. *We anticipate that all these agencies and standards will be reformed during the next few years to reflect the full costs of global warming and the health effects of pollutants such as mercury, lead, small particulates, Nitrous Oxide, Sulfur Dioxide, etc. It has become a political imperative, embraced by all parties and not to be denied by a few oil and coal companies which dominate the present Administration. When that happens, those who did not participate in the coal boom, nor invested heavily in these discredited technologies will prosper, while those who've spent decades worth of energy investments in coal plants such as the Highwood Station, will see their investments lost, in whole or in part. C134*

Response: The direction of future regulation and investment in energy technologies is speculative and outside the scope of this EIS.

95. *We, the members of Citizens for Clean Energy and a thousand or more petitioners from this area respectfully request that you deny the permit for the Highwood Generating Station, refuse to fund or otherwise support the SME co-ops group in this plan, and start the whole process over with a public and scientifically reputable study of the future energy needs of this region, with due consideration for the property and legal status of those who already live and work here, and for those who presently supply us with our energy needs. We are also in touch with federal investigators who will carefully examine the business plans and transactions of the various parties involved for evidence of fraud, deceit, or corruption. C134*

It appears that the Schweitzer administration is simply giving lip service to its stated priority of expanding energy development while protecting Montana's precious environment. I actually believed that the Schweitzer administration would be different from the long string of Republican administrations that took pride in being the "lapdogs *of industry." Millions of Americans are waiting for change, for courageous leadership, for responsible leaders with vision and foresight. Our neighbor to the west, the state of Idaho, has taken a big step in the right direction by pledging not to build any new coal-fired facilities. The very least we can do is insist on the very cleanest technology and put forth a genuine effort to expand renewable energy in Montana. This permitting action is a shortsighted, unethical step backward. Please start over and do what is right. C135*

Response: RUS and DEQ have followed their respective NEPA/MEPA processes and procedures. They cannot deny funding and permitting on the basis of public opinion. The EIS was completed using a scientific, interdisciplinary approach.

96. *I find it somewhat ironic that the people in Great Falls are condemning a plant here that would produce energy for some of us co-ops down in eastern and central Montana and suffering the ill-effects from that, when we have been in down wind and supposedly the ill-effects of Colstrip have been affecting us, and they've been using that power here to generate for their homes. C139*

Response: Thank you for your comment.

97. *I was shocked in June when I first heard that Montana was proposing to build an additional coal-fired power plant. It seems that we have not learned from historical data that the addition of mercury and CO2 into the environment is not good for our economy or health over the long term. With today's articles on global warming and mercury accumulation in food supplies, it is interesting that we citizens of Montana would even consider building a new plant without implementing the best pollution controls available. C147*

The Highwood facility is, at best, a seriously misguided attempt to stimulate anything good for the citizens and state of Montana. This day and age, our knowledge and experience tell us that burning coal for electricity has become a very poor choice, given the options. We know better, and should be doing better. C149

Response: A Best Available Control Technology (BACT) analysis was performed as part of the air quality permit application and DEQ determined that the pollution controls being implemented at the proposed HGS do indeed constitute BACT. All reasonable alternatives were analyzed for their viability.

98. *My husband and I bought a house in Great Falls a little over a year ago, and we were attempting to find quality of life here. And I believe we found it. I came from Las Vegas. Before I came here I researched this town, and I found out that it had clean air and clean water. And that's what we were looking for. And the American Lung Association ranked our area fourth highest in their clean air study. I left a highly polluted area. And if this community gets like this, those of us who have moved here for quality of life will be moving out. Because we came here and we brought financial gain to this community. So all of the power that people are concerned about supplying to Montana because of the growth, I don't think they'll have to worry about it anymore. If they screw this place up too.* C150

Geraldine is a small town that would be directly affected by the coal plant and the emissions that it would produce. This town has been in existence since the early 1900s we have seen many things happened and many changes made; we have struggled with water issues and financial issues, and we still have made it to this point. The residents of this town do not need a new threat to struggle with. C316

Response: Thank you for your comments. The aim of the air quality permit is to prevent degradation of air quality in Great Falls and areas downwind, including Geraldine.

PUR-200 PURPOSE AND NEED

1. *Some people questioning the project purpose and need have talked about the HGS electrical service being exported to Wyoming. We do have a few residential customers, irrigation customers in northern Wyoming; but, to my knowledge, we're the only co-op [Beartooth Electric] in SME that even serves across the state line in Wyoming. C7*

   Response: Thank you for your comment.

2. *Those questioning the need for the project comment that SME could not possibly have that kind of growth in our systems. Our systems have been traditionally rural… while the cities may not be growing, everybody is coming out to buy their piece of Montana. And our growth factors, as far as our load, is growing much quicker than the northwestern territory's growing as far as residential load…there's just an awful lot of residential development in our area. C7*

   Response: Chapter 1 of the DEIS discusses these factors that are helping to spur residential growth within the SME service area.

3. *There's a very important need for firm power from a proven technology, and our people rely on it for their lives, for the health of their livestock and for their economic well-being as well. C7, C40*

   SME needs base-load generation to replace power that we have purchased from BPA in the past and will lose in the near future. This is a fact no one can dispute. SME has done the best it can to address this problem. C39

   The issue is affordable, reliable power, a necessary commodity for the people who are going to be relying on this for a source of their power. The fact is that the co-ops start running out of their power two or three years from now. And they're completely out of that power from the Bonneville grid in 2011. C52

   What is Southern Montana Electric G&T? My answer to this question is Southern Montana G&T supplies power to co-ops which represent people from the Geyser area to the Broadus area, from Winifred to the Red Lodge area. These people live on farms, ranches, subdivisions and several small towns. Power is also supplied to the City of Great Falls, military sites, small businesses and several industrial loads. These people need safe, reliable, cost effective power. And the Highwood Generating Station would provide that power. C39

   Our members [of Fergus Electric] need this clean, reliable, affordable power provided to them in the lifestyle we like to enjoy here in Montana. C40

   The agricultural community is our largest load and the bread and butter of the cooperative. In my 20 years of employment with Fergus Electric, I've seen a significant decrease in the number of small farm and ranch operations. The reason for this decrease

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can be attributed to one major factor: The cost of production from increased property taxes, equipment expenses, fuel, fertilizer and other operating costs. The electrical power purchase is also a significant expense for the small operator. C42

We need dependable electricity to pump water to irrigate pinto beans, corn, alfalfa, beef cattle, barley. We've got to have this power 24 hours a day, not just when the wind blows. We've got to have it all the time, in the wintertime, every minute of every day, all year round. C57

We have a real need. We're going to lose our power source in 2011. We're trying to build a power plant that will be environmentally friendly, that will be staffed by Montanans. We would like to have it be provided with Montanan coal, which is our goal. And we think it is helpful for the economy in our area, and it's also helpful for the economy here. C140

Why are we here today? We're not here because we thought we could make a huge amount of profit by building this power plant. We're here because our power is being cut off. And in 2011 we will not receive power from Bonneville Power Administration. So we don't have the luxury of sitting around deciding what to do. We decided that we had to be proactive and work on this issue and get something on line ahead of time. C159

Our engineers and our staff and our managers have been working on this for four years. So it's not a fly-by-night thing that some of the people seem to think. So the farmers and ranchers in this area rely very heavily on pumps and irrigation, and we need reliable, affordable power. C160

The distribution electric cooperatives involved in the proposed Highwood plant project face the necessity of finding additional power resources due to expiring, non-renewable contracts with federal sources. In short, the search for new power generations sources to serve Montana residents is an absolute necessity. C178

I live at Winifred, Montana, and am a member of the Fergus Electric Co-operative at Lewistown, MT. It is my belief that we are in very dire need of future generation at a reasonable rate. I also believe that the Highwood Station will fill that need. C296

This plant will not be built for "build it and they will come" customers. It will be used to satisfy a need among 5 coops and the City of Great Falls. The coops' supply electricity will end in 2010. HGS will provide an uninterrupted cost based supply of electricity in 2011. The City's portion will provide a power source currently provided by another generator. C306

I fully understand the need for a new and consistent generating facility. The aftershock of the State of Montana's decision to deregulate electricity has been devastating not only to consumers, but also to local governments, school districts and businesses large and small. Utility rates have increased 60% in less than six years. C315

Response: Thank you for your comments.

Chapters 1 and 2 of the DEIS discuss the need for a reliable source of base load power for SME's customers.

4. *It has become evident that the proposed plant is NOT about increased power demand in the immediate area but its primary purpose is to export power, i.e. serve as a merchant plant, for the profit of a few stakeholders. C8, C16, C20, C50, C56, C60, C72, C86, C95, C123, C124, C134, C135, C233, C333*

The five co-ops which remain associated with SME are centered around the coal fields and generating plants near Decker and Colstrip, Montana. These co-op members have already suffered from the effects of large-scale coal-fired power plants, and we who live in or near Great Falls object to them attempting to spread this same environmental desecration to our local environment. Very few co-op members in the Great Falls area will use any of this power, and it remains an open question whether or not the City of Great Falls will be able to sell any of their power to local residents, who are presently being supplied by Northwestern Energy as the default provider. The HGS has all the marks of a "merchant plant," which will export half or more of its generating capacity out of state or to Canada, which has a much denser population just north of the border in Alberta and Saskatchewan. C134

Of the 57 average megawatts of SME's energy demand in 2004, 20 aMW came from WAPA (a contract that is in no real jeopardy of expiring), leaving no more than 37 aMW that could have come from BPA that year. So, from an energy standpoint, SME has proposed a 250 aMW solution to a 37 aMW problem. These numbers mean that SME will have to find a market for up to 213 aMW of energy. Even under SME's ambitious growth forecasts reflected in Table 1-2, the utility would still need just 930,617 megawatt-hours (106 aMW) in the year 2018. In other words, more than half of the energy produced by Highwood would have to be disposed of elsewhere. With so much electricity being sold off-system, this plant begins to look more and more like a "merchant" facility and it becomes more and more inappropriate for the plant to receive its primary project financing through the Rural Utility Service. C95, C134

Is it within the mission of the RUS to fund a merchant power plant? C20

Response: A loan application would not be accepted by the RUS if the financial, forecast and technical data indicated a "merchant" facility. SME is forbidden by law as an electrical cooperative from entering the competitive supply market. The load numbers quoted in this comment are significantly at variance with the current and projected load numbers contained in RUS-required studies performed by SME. Those numbers are summarized in chapters 1 and 2 of the DEIS and are repeated in the FEIS.

Use of "average system demand" to address Southern Montana Electric G&T's need for a baseload generation resource is not appropriate. Based on demonstrated

electricity supply market volatility in the region, developing the "capacity" component of a power supply portfolio with the sole intent of covering "average demand" would have dire financial consequences. It would be very risky to accept exposure to the market for the difference between average demand and the actual demand required to meet member needs. It would also be a poor economic decision to build a baseload resource that is only capable of covering the average system demand and then build an additional peaking resource when the cooperative members are experiencing steady and significant load growth. Under this scenario, the power supplier would soon be in a position where it would have to rely on peaking resource (the most expensive source in a supply portfolio) to cover base load requirements. Additionally, the cost to build both types of generation would be substantially higher than the economies of scale of building a single base load facility.

5. *In Section 1.4.4, the projected energy deficit in 2012 is 160MW. So why is a 250MW power plant being proposed? There is no treatment of this discrepancy in the conclusion. Even with the expiration of BPA and WAPA contracts, contracts with other new suppliers could easily accommodate the modest and incremental increases in demand if the energy industry in SE Montana can develop self-sufficiency for their needs. C10, C165*

   The primary justification for this plant is to replace the power that has been supplied by the Bonneville Power Administration to the five member co-ops. The 250 MW output is nearly twice the current peak demand of all the five member co-ops. To sell the excess power generated, the SME has tried to replace NorthWestern Energy as the default supplier to Great Falls. This move (HB 642) has been denied by the Montana State Legislature. If the scale of the plant were reduced to serve the realistic current need and anticipated growth of the five member co-ops, at least a 30% reduction in its environmental impact should be achievable. C12

   It is my opinion that the plant is grossly over sized. The 250 MW of power requested is 2.5 times the amount they have ever used from Bonneville Power. Considering the other facilities similar to this being proposed around the west it becomes apparent that SME is a pawn in the coal companies efforts to get a number of these plants pushed thru now, because in 10 years no facility like this would get off the drafting table. C30, C59, C86

   The DEIS fails to convincingly establish a need for 250 megawatts of coal-fired electricity production, and relies too heavily on information provided by SME. There are two ways to look at need -- one is total energy consumption (the total number of megawatt-hours needed in a year) and the other is peak power demand (the greatest number of megawatts needed on an instantaneous basis, i.e., for short periods of time). Both must be considered, but the DEIS does a poor job of making the distinction clear. Based upon the energy requirements of SME's member co-ops, a plant of this size clearly is not needed. C95, C134, C164

   Even when looking at peak demand, the project still appears grossly oversized. According to information provided to MEIC by SME in June 2006, SME's customers *(including the City of Great Falls and industrial accounts) had an all-time high peak demand of 141 MW in February 2006. This is still only 56% of the 250 MW output of the proposed plant. C95, C134*

This plant is not the answer for the Coops that need the power, for one thing the Coops will use only 1/5 of the power this plant puts out. Why build a plant this size? C292

The 5 Co-ops that are sponsoring the Highwood Generator proposal currently use around 500,000 megawatt-hours to supply their customers. The proposal calls for a plant output of 2 million megawatt-hours. Please be specific in your analysis of how this energy will be used, by whom and what price will these customers be paying for this large amount of excess energy, especially during off-peak hours when everybody else is selling cheap as well. C294

Our investigations lead us to question the need…it will produce four times as much power as the co-ops can sell to their customers. So, Montanans must breathe the consequences of yet another make-a-profit-by-exporting-our-resources scheme. That's not a need…it's a greed. C297

The purpose and need statement is arbitrary and capricious. It does not adequately analyze the economics of the proposed pulverized coal generating system. The assumptions used to justify the purpose and need are not supported by historical data and reasonable projections. The potential users of the power from the plant will not need 250 MW in the foreseeable future and perhaps not at all in the lifetime of the plant. C303

Why do we need another coal fired plant when it created so much pollution and is only ¼ needed & necessary? Just say no! C309

Response: See prior response regarding the load analyses. Information at the beginning of Section 1.4 of the DEIS and FEIS, particularly Table 1-1, illustrates actual and estimated system requirements through 2018. These figures do not include projected requirements for the City of Great Falls. Additional data for 2006 are included in the FEIS to support the estimated requirements. In December 2005, the City of Great Falls (City) retained the services of R.W. Beck, Inc. (RW Beck) to analyze the power needs of the Great Falls metropolitan area. In its analysis RW Beck concluded that the existing load in Great Falls may be well in excess of 100 mW. The City is currently a 25 percent participant in HGS with a corresponding right/obligation to purchase approximately 65 megawatts (MW) of the production of HGS.

The City has been a purchasing member of Southern Montana Electric G&T since October 2004 and it has continued to expand its power supply responsibility from meeting its own needs to include the power supply requirements of a number of local businesses. In addition to meeting the energy needs of traditional municipal functions such as potable water treatment and distribution, street lighting, waste water treatment, and other related city services, the City also serves the hospitals,

schools, international airport, Fed Ex distribution center, Montana Air National Guard, General Mills, Meadow Gold Dairy, and the Montana Refining Company. During the month of July the City had a peak load of 23, 595 kW (24 MW) and sold 11,761,483 kWh. This demand and energy requirement translates to a load factor of approximately 67%. The City has a long history of providing traditional municipal services to the Great Falls community and is well on its way to subscribing its portion of HGS with solid contractual obligations. The terms of these power purchase agreements are in line with the debt service associated with its share of HGS. Based on our understanding of the power supply situation in Great Falls, the City will fully subscribe its rights to HGS.

The demand forecasts and in turn purpose and need for the proposal have been demonstrated and accepted as part of the loan application process.

6. *It stands to reason that the expected overproduction is intended to feed profits to the operators of the HGS facility. Most of the operators are public entities, local governments, co-ops etc., which seem to have an eye on making lots of money. I would question if that is the role of public entities. C10*

   The purpose of SME and all other electric cooperatives is to provide reliable, cost-based electricity to their members. By their nature and incorporation under IRS regulations, cooperatives and the City of Great Falls are non-profit organizations.

7. *The primary justification for this plant is to replace the power that has been supplied by the Bonneville Power Administration to the five member co-ops. The 250 MW output is nearly twice the current peak demand of all the five member co-ops. To sell the excess power generated, the SME has tried to replace NorthWestern Energy as the default supplier to Great Falls. This move (HB 642) has been denied by the Montana State Legislature. If the scale of the plant were reduced to serve the realistic current need and anticipated growth of the five member co-ops, at least a 30% reduction in its environmental impact should be achievable. C12*

   Response: Under Montana state law (MCA 69-8-103), electric cooperatives cannot act as "default electricity suppliers". Only investor-owned utilities, such as NorthWestern Energy, can act as "default suppliers".

8. *The entire premise that SME needs to build a coal plant to prevent "the lights from going out in SE Montana" is untrue. The "Due Diligence" studies required for a loan of this type would uncover the fact that Mr. Ron Harper, CEO of the billion dollar company known as Basin Electric Cooperative, headquartered in North Dakota, has met with S.M.E. and the Governor of Montana and has offered to sell electricity to S.M.E. at longterm and low electric rates. Basin Electric has also offered to build transmission lines to serve southeastern Montana. The R.U.S. should contact Mr. Ron Harper, CEO of Basin Electric, to verify this offer. C14*

Is it the policy of the R.U.S. to loan monies of this magnitude to a rural utility company that is in turmoil and not in full agreement? Will the R.U.S. request a vote of all the S.M.E. members before allowing such considerable indebtedness? Also will the R.U.S. inquire about the plans of Basin Electric to build an I.G.C.C. plant in the very near future? C14

Will the R.U.S. also please contact Mr. Thomas Huntley, C.E.O. of the Central Montana Electric Cooperative (based in Great Falls) which is a composed of nine smaller cooperatives and find out why they feel that the Highwood Coal Plant is a bad idea and a financially risky plan? C14, C54

Response: RUS's evaluation of a prospective borrower's loan application includes review of the financial and organizational stability of the borrower. The RUS does not poll cooperative members or others regarding loan applications. Power supplied from any Basin Electric power generation facility has the issue of no transmission paths to the SME delivery points. Therefore, any low cost power option opportunity must include the development of transmission infrastructure which adds significant costs to this "low cost" option. Any future proposals by other applicants or cooperatives are evaluated if/when a loan application is submitted.

9. *The draft EIS failed to independently assess the real need for this project and the economic risk of becoming overly dependent on a single fossil-fuel based resource. C17, C108, C61, C85, C87, C116, C209, C210, C212, C213, C214, C215, C216, C217, C218, C219, C220, C221, C222, C223, C224, C225, C226, C227, C228, C229, C230, C231, C232, C233, C234, C235, C236, C237, C238, C239, C240, C241, C242, C243, C244, C245, C246, C247, C252, C253, C278, C282, C285, C286, C295, C300, C305, C310, C312, C319, C330, C334*

Response: The purpose and need was fully evaluated and approved prior to undertaking the DEIS. SME's need is based on their impending loss of BPA's power sales. The alternatives evaluated in Chapter 2 of the EIS, and earlier Alternatives Evaluation Study, included more than just coal-fired sources and also examined economic and financial factors.

10. *The City of Great Falls' historical usage is relatively small (5-8 MW); to help justify building the coal plant the City also hopes to provide long term power contracts to area businesses (totaling approx. 65 MW). What business is going to jeopardize its future by signing 20-30 year contract for power at an unknowable cost? It is far from clear that SME will be successful in providing electricity cheaper than the default supplier with its established hydropower and coal plants and with increasingly abundant wind power coming on line. How can SME prevent these businesses from canceling their contracts? Does the City of Great Falls expect the local taxpayers to subsidize rates to commercial establishments? If the customers are not under contract for 20 years or more, how can anyone be sure there will be customers for the electricity? What will happen if the electric needs of these businesses change due to their own ability to generate their own*

power through solar panels, conservation, or use of fuel cells (as just happened in a Billings hospital)? C20

Response: The City of Great Falls, as Electric City Power, has decided to acquire 25 percent ownership of HGS under separate funding agreements. This electricity would be used for military, industrial, and municipal purposes, not by residents, under current plans. The City would thus not be competing with the default supplier. Any further questions need to be addressed to the City of Great Falls and are outside the scope of this EIS.

11. *Is it part of the RUS mission to enable rural cooperatives to get into competition with the default supplier for the electric needs of Great Falls' businesses? C20*

Response: By law, SME cannot be the default supplier to Great Falls. Great Falls independently determined to participate in this proposal as part of their power supply options.

It is important to understand that there is a distinction between the use of RUS funds to develop generation capacity to meet the needs of the rural cooperative member systems of Southern Montana Electric G&T and the funds to be separately secured by the City of Great Falls to meet the supply needs of the select number of customers it serves.

The funds the five rural electric cooperative member systems of Southern Montana Electric G&T are seeking from RUS are for the express purpose of securing a 75 percent ownership position in HGS to meet the power supply requirements of the electric consumers they serve in "rural Montana." RUS is not funding the 25 percent share of HGS allocated to the City of Great Falls.

12. *Despite the claim that SME's electricity will power Montana farms and ranches, their largest potential commercial growth is to increase the profit margins of developers of natural gas and coal bed methane in Northern Wyoming and SE Montana. Coal bed methane developers have not been traditional allies of agriculture….It is far from clear that these potential customers would leave their present electric supplier, whose generation facilities are much closer to the coal source and who will likely be able to offer more competitive rates than SME. C20*

Response: The potential CBM customers cited above are already within the service area of Tongue River and Beartooth Electric Cooperatives. These cooperatives would not be reaching outside of their service area to obtain new customers.

13. *It is not clear where and how the excess "off peak" electrical production will be sold, and SME's current assumptions about price for this excess energy appear overly optimistic. C20*

Response: RUS considers load forecasts based on industry-standard data and methods and other information in evaluating a proposal's purpose and need, and also reviews the applicant's proposed plans for dispatch of off-peak power. RUS does not dictate to prospective borrowers the composition of its customer base.

Southern Montana Electric G&T has a long tradition of having one of the lowest wholesale power rates in the region and the economic underpinnings for the HGS have been detailed in this EIS. For example, the "default supplier" rates the citizens of Great Falls are currently paying are approximately 60 percent greater than SME member system rates for wholesale power. The economic implications of "off peak" capacity have been considered and are conservative estimates of the ability to dispatch the "off peak" capacity of HGS in the current (and projected) wholesale power supply market.

The average market price for all short-term purchases at the Mid C in 2005 was approximately $58.10 per MWh. The forecasted cost of power at the Mid C and the estimated price that NorthWestern Energy would charge as the "default supplier" at the time HGS begins commercial operation are expected to be greater than the "all inclusive" estimated cost of production for HGS. SME is able to enter into contracts with regional power supply entities that are willing and able to enter into agreements for reserve capacity sharing, "off peak" sales, and the traditional arrangements necessary to ensure supply reliability.

14. *What happens in the scenario that construction begins but cannot be completed due to cost overruns? Is the RUS prepared to add millions of dollars more to finish this project? While the country has seen dramatic increases in labor and transportation costs and the cost of borrowing capital has risen significantly, the $515 million price tag for the coal plant construction has remained (unrealistically) stagnant for more than a year (the initial 2004 cost projection was $470 million). C20*

Response: RUS loan applications consider cost indexing due to the extended nature of a proposal's submittal and overall review.

The use of contingencies in estimating the cost of the project is standard. These contingencies are reviewed with RUS in the application for a loan. If appropriate, periodically in the course of project development the project cost is reviewed. Should there be increases in the project cost, the borrower must provide the additional financial information for RUS review. Therefore, any project cost increases and their financial impacts are known prior to loan approval by RUS.

15. *Furthermore, this coal plant appears to solve a nonexistent problem. Montana is already a net exporter of electricity. C20, C151*

What we're doing with electricity is shipping it out across the United States. How come we're doing that when we need it? C26

Response: The demand forecasts and in turn purpose and need for the proposal have been demonstrated and accepted as part of the loan application process. SME plans to use the majority of its power generation to service its own customers, based on its purpose and need studies.

Marketing of electricity across major regional grids has been common for some time and continues to increase with increased demand (see also sidebar on p. 1-15 of the FEIS). However, HGS is intended as a baseload facility, meant to serve SME's consumers and select customers in the City of Great Falls.

16. *The lights are not going to go out in SE Montana if this coal plant is not built. We have been assured that the Central Montana Electric Power Cooperative would reintegrate SME's customer base, should this coal plant be abandoned. C20, C151*

    If the citizens of Great Falls and of southeastern Montana really, really needed this plant, it still should not be built as planned. If it must be coal, it would be imperative for IGCC technology to be considered. But the fact is that we do not need this plant. SME does not need it; there is plenty of power to go around in eastern Montana, but SME split from the other co-ops over this coal plant question. That makes this a false emergency. SME's customers can again be served by the same suppliers that will be serving the other co-op, and probably at lesser rates. C111, C125, C126

    Response: Thank you for your comments, which are in general outside the scope of the EIS. With respect to IGCC, see the separate responses elsewhere in this document (Category Code ALT-305). SME's decision to build HGS stems from its inability to secure a cost-effective alternative to market based power supply options.

17. *The City of Great Falls has been supplying affordable electrical energy to the Great Falls community for about three years. And now serves about a 20-megawatt load. In 2003 Northwestern Energy unilaterally cancelled a five-year supply contract with the City of Great Falls and other communities and school districts. This cancellation cost the City of Great Falls approximately a million dollars. At that point securing a reliable, affordable supply of electricity became an important priority of the Great Falls City Commission, and they established the city's municipal supply utility to address that issue. C21, C34*

    In 2004 the City of Great Falls became a licensed supplier of electricity by the Montana Public Service Commission, and has continued growing its large customer base ever since. The city anticipates it will have contracts to supply over 65 megawatts by the end of this year. C21, C34

    The continued growth, economic development, and prosperity of Great Falls and its residents requires the availability of secure, reliable, and economic supplies of electricity at stable, economical and cost base rates for all residential, commercial, industrial and other electric customers in the city. C21, C34

The R.W. Beck study commissioned by the City estimates the total electric energy load inside the city limits. This study was conducted by professional engineers and finds that the total demand within the City that could potentially be served by Electric City Power to be about 100MW. C34

Response: Thank you for this additional information.

18. *We believe that Section 1.4 of the DEIS substantiates the purpose and need of SME's cooperative member systems and of the City of Great Falls and provides a conservative estimate of the total demand for SME as it works to secure a long-term, stable, and clean source of electricity for its current and future needs. C34*

    Response: Thank you for your comment.

19. *The impending loss of access to electricity purchases from Basin and Bonneville Power Association will require Southern Montana Electric to look at other sources for the purchase of electricity for its members. Due to our rural location and the lack of adequate transmission facilities to transport the electricity to our service territory, our members will see an increase cost for the purchase of electricity. Many of the small farming and ranching operations that we serve cannot afford another increase in expenses. They will be forced out of business. C42*

    The construction of a member-owned electrical generating facility utilizing Montana people, Montana coal, producing power for Montanans at an affordable price will allow future generations to continue with the agricultural life that is the basis for Montana's economy. We can ill afford to add any further increases and expenses for our agricultural community. I urge you to consider the impacts to our agricultural community, and support the approval and construction of the Highwood generating station. C42

    Response: Thank you for your comments.

20. *What is the basis of the City of Great Falls load requirement by 2011 and how is that even possible considering most residents already and most likely remain Northwest Energy customers unless the legislature – and unlikely – would let ECP be the 'default' supplier? C80*

    Response: The RW Beck study projected that the total electric energy load inside the city limits could be about 100 MW. However, ECP is not and, under the current Montana law, cannot be the default supplier for residential costumers.

21. *We at Yellowstone Electric Cooperative realize that the only viable option is generating our own power. Montana owned generation serving Montanans. We have at Yellowstone realize that using CFB technology using BACT is the only viable option. And that is IGCC is not financeable. C89*

Response: Thank you for your comment.

22. *At the most basic level, the underlying strategy of meeting peak demand with a baseload generating facility is both unusual and unwise. Coal-fired power plants such as Highwood are designed to run at a constant level near their full capacity. Meeting peak load with a baseload generator puts the utility in the situation of having to sell excess power during all but a few hours each year. A better approach is to use a mix of resources, both baseload and peaking, in order to efficiently respond to variations in load, minimize market transactions, and avoid producing so much excess electricity. Peaking plants, such as some natural gas-fired units and even IGCC plants, are highly dispatchable -- that is, they can "ramp up" and then back down again quickly and efficiently to track the actual load. The DEIS is deficient in having failed to analyze a portfolio of resources, and having failed to independently analyze the economic consequences to SME's customers of the utility continually being "long" in the market. C95, C105, C125, C126, C134*

Response: The load forecasts and the purpose and need for the proposal have demonstrated the requirement for baseload generation along with other power supply resources. The proposed baseload generating facility has the ability to operate at minimum output and can ramp up or down from that minimum level, but at slower rates than peaking plants. Responses to Comment #4 and #13 also address the concerns raised in this comment.

23. *It is unfortunate, given these facts about the Great Falls customer base, that the Highwood developers persist in suggesting the plant will serve 120,000 Montanans. In reality, SME serves only about 65,000 people, but the number is often incorrectly inflated to include the 57,000 residents of Great Falls. (See Endnote #31) Electric City Power does not currently have an authorized pilot program to serve large blocks of residential accounts. Even if it does eventually get authorization from the PSC, customers are unlikely to switch due to the deregulation experience. The DEIS adopts this larger figure without question or qualification (including it on the very first of its 725 pages). C95, C134*

Response: The estimated number of current SME customers is about 69,500. The 120,000 figure represents the potential number of customers that could be served by HGS if the City of Great Falls were to receive legislative authority to supply service to its residents. The FEIS has been modified to reflect this distinction.

24. *SME's service area including portions of 21 Montana counties. According to the U.S. Census Bureau, the combined population of these counties is expected to grow at an average annual rate of only 0.6% for the period 2000-2020. (See Endnote #32) And according to the DEIS, "The average amount of electricity used per residential customer is expected to remain relatively constant to increasing slightly over the course of the next 20 years" (page 1-10). So the disparity cannot be explained away by an expected increase in per capita energy usage. C95, C134*

Response: Methodologies used in U.S. Census Bureau projections and electrical utility load projections may differ. Furthermore, Census Bureau projections, based on a range of reasonable assumptions about fertility, mortality, and migration, can frequently over or understate actual population growth. In July 2006, SME's actual peak demand was 141 MW, approximately 60 percent of the HGS's proposed capacity of 250 MW. Actual peaks observed to date are running above those forecasted by SME 2-3 years ago.

25. *Supposing (as seems reasonable) that SME's growth falls short of its projections, large amounts of electricity would have to be sold "off system" and during "off peak" times when it has less value. SME is assuming it would be paid 85% of the on-peak value for this electricity ("Option 1" page 1-18). Considering that other Montana utilities would be experiencing "off peak" hours at the same time, and that Montana has limited transmission capacity to reach out-of-state markets (page 1-14 acknowledges the "ever-increasing transmission constraints" in the WSCC), this might prove a dangerous assumption. Any such miscalculation could seriously affect the plant's economics. C95, C134*

Response: RUS constantly evaluates the feasibility of the proposal during the loan application process. The prospective borrower's load and off-system sales are reviewed as part of determining the financial validity of the proposal during the loan application process. Responses to Comments #4 and #13 address the concerns raised in this comment. SME has indicated that it intends to have contracts in place which will support the sale of power irrespective of the off peak hours experienced by other utilities.

26. *If 250 Megawatts is even a need, who are those customers? They deserve a right to know what ALL the options for cheaper power could be including renewable packages, and to have input on more options than just the build or no build of this CFB plant. With the present three options how are the customers going to have the full picture of information to make the decision on whether it is in their ultimate interest to buy power from this organization? If the potential customers are residents and potential new home owners, they deserve to know the present day home options for energy independence with renewables and present day technology. C105*

Consider that this coal plant is many times larger than it needs to be. Where are the customers? C77

Response: If there are new residential customers, they would be purchasing their power from the default supplier. If they are within the SME service area, they would purchase from an SME cooperative; if they are within the City of Great Falls, they would purchase electricity from Northwestern, the default supplier. The difference between the current usage and the proposed 250 MW capacity of the HGS represents projected load growth of SME's customers.

As of July 2006, peak load had already reached approximately 60 percent of the projected 250 MW peak load in 2018. Thus, customers appear to be emerging at a rate at least equal to the forecasted growth.

27. *The people in southern Montana have certain needs. The people in northern Montana, who will be downwind, have needs. And we have to address the needs, not only of all of us today and our needs for power in our 4500 square foot houses and other things that we think are part of our lifestyle, those needs are important, but we have to think ahead to further needs. What I would like to have you consider is that there are people of national importance, not just the national parks, but national peoples, first peoples who live to the north of that generating plant, and that needs to be considered too. There's the Fort Belknap Reservation. There's the Rocky Boy Reservation. There's the Blackfeet Reservation. People live in these places. How about the rest of the people who live in Havre? It has to be considered. C118*

Response: The air quality affecting downwind residents was considered in both the air quality permit analysis and the DEIS.

28. *Page 1-8, run-over paragraph, second line. Reference is made to the 2004 R.W. Beck Study. This study should be added to the appendix to the EIS. The City of Great Falls has provided further comments on their load and load forecast under separate cover. C128*

Response: The R.W. Beck study has been placed on the agency websites for access and information.

29. *Page 1-11, third paragraph, sixth line. The sentence starting "Fergus Electric has received a deposit …….by the end of the first quarter 2005" should be updated to reflect that Fergus is currently serving two pumping stations. C128*

Response: The FEIS has been updated to reflect this more current information.

30. *I live right down in the middle of coal bed methane area. And if there was a co-op that was going to serve CBM in Wyoming, it would be Tongue River Electric, and we are not going to. Energy Corp out of Helena will be serving all of that load in Wyoming. In fact, they are serving some of the loads in Montana. So the statement that this was all going to go to Wyoming for CBM development is false. It will not. C139*

Response: Thank you for this information.

31. *When Bonneville power opened up its system for power contracts in eastern Montana, one of the distribution co-ops that I worked with was the first one through the door and acquired a wholesale power contract that extended out to 2020. It starts wrapping down in 2017. The organization that the five distribution co-ops that now consist of Southern, SME, were second through the door. And their wholesale power contract, as been explained many times, starts wrapping down very shortly. C143*

The first co-op that acquired a wholesale power contract with BPA had an allocation for monthly quantity of power, and one month they exceeded that allocation. And for eight days Bonneville went out on the open market and purchased power to fill the requirements set forth in the contract. And those eight days, the co-op paid ten times more than its contracted amount. The amount that they paid rather than $27 a megawatt went up to $270 per megawatt. So it cost them half a million dollars for its requirements for a very short period of time. C143

The five co-ops comprising SME cannot afford obviously to be exposed to the undulations to the open market and have very diligently sought solutions to that circumstance. Those four or five co-ops are to be congratulated for their efforts to take care of the needs of the 120,000 Montanans. And it's a fabulous and very well thought out enterprise. C143

Response: Thank you for your comments.

32. *It's time to "just say no." Despite all the efforts thus far in the DEIS, there is no well-substantiated "need" for that much power production, and there is certainly no justification for a facility that consumes so much water and produces so much harmful pollution! C149*

    Response: The agencies cannot "just say no" to evaluation of a proposed project but must, by law, proceed through their NEPA/MEPA and permit application review processes. The benefit, purpose and need for the project are disclosed in Chapter 1 of the EIS.

33. *I'm the general manager of Yellowstone Valley Electric Co-op. Our cooperative is the second largest electric cooperative in Montana. We're an owner participant in this project, the coal-fired plant project. We are significantly a growing cooperative. We're growing at about four percent a year. Our demand was 35 megawatts. Now we're at 53 megawatts. We cannot have a plant that relies on capacity issues that are based on average load needs. We need a plant that is based on the actual capacities when we need it. It does not make any sense to build a power plant that only serves 60 to 70 percent of your needs on the market and find replacement power. You need to have a power plant that supplies power when needed. Yes, there will be surplus sales. Every utility that has a coal-fired power plant, base-load generation plant, hydro plant, anything that is base-load generation plant will have surplus sales that they'll have to sell off- peak. That only makes economic sense. C157*

    Response: Thank you for your comment.

ALT-300 ALTERNATIVES

1. *The Great Falls area is fortunate in having a number of attractive energy alternatives. Hydroelectric power has been known to locals as a generally acceptable source of energy. In addition we are blessed with reliable sunshine throughout the year. Therefore, solar energy is available. We have a good bit of wind. Why not put some of our most abundant resources to good use? C1, C4, C8, C26, C82, C87, C88, C106, C126, C135, C169, C186, C194, C263, C264, C311, C328*

   Even in oil-rich Texas, Austin favors solar and wind power and conservation over fossil fuels….Austin's economy is booming, and because people value our clan environment we have been able to attract many nonpolluting entrepreneurial businesses. With its beautiful setting, clean air, numerous recreational opportunities and educated populace, Great Falls is well positioned to do the same. C265

   There are other cleaner alternatives available, please take the time to research them before making a final decision. C301, C302, C308

   I am continually frustrated by our government's meager investments in solar and wind power alternatives. C313

   Why not consider wind generation as an alternative? C315

   There are other more efficient and less polluting ways of generating electricity. Already wind power is being developed. Solar is a largely ignored resource, one which has the lest cost once installed, and with its proper development instead of suppression by those interested in culling every dime from out-moded sources, i.e. fossil fuels, the cost would be much further reduced. C325

   I am absolutely sure that there are other more positive solutions to address [energy problems] that will not pollute the environment. C329, C333

   Please support the conservation and renewable energy industry. Use the vision that you must possess and look to our future generations. C335

   We are adopting a 19th century solution to the 21st century global crisis. If we are to survive on this planet, <u>fossil fuel consumption</u> must end. Montana could lead the way in wind & solar energy, & our country – our state – needs clean water, skies, breathable air and unpolluted food sources far more than one more old, dirty, already out-moded fossil fuel plant. C336

   Response: Each of the potential energy resources cited here was evaluated in Chapter 2 of the DEIS. The proposed project does include 6 MW of wind power.

2. *The DEIS does not adequately address alternatives to a CFB. The DEIS gives short shift to legitimate alternatives to the CFB plant, and I'm disappointed in the powers that be*

from presenting a CFB plant as the plant to be, justifying backwards instead of exploring viable options in an open forum. C9, C25, C45, C81, C164, C317

The DEIS offers no specific support to demonstrate its conclusion that all of these alternatives dismissed qualify to be eliminated; therefore, SME's conclusion is speculative and open to challenge. Before the proposed CFB plant is approved, convincing justification needs to be provided for the elimination of each of the alternatives listed. C8

The Draft EIS is deficient because it eliminates from detailed consideration many of the alternatives that are available to replace the proposed CFB plant. These alternatives, which are listed in pages ES-3 and ES-4, should have been included in the detailed EIS analysis. For all practical purposes, the EIS is little more than a comparison of the proposed CFB plant to no action. C23, C58

The range of alternatives considered in the DEIS as currently drafted is inadequate for the federal deciders to issue a ROD which would not be "arbitrary and capricious." C78, C303

The DEIS is also deficient in its alternatives analysis, selecting an extremely narrow range of options for serious study. The DEIS unfairly discriminates against both renewable energy and energy efficiency in a number of different ways. First, the document starts with the false assumption that 250 MW of baseload capacity is needed. Second, the DEIS fails to consider the full range of costs and risks associated with the proposed plant. Third, it stacks the deck against wind by using incorrect and outdated information, and contains no utility-specific analysis of efficiency potential (such as the size and cost of the conservation resource). And fourth, it evaluates each alternative according to its ability to meet the alleged "need" entirely on its own, in isolation of all other resources, thereby setting each of them up for failure. C95, C134

One of our main objections to this project is that SME summarily dismissed many much better and more economically sound alternatives to this particular plant, even before this project was unveiled to the public. C111

There are alternatives to the HGS – please consider them. C46, C63, C164, C204, C283, C304

It is immoral in my opinion to propose really another coal-fired power plant in light of the critical need to curb our contributions to the greenhouse gases now and especially when other better alternatives, including renewable options currently in existence and are not even being examined. C77, C80

I have many questions as to why this type of plant is being proposed that will not truly benefit our economy, energy development, health, environment and national heritage. There are sound alternatives – if more thoroughly examined – that would prove feasible *economically and provide Montana and America with a cleaner and affordable energy solution. C80*

I believe the DEIS is fatally flawed by its failure to analyze a reasonable range of alternatives. As written, the DEIS explores only two choices, a no action alternative – characterized as a return to the Stone Age – or the construction of the Highwood plant. The DEIS devotes more time to discussing where to site the plant than whether it should be constructed at all. The failure to include alternatives that meet the purpose and need without using coal, such as a combination of energy sources eliminated from consideration altogether, is a blatant violation of NEPA. C166

Now is the time for such minds to be delving into renewable sources of energy, using their gifts to help humanity into the future, not bury us in past mistakes. The backers of this project have dismissed any notion that any other sources of energy are as viable as what they offer, including IGCC technology, without adequate justification for their dismissal. C250

Scientific technology exists to limit mercury and sulfur emissions greater than the current proposal from SME. It defies reason and common sense to build a facility that is less than the best we can do, given the fragile complexion of our planet….To allow this project to be built as it has been proposed is short-sighted, and it is a crime against the citizens of Montana. This coal-fired power plant can be built using technology that allows reliable power and at the same time restricts outrageous pollution of our precious planet. C261

Newer technology is available for more efficient operation and greater reduction of pollutants. C288, C305

Hopefully you will all look very carefully at all the pros and cons of this plant and realize that there are some very good alternative sources that would not endanger our lives. C316

Response: In the DEIS, DEQ and RUS independently analyzed the viability of each alternative in SME's Alternative Evaluation Study submitted to and approved by RUS. In the DEIS, DEQ and RUS added an additional alternative – oil-fired power plants – and the FEIS includes still one more alternative – nuclear power. The DEIS also addressed a number of alternative project components. As a result of RUS and DEQ review, the rationale for elimination of alternatives has been expanded in the FEIS.

3. *A preponderance of evidence establishes IGCC as a superior coal technology; therefore, CFB does not meet the "Best Available Coal Technology (BACT)" test. Thus, appropriate energy production alternatives to the proposed SME-HGS project are to be found either in an IGCC coal plant or in the growing alternative energy market. C8, C124*

P-0019704

Why are you choosing an antiquated, outdated method for your electrical generation when it's cleaner, more healthful and a much better way with IGCC and wind. C48

To address these issues we urge Montana's leaders and utilities to encourage more renewable energy including geothermal power plants and to cease encouraging or approving new coal plant construction in Montana unless the plants employ IGCC technology. At a time when the ministry of energy in Ontario, Canada's most populous province, already has phased out one of the province's five large coal-fired plants with the rest to be closed by early 2009, it does not make sense for Montana to build new coal-fired plants utilizing relatively old technology. C73

The coal plant is not needed. Wind power firmed up by hydro is a much better solution for Great Falls. Wind becomes more viable if regulations related to the flow of electricity on the grid should not favor industry but should allow for real pooling of wind power. If, in spite of better choices, a coal plant will be built, it should use the state-of-the-art IGCC technology. Circulating Fluidized Bed technology is not new or best available technology; it has been around for twenty years. C78

When comparing the environmental impacts of Highwood to those associated with truly clean alternatives like wind, solar, or hydro, there is simply no contest. Even natural gas-fired power plants (such as the 260 MW Montana First Megawatts plant that was proposed for Great Falls back in 2001) release substantially less pollution. Integrated gasification combined cycle (IGCC) is a coal-based technology with much greater operating efficiency than CFB and much lower emissions. IGCC also has lower water requirements, produces less waste, and is capable of capturing carbon dioxide for potential storage. C95, C134

Responsible portfolio planning produces an optimal and diverse mix of resources that complement one another to minimize price, risk, and impact to the natural environment. No one resource should be relied upon to the exclusion of all others. Starting with the real needs of the five co-ops, SME could easily have constructed a balanced, clean energy package that would better protect both its customers and the environment. Instead, the only options the DEIS studied in detail were the Highwood project built in one location, the Highwood project built in another location, and the "no action" alternative. Appropriately-sized and cleaner alternatives should have been carefully studied, including IGCC. Note that Xcel Energy in Colorado recently announced its intention to construct an IGCC facility that would be lower cost for a larger unit with much less pollution. It is unreasonable to continue to suggest that IGCC is not a commercially-available, cost-effective alternative. C95, C134

I object to adding more mercury and carbon dioxide to our environment WHEN OTHER TECHNOLOGIES ARE OR SOON WILL BE AVAILABLE. This is irresponsible and unnecessary. C45, C264, C284

Why have our regulatory agencies not held to the top-of-the-line on the use of the cleanest technologies? The answer seems to be that the law sets minimum standards that *allow dirty, polluting coal burning electrical generating plants. The answer seems to be it will cost more. Well, the cost of the plant will be miniscule to the cost of losses due to the impact of particulate matter and polluting matter on people, soil, water, and air. Why does government insist on the lowest common denominator when it is people's quality of life? C168*

If we are going to use our coal to generate electricity, then it should be used with good conscience and the most modern technology. Do no lock us into a 20 year old antiquated CFB system when IGCC is clearly the preferable alternative. C262

Response: The HGS would be a 'new source' under DEQ regulations for prevention of significant deterioration of air quality (PSD), and therefore as part of its required air quality permits, would be subject to a best available control technology (BACT) analysis. Meeting the requirements for BACT may involve a combination of different measures, including coal combustion technologies and emissions control equipment. The BACT analysis evaluates the effectiveness of pollution control technologies, considering energy, environmental, and economic factors. In the case of the HGS, it was determined that the BACT requirement would be met by CFB combustion in combination with state-of-the-art emissions control technologies. State and federal regulatory agencies cannot dictate the types of combustion technologies for power plants if a proposal can meet state and federal standards. Specifically regarding IGCC technology, the discussion of why IGCC was deemed not feasible as a combustion technology for the HGS has been expanded in Section 2.1.5.4 of the FEIS.

4. *The EIS failed to properly analyze cleaner or renewable alternatives working in combination. C17, C51, C59, C61, C80, C85, C106, C108, C113, C116, C121, C123, C124, C125, C135, C166, C209, C210, C212, C213, C214, C215, C216, C217, C218, C219, C220, C221, C222, C223, C224, C225, C226, C227, C228, C229, C230, C231, C232, C233, C234, C235, C236, C237, C238, C239, C240, C241, C242, C243, C244, C245, C246, C247, C252, C253, C278, C282, C285, C286, C295, C300, C310, C319, C330, C334*

   The DEIS is also deficient in its alternatives analysis, selecting an extremely narrow range of options for serious study. The DEIS unfairly discriminates against both renewable energy and energy efficiency in a number of different ways. First, the document starts with the false assumption that 250 MW of baseload capacity is needed. Second, the DEIS fails to consider the full range of costs and risks associated with the proposed plant. Third, it stacks the deck against wind by using incorrect and outdated information, and contains no utility-specific analysis of efficiency potential (such as the size and cost of the conservation resource). And fourth, it evaluates each alternative according to its ability to meet the alleged "need" entirely on its own, in isolation of all other resources, thereby setting each of them up for failure. C95, C134

   A combination of wind power and cleaner energy technologies could efficiently meet the needs of Great Falls and the rest of Montana without sacrificing our clean air and other *environmental values. However, the DEIS seems to dismiss these alternatives for mostly value or poorly-supported reasons. Upon closer look, the alliance of business people, investors, contractors, utility representatives and city/county/ bureaucrats promoting this power plant raises serious questions of conflict of interest and cast suspicion on the objectivity of statements in the DEIS. Feasible alternatives to the proposed HGS are not fully considered or fairly analyzed. C334*

Response: Purpose and need are addressed in PUR-200 in these responses and in Chapter 1 of the FEIS. The FEIS now includes discussion of two combination alternatives. In the first, SME's baseload would be met with a smaller coal-fired facility supplemented by a range of renewable technologies. The second alternative would consist entirely of renewable and/or low-emission non-renewable technologies.

5. *As far as I'm concerned a nuclear alternative should be considered as well given the attempt by the applicant to downplay any viable alternatives except a conventional coal burning and obsolete technology. C25, C64*

   Response: The FEIS includes an evaluation of nuclear power in Chapter 2.

6. *As a lifelong Montanan I get fed up with every time we try to move forward with a project, a few people come out and try to stop it. You don't want a nuclear power plant, and clean, efficient hydro would be totally out of the question. Natural gas is not going to work with current energy costs. So unless you have an alternative to the work, please step aside and let the future pass you by. C31*

   Response: Thank you for your comment.

7. *Alternative sources of power generation, such as wind, solar, nuclear, and other emerging technologies involve increased cost in construction and generation. These costs are passed along to the members in electrical purchases. C42*

   Response: Thank you for your comment.

8. *Montana coal may be inexpensive but new sources of methane (much lower greenhouse-gas emissions) are likely to become available in future - including huge amounts of clathrate (methane-ice) stored offshore on the continental slopes. C64*

   Response: While there are a number of promising, futuristic energy sources on the horizon, such as clathrate, these are incapable of meeting SME's need for power in the next few years. Their feasibility may – or may not – improve in the coming years and decades.

9. *Developing our renewable energy sources is a better idea than building a coal-fired plant. Not only will this help mitigate the effects of global warming, but renewable energy also has the opportunity to spread rural economic development. The job*

possibilities throughout the state could be huge instead of adding all the new jobs in the Great Falls area. C104

Response: Thank you for your comment. Renewable energy programs in the state would indeed contribute to rural economic development including job creation.

10. *The state has said that it will only consider the alternatives that the proponents of the plant propose as being economically viable, that they will not question the proponents determination of economic viability of their proposal and that they have no authority to use the MEPA process to prevent the plant being built. Given that as a backdrop and the fact that the state is applying federal standards, how could the DEQ possibly be doing an adequate job to protecting Montana's pristine environment? The people in the Midwest are a- coughing and a-wheezing from coal plant emissions; why should we allow the same for the citizens of Great Falls? C78*

    Response: RUS, not the state, did examine the economic viability of the proposed HGS through its evaluation of the loan application and determined it to be viable. The NEPA/MEPA processes are part of the overall decision-making process on the proposal; in and of themselves, they do not constitute the decision. Neither agency can dictate the initial choice of combustion technology to the project proponent, though they can specify certain pollution control technologies needed to meet permit limits designed to safeguard air quality. DEQ's evaluation of alternatives, pursuant to MEPA is not restricted to alternatives proposed by the project proponent, and the EIS includes evaluation of the alternatives DEQ and RUS found to be reasonable.

11. *Why doesn't SME – whose co-ops are in farm country – exploit the opportunity to help promote the 'Rural Renaissance' and use the seeds, grains, crop residue and waste products typically produced in farm and ranch country, and start small at local levels to complement wind turbines, to help reduce load needs in their service area? C80*

    Response: Simultaneously, RUS is indeed promoting and funding renewable energy in the nation's rural areas, but SME and its member cooperatives are not directly involved in these initiatives. In addition, these technologies have been evaluated and discussed in the alternative evaluation process and found to be inappropriate to satisfy the energy demands of their member cooperative systems.

12. *At some point there's got to be some realistic evaluation of where we're going to get our energy. As far as that goes, as far as biomass, all these particulars about fuels, all these things they talked about, we should be moving in that direction, for our own sake, and depend less on other countries that really do not want to see us survive. And that's crazy for us to continue that. But it's going to take time, and it will not replace all of the things that we will need electricity for. C96*

    Response: Thank you for your comment.

13. *The most exciting thing to me about the proposed plant is that it's not a nuclear plant. And I'm very happy about that. C110*

    Response: Thank you for your comment.

14. *The alternatives reviewed in the DEIS appear to be an exhaustive list to which no other reasonable, sensible and workable alternatives can be added. All of us can dream up 'pie in the sky' possibilities, but they must work or they accomplish nothing. When even the use of* bottled water *was considered and rejected, one knows that the search for alternatives was thoroughgoing and complete. Only someone intent upon delaying and impeding this project would ask for a deeper investigation. Study must end when it serves no further purpose. C130*

    Response: Thank you for your comment.

15. *There was mention earlier of the old technology of the CFB. I'm confused because I understand that IGCC has been around for quite some time, longer than CFB. So I don't know, not being an expert on it, but I do believe that that would be misinformation. C148*

    Response: Thank you for your comment.

16. *I am a Great Falls native, and I am for acceptable energy. I'm not for traditional or alternative. I'm for adverse-free energy. And that's what we can have, and that's what we must have. It seems like Montana has become the last best place to voice failing antiquated technologies that won't fly elsewhere. And this is yet another shining example. C151, C153*

    Response: Thank you for your comment. All energy sources have costs – social, environmental, and economic – associated with them.

17. *What we need to do is use proven technology, and the technology that is proposed in Highwood station is proven technology. It uses some of our natural resources that are abundant in Montana right now. Renewables in Montana have their place, but they will not supply the needs that our state needs. They will only supply a small portion of what we need in the future. Base-load generation is what this state needs. It needs to be owned by Montanans and used by Montanans. C158*

    Response: Thank you for your comment.

18. *Overall the draft covers too much unnecessary information. Enough fluff like cultural, retail etc to discourage reading to the scary stuff. The draft should have gone into greater depth to address options like a smaller 100 MW IGCC plant to complement a serious wind farm. Other options could be replacing a dirtier existing coal plant. Building closer to either the source of the coal and or power needs. It seems like Great Falls was picked for its hungrier need for jobs and tax revenue or were they thinking a less informed populace? Is Great Falls headed to be the next Butte to sacrifice the*

environment for the sake of dollars? This plant is not simply a local issue. It will effect the world's environmental health. America is only 6% of the population but creating 30% of the pollution. Our arrogance is creating "blowback". Turning us into truly "Ugly Americans" who are becoming less well liked on the world stage. C127

Response: NEPA, MEPA, and other federal statutes require the agencies to address issues of concern, including cultural resources, which, in the case of the Salem site, are of particular concern due to the presence of the Lewis & Clark Expedition-related Great Falls Portage National Historic Landmark. The FEIS evaluates a smaller coal-fired power plant and includes a more in-depth discussion of the IGCC alternative. Alternative that include a larger wind farm in conjunction with a smaller coal-fired plant or with other renewable energy sources are also evaluated in Chapter 2. The Great Falls area was selected because it best met the site-selection criteria. The EIS does address climate change but addressing per-capita energy usage and greenhouse gas emissions nation by nation is beyond the scope of this EIS.

19. *Hydrogen is a fuel which burns much cleaner than and produces nothing that could be considered toxic to the environment nor the human body. Hydrogen also produces greater energy output than coal. C205*

Response: Hydrogen (H_2) is more an "energy carrier," like a battery, than a source of energy. Unlike the sun, which consists mostly of hydrogen and helium, there is essentially no free hydrogen on earth. Instead, hydrogen atoms are always combined chemically with other elements, to form compounds, such as with oxygen (O_2) to form water (H_2O) or with carbon to form organic compounds, the simplest of which is methane (CH_4). Electrical energy is required to produce pure hydrogen by separating it from the oxygen atoms in the water molecule through electrolysis. This electrical energy must be supplied by one of the fossil fuels, by nuclear energy, or by renewable sources such as wind and solar.

ALT-301 ALTERNATIVES – EFFICIENCY AND CONSERVATION

1. *From the vantage point of eastern Great Falls, it seems obvious that great strides can be made here in energy conservation. Such measures should be taken before creating any excess generating capacity. C10*

   Electricity can be generated or conserved in countless ways that have less of an irreversible impact than the SME Highwood power plant will have on our state. C50

   Even more impressive savings than those associated with wind power could be realized by smart investments in the most cost-effective energy path of all: conservation and efficiency. In its various forms, energy conservation ranges in price from 1 to 2 cents per kilowatt hour. C155

   Nothing in the portfolio of this project deals with the global necessity of CONSERVATION. If it was truly the goal of SME to offer a way to save money on power, they would be promoting, teaching, and including conservation in their assessment of future need. If conservation were part of the package here, would 250 megawatts of power be a justifiable need? C105

   Yellowstone Valley Electric has had occasional tips in its magazine to show its customers how to conserve energy. It has had programs to encourage off peak power use. I have never seen anything of the kind from Fergus Electric. It has never talked about even the simplest thing such as switching to fluorescent bulbs. Much of Yellowstone Valley's new load is coming from the Billings West End which is people dedicated to conspicuous consumption with nary a thought of conservation in their heads. It may be that the increased costs per kilowatt hour may not rock their finances, but the more they use, the harder it is for the rest of us. The coop partners in SME need to take affirmative action to educate their customers on conservation. It is the cheapest power available. Most coop customers have no idea that their kilowatt-hour rates will nearly double. C106

   A much better idea than the HGS would be Conservation and Efficiency in using energy, combined with Solar power and Wind power. Make central Montana and Great Falls not just "the electric city" but the "Renewable Electric City." C122

   When I turn my electricity on, 10 below, 40 below, I feel the heat that far away from it, but I get a bill about $600. So I don't burn electricity during the wintertime. I'll burn wood. I have not seen or read anything about fuel conservation. I've learned that from these electrical co-ops. I have not seen a document that says the last three months we burned less energy. So, therefore, you're going to get a break by $20 or $30. C129

   Even today, Montana's rural electric cooperatives, as well as the City of Great Falls, are in an excellent position to walk away from this enormous capital investment in an expensive, polluting, centralized fossil fuel generating plant and invest, first, in energy conservation measures, and next in decentralized, smaller scale, diverse renewable energy facilities -- wind, solar, small hydro, geothermal. In the co-ops' case, these could *be sited on their own members' property, earn income for those members, and feed power into the co-ops' own lines. As long as they continue to work with their members to invest in insulation, weatherization, cogeneration and other forms of energy efficiency, Montana co-ops ultimately could produce all the power they need from a variety of decentralized, clean, renewable sources. C155*

When are we going to seriously look at the non-polluting energy sources? When the planet has baked to a crisp? Let's talk about conservation of energy! C283

Response: Conservation and efficiency are crucial parts of any overall energy strategy in Montana and elsewhere, and Montana law requires utilities and cooperatives to invest in conservation and efficiency. However, even if additional energy conservation and efficiency measures were implemented, it would still not be enough to meet the purpose and need as defined by NEPA. Nevertheless, the FEIS includes a mitigation measure encouraging SME's member cooperatives to further promote existing and new conservation and efficiency efforts. These would include incentives, weatherization, installation of ground source heat pumps, solar panels, small-scale wind generation, and so forth.

Load forecasts take conservation/efficiency efforts and investments into account. If consumers and the cooperatives were not investing in energy efficiency, these forecasts would show even higher load growth than they do.

2. *Have any direct financial incentives been considered toward load reduction, alter peak and non-peak demand or load-leveling options so that for example, wind farms backing each other up when needed, as suggested by Governor Schweitzer at his Energy summit in Bozeman last October 2005? C80*

   Response: To our knowledge, no such incentives have been offered in Montana to date.

3. *I have solar panels on my house and extra insulation on my house. Solar panels are hand built. We all can do that. A bit of conservation will take care of the fear that we have right now about losing our energy. C99*

   Response: Individual efforts are important in conserving energy and reducing the overall growth in demand. Montana's cooperatives encourage and support such efforts.

4. *It does not appear that clean technologies such as wind power and more stress on conservation and energy efficiency were adequately addressed. C121*

   Response: The DEIS did address each of these alternatives and the FEIS expands the rationale for dismissal of alternatives as well as providing analysis of two combination alternatives addressed in Comment 4-300. The member systems of SME have encouraged energy conservation in the ways articulated in the October

2004 Load Forecast. SME has asserted that it is in the process of updating the October 2004 Load Forecast and that conservation will be addressed in the context of the revised study.

5. *We have over 425 ground source heat pumps in the Yellowstone Valley Cooperative system. That saves base-load generation. When anybody comes and says they're going to build on our system, we recommend to them that they look at ground source heat pumps. That is an energy conserving method that we have utilized. We give a financial incentive to them for that. We have gone to the state and got a financial incentive for developers, so that they can qualify for using ground source heat pumps. C159*

   Response: Yellowstone Valley's conservation efforts and expenditures are acknowledged in Table 2-1 in the EIS.

6. *The REA's involved here have done very little to reduce the demand for power. A focused campaign, which is much cheaper than this plant and the future price of coal, could reduce demand by at least 20%. C30*

   Response: Table 2-1 of the DEIS presents energy conservation efforts of the SME member cooperatives for 2004. It is expected that these efforts will continue. The member systems of SME have continued to encourage energy conservation in the ways articulated in the October 2004 Load Forecast. SME has asserted that it is in the process of updating the October 2004 Load Forecast and that conservation will be addressed in the context of the revised study.

ALT-302 ALTERNATIVES – SOLAR ENERGY

1. *We have an abundance of sun and wind here and these options for energy production should be considered first C8*

   Response: Solar and wind energy were among the alternatives considered in the EIS. While they have many attractive features, they were incapable of meeting the purpose and need as stand alone alternatives. However, 6 MW of wind power has been incorporated into the proposed action.

2. *It is no secret that the United States is about 25 years behind in the use of alternative technology for electric energy generation. For example, this year, 2006, spending a week in Santa Fe, NM, I did not find a single solar collector in this suitable climate. In cloudy Holland solar collectors are used to run harbor and traffic lights on a regular basis. C29*

   Response: While the United States has been a leader in some aspects of alternative energy technologies, other countries have also shown leadership in this area. Solar energy – both photovoltaic and other forms – has made advances in this country in the last two decades. However, this form of energy supply will not satisfy the documented need established in the purpose and need sections of the EIS.

3. *Alternate energy especially solar is exceptionally lacking in their current inventory of power, and the 1 net metering service in Beartooth REA's service area is indicative of their lack of any desire for diversity. C30*

   Response: The FEIS includes a mitigation measure encouraging all SME member cooperatives to emphasize investments in solar energy as well as conservation measures generally, including installation of solar panels by customers. Again, this form of energy supply will not satisfy the documented need established in the purpose and need sections of the EIS.

4. *Companies such as Nanosolar (backed by Google's two founders, the insurance giant Swiss Re, and others) are beginning to produce inexpensive solar cells. Within five years environmental and health damaging coal power plants, such as the one proposed by SME, may be totally obsolete. C50*

   I really want to speak out against such destructive folly anyway. The 'last straw' for me was reading about a new technology for producing photovoltaic cells that reduces the cost of that generating technology by a factor of 4 - which would potentially make it cheaper than coal! C69

   The DEIS does accurately present the expensive nature of solar energy, but the technology (particularly with nanotechnology) is improving rapidly, but as demand increases, the cost will continue to drop, particularly when cost of transmission is considered and the benefits of local, 'customized' load demands can be met. C80

Recently-released reports also indicate that the cost of photo-voltaic panels has been reduced by a factor of 4-5, making them highly competitive with grid-supplied electricity for most applications. Several large manufacturing plants are under construction, and within a few years, we may be able to start shutting down coal-fired plants and dismantling much of the electric grid. In that case, our local CFB plant would shut down, too, leaving investors, the co-ops, and the City of Great Falls insolvent. C134

Solar energy must be amongst the cleanest energies available. Recent growth in technology and availability, in Montana, of vast, flat regions of land permit the use of solar energy technology to be exploited at a level never seen before. C205

Response: The cost of solar energy, although it has come down substantially in recent decades, remains much costlier than more conventional energy sources. To determine when it might become more cost-effective is speculative and beyond the scope of this EIS. The EIS includes a mitigation measure encouraging SME to take advantage of exterior solar-powered lighting at the HGS facility, where feasible.

5. *I have a small car and an on-demand water heater along with a solar system for electricity, and I still live in town. Yes, it costs a little bit more, but in the long run it will pay for itself. I had to change my priorities, but I can wake up in the morning and feel good about seeing sunlight and knowing that I'm producing a clean energy. Montana needs the cleanest environment we can get. C147*

   Response: Thank you for your comment.

6. *We also are looking at solar and trying to help some of our remote areas with solar wells because of the cost of construction of doing lines out there, as well as we think it makes economic sense to help do that and provide that service. C159*

   Response: Thank you for your comment.

ALT-303 ALTERNATIVES – WIND ENERGY

1. *The wind itself is better harnessed as a clean source of energy than this costly, dirty plant. C4, C63, C82, C84, C85, C104*

   My choice for energy production is wind generated power. C24, C240

   The $515 million would be better spent on wind power. Renewable energy is our future. C175

   The development of wind power such as the recently constructed wind farm at Judith Gap and the smaller wind project on Gore Hill offer much promise. C179

   [Judith Gap wind farm] is wonderful, so functional, beautiful and non-polluting. Support wind power for Montana. C246

   There are other alternatives to consider. Wind generation is clean and would not pollute the air like a coal fired power plant. C272

   What happened to wind power? We certainly have enough wind up here in Northern Montana to put to good use. Especially as the wind is part of the problem in this project since it will blow the pollutants right up to us here on the Hi-Line of Montana. C287

   Our state needs to be progressive and look toward news technologies, such as wind power. Great Falls should be "the windy city" and not Chicago! The market is changing and we need technologies that are in harmony with humans and the environment. C291

   To drive through the wind turbine "farm" south of Judith Gap is a thrill…to think there is hope for our future and the health of our grandchildren. We are so proud of the people and effort it took to construct that incredible clean alternative. Then, to read of this Highwood Station, is to despair that we as a state have learned anything from a century and a half of exploiting, polluting and spreading toxins in our air, water, and on our land. C297

   Great Falls has long held the reputation as one of the windiest cities in the state and, if studied, locations could be found in the area that would be suitable for a large wind-turbine project. Unfortunately, the draft EIS dismisses the potential for a large wind project out of hand. C317

   Response: The EIS addresses wind power, but it has limitations in terms of providing both for peak and base load power, due to its intermittency. Wind does not always blow when it is needed. However, the proposed action integrates 6 MW of wind power. Unlike fans, wind turbines do not produce breezes or wind, but convert the kinetic energy of the moving air that constitutes wind into mechanical

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and electrical energy. Thus, the proposed wind turbines at the Salem site would not blow pollutants anywhere.

2. *The problem with wind power is that it is intermittent. If you have ever driven by the Judith Gap windmill project when there isn't a high wind, you're going to see maybe three or four turbines running. On the other hand, these turbines are set up to shut off at a certain wind velocity so as not to snap. Wind at its best is 43 percent efficient. It should be part of our electricity, but it's not the solution for dependable, efficient energy. C5, C31, C43*

   Response: As noted above and in the EIS, at present, wind's intermittency hinders its more widespread utilization by electric utilities.

3. *A "wind farm" generating facility, provides the great potential benefits of low cost, sustainable and low environmental impacts…. Another major argument given against the development of the wind resource is the periodic calm day which would impair consistent power generation. One response could be to build wind generation facilities in a variety of locales throughout the state.... In short, the wind is always blowing somewhere in Montana and it can be utilized in an intelligent way to ensure a relatively consistent power supply. C10*

   I object to wind power being discounted. Perhaps the site would not be able to produce the amount of power the plant would but perhaps it would produce enough for Great Falls. Other communities could do likewise. The alternative of multiple types and places of generation does not seem to have been considered. C45

   Response: Siting wind generation facilities in multiple locations requires multiple transmission line interconnections as well as additional costs associated with using the electrical grid. In order to satisfy the demand for electricity and do so completely with wind power would require the installation of at least one additional field of wind generators. This would result in duplication of costs and render this form of generation expensive. Should the wind not blow at both sites, the cooperative would become once again exposed to the market forces of purchased power. Thus, utilities cannot rely on the wind "always blowing somewhere." Two alternatives based on a combination of energy sources are included in Chapter 2 of the FEIS and are mentioned in Comment 300-4.

4. *Wind energy from the Judith Gap project supplies 150MW (Figure 2-5), and facilities on a comparably farsighted scale could supply the bulk of the power to bridge the anticipated deficit in the future. No doubt further technical refinements to the state of the art, such as enhanced batteries or capacitors for storing energy from periods of peak generation, will be developed in time to create a stable market for this power. C10*

   Response: These possible advances are too speculative to be relied on to meet the purpose and need at this time.

5. *I happened to be last month in Holland and I saw many, many windmills there. We have, I think, just as much wind as they do in Holland. There are alternatives to a coal-fired plan. C27*

   Response: Thank you for your comment. Alternatives are addressed in Chapter 2.

6. *When I asked a city government official about wind I was told that wind generation was way too expensive and it was subsidized by the government. Again, this was a strange argument for it is well known that the US coal industry is also subsidized by the state and federal government through tax breaks. C29*

   Response: The principal shortcoming of wind power as provider of baseload electricity is less with its cost – shown by Table 2-2 to be about equal with a pulverized coal plant and less than 20 percent higher than a CFB plant (excluding "firming costs" as shown in Table 2-12 of the DEIS) – than with its intermittency.

7. *This proposal includes a paltry 6 Mega-watts of wind energy. Numerous studies and the accumulation of international experience indicate 20% of electrical power from wind is easily attainable. The REA's and SME's administrators continuously seem exasperated at the possibility of using an intermittent source. C30*

   Of course, you cannot have base load consisting only of wind. But in Europe, particularly in Germany, the base loads are working very well with the combination of winds up to 20 percent. C110

   Response: The intermittency of wind has a "firming cost" associated with it that raises its overall cost to the utility and the consumer. In essence, the utility has to pay a price to ensure a continuous supply of on-demand power, which raises the cost of wind power to about 50 percent higher than that from a CFB plant (see Tables 2-6 and 2-13 of the FEIS). There are also recent reports that the utility systems in the European Union are experiencing system instability and dispatch issues due to the high utilization (in excess of 20 percent) of wind power which was once embraced as the solution for generating stations.

8. *My husband and I have wondered more than once why there aren't more wind-generating plants in Montana. Now we have one answer: Montana doesn't plan for them. Why not? Surely there is plenty of wind! In the Highwood Generating Station, you could certainly use wind. I am told that you are using 20-year-old technology there, however. But wind power must be as old as that. If age or proven effectiveness is a factor, why not use it? C32*

   Wind cannot realistically supply 250MW, but it could [in] amounts that could be scaled up, depending on financing opportunities, land use agreements, wind site potential, so why wasn't Wind Energy encouraged more, but not on such a 'tiny' scale with four turbines? C80

Response: In Montana as elsewhere, wind power is rapidly increasing as a source of electricity. It is the fastest growing source of electricity in the United States today. The HGS would include 6 MW of wind power.

9. *Bat mortality has been substantially improved with a new rotor design. C58*

Response: Thank you for this information.

10. *How were cost projections in Table 2-2 determined, as I question how capital costs and fixed O & M? The Judith Gap Wind Farm (highly praised in the DEIS), cost 150 million dollars, for 135MW capacity with 90 turbines covering only 14 square miles. Governor Schweitzer 'lauded' the facility, and he himself stated the MWhour cost at $38, to include firming costs. C80*

How did SME establish $50.60 MWH, whereas the real numbers (actually endorsed by Governor Schweitzer) from a world-class and proven wind resource like Judith Gap is actually $31.60, and adding $7.50 for firming costs brings the cost to $39.10, much less than what Table 2-2 misrepresents, and doesn't account at all for carbon tax and sequestration costs? C80

One thing that concerned me about the DEIS was the poor score that wind power was given. I worked for five years trying to get the Judith Gap wind project off the ground, and I am very familiar with a lot of the economics of that and know for a fact that it's the cheapest power that can be produced starting from new construction these days. Even when you add the cost of firming, the power in Judith Gap was cheaper than this plant. C110

Already customers of Fergus Electric Cooperative, one of the five southern Montana rural electric cooperatives banding together to build this plant (with Great Falls as partner), typically pay the highest electricity rates in the state. They -- and customers of the other partners in this dubious enterprise -- can expect to be paying much more if this plant is constructed. New coal power is coming online in the range of 6 to 7 cents per kilowatt hour (or even higher). By contrast, the clean renewable power from the windfarm at Judith Gap is flowing to customers of Northwestern Energy for about 3.7 cents per kilowatt hour. The Highwood Plant is expected to cost $515 million to build. An equivalent amount of windpower would cost about $300 million. C155

Please re-analyze and address the issue of wind power. Your Draft EIS figures showing a $50.60 per megawatt-hour are not at all well supported and other estimates put this cost high, probably more than $10 a megawatt-hour high. It is evident that the $50.60 figure is out of line and includes vague and unsupportable ancillary costs. C294

Response: Figures shown in Table 2-2 were a compilation of levelized costs of new utility generating plants in the Northwest Power Pool Region. The cost of wind power has tended to come down in the last couple of decades, and the $38/MWhr cost for the more recently constructed Judith Gap Wind Farm would be indicative

of this trend. Table 2-12 shows a cost for wind of $35/MWhr, but this excludes the firming cost for "spinning reserve" needed to supply on-demand power when the wind is not blowing.

There have been "hints" of lower costs from the Judith Gap project, but there has not been anything official published by NWE or the facility operator on the actual cost of generation including firming. Without knowing the source and cost of firming in the quotes given in public comments, it is impossible to verify them. The costs presented in the DEIS stated the assumptions and sources of costs used in calculating the blended rate (wind + firming from market priced electricity).
At present, there is no carbon tax, and the imposition of a carbon tax on fossil fuels in the near to medium-term future in the United States is not certain. Likewise, whether sequestration of CO2 would ever be required or is technically and financially feasible, is highly speculative.

11. *Doesn't SME and ECP realize that Montana has the potential to provide 116,000 MW of wind power, and why doesn't that motivate them to exploit that tremendous potential, even in SME's our customer area where transmission lines are accessible? C80*

    Response: As noted in other responses, wind's intermittency remains a hurdle to realizing this potential. Access to existing transmission lines and the need for more transmission capacity are a major short-term impediment to wind power expansion in the state.

12. *How did SME determine its 250MW 'wind farm' footprint' – which is far too high – when compared to the Judith Gap Wind Farm, which has 90 turbines providing 135MW and covers 14,000 acres or nine square miles and is operational? C80*

    How does the one hundred acres needed for four 1.5MW wind turbines 'square up' with the earlier estimate of 46,000 acres for 166 potential wind turbines (a rough estimate reveals that at 100 acres per four turbines, the result would be 4-5,000 acres or somewhat higher for spacing and efficiency, but nowhere near 46,000 acres)? C80

    Response: As a result of a typo in the estimated wind power density, in the DEIS an average power output of 3.47 MW/square mile was used, instead of 13.47 MW/square mile. Thus, the estimated area to provide 250 MW of capacity in a class 4 area is 18.6 square miles rather than 72 square miles. This correction has been made in the FEIS.

13. *Any serious wind energy advocate knows that a 250MW 'wind farm' would not be practical as it cannot meet peak and load demands, so why did SME even speculate on a 250MW size wind farm, vs. a more practical approach like the proven 135MW Judith Gap wind farm the DEIS mentions extensively? C80*

    Response: In the FEIS two alternatives have been added that combine renewable technologies and fossil fuels such as coal and natural gas.

14. *Why doesn't the DEIS even mention the direct economic contribution to landowners, such as wind turbine lease payments that range from $2 – 4,000 dollars per turbine? According to www.nationalwind.org, rural land owners, particularly farmers and ranchers hit hard by our lingering drought, could reap the greatest benefits from wind energy development, AND also local county governments through property taxes. C80*

Response: Private landowners such as ranchers and farmers who lease property to wind developers are often beneficiaries of wind power development, and have become some of its biggest advocates. A statement to this effect has been added to Section 2.1.3.1 of the EIS.

15. *How will SME incorporate wind energy if the industrial park site would be the option decided upon? C80*

Response: If the Industrial Park site were to be selected, the wind component would not be included due to insufficient land area.

16. *How will SME obtain financing for the four wind turbines at the Salem HGS site? C80*

Response: SME would obtain financing from a separate source for the wind turbines. They would not be funded by the loan from RUS. SME's application under the CREBs program for its wind turbines was approved by the IRS on December 1, 2006.

17. *If SME were to consider a wind farm option instead of a coal plant, how many construction and permanent jobs might that create and also projected property taxes and financial benefits for landowners? C80*

We should focus on wind power here. Backed up with existing dirty power that is already online. There has been much salivating over jobs and tax revenue. Wind would also create some of both. Farmers would be rewarded. Power contracts in the future will require more "green" power like Malmstrom's 8% in the near future. C127

Response: If wind power was considered a viable alternative, this detailed level of analysis would have been conducted. Job creation and property tax benefits would have been quantified. As noted, developing wind power would indeed generate jobs and property taxes for the local economy.

18. *Beyond price comparisons with coal, windpower offers deeper and longer-term cost savings: no use of water, no pollution, and the "fuel" is free. Windpower also can come online much faster than coal, and in smaller increments, making it less of a burden to finance, since the money need not be raised all at once, as with a single large facility. C155*

Response: Thank you for your comment. Wind power does indeed enjoy these benefits but, by itself, fails to satisfy the purpose and need.

19. *Presently four 1.5 MW wind turbines are proposed along with the 250 MW base load coal-fired power plant. We commend SME for proposing supplemental use of a renewable resource such as wind energy to help meet power needs and reduce burning of coal. We ask if it would be possible to increase the wind energy production component of this project to further reduce coal burning when wind energy resources are available? Could some of this maximum base load capacity be met with wind turbines, especially if load leveling energy storage systems are considered? Would it be feasible to consider a proposal whereby approximately 15 to 20 percent of the power needs of SME customers could be provided by wind energy? For example, have a 200 MW coal-fired power plant and 50 MW of wind turbines. This could be considered as a method for reduction in pollutant emissions to lessen visibility impairment. C36*

    Response: The FEIS has included two combination alternatives which include renewable components like wind. The performance evaluation of the wind turbines at the HGS could lead to further development of wind power by SME.

20. *SME's proposal is woefully inadequate and out of date in its investigation of alternative energy sources. The initial feasibility study capped wind power at 3% of an energy portfolio (Montana law mandates 15% renewable energy by 2015); the Judith Gap Wind Farm already provides 8% of Northwestern Energy needs. Will the Great Falls coal plant use up so much of our current transmission capacity that it will discourage the development of new wind farms or the generation of electricity by ranchers who could produce wind or hydropower as new "crops"? Conversely, because new wind farms can be brought on line much faster than coal plants, will transmission of electricity from the wind generators being put up by the counties, the proposed 500 MW wind farm north of Glasgow by Wind Hunter, and by Northwestern Energy/Babcock and Brown leave any transmission capacity for SME? C20*

    Response: HGS use of the electrical grid would not be affected by new wind development in the state because its portion of the grid and its allocation of the Great Falls substation is already reserved. Use of the substation and grid by electricity generators is on a first come, first serve basis. New generation facilities would necessitate additional capacity on the grid. Additional transmission lines are being proposed and built, some specifically to handle wind generation.

ALT-304 ALTERNATIVES – HYDROELECTRIC ENERGY

1. *Our hydroelectric dams are all owned by an out-of-state electric conglomerate. We have no control over that. C5*

   It is ironic that Great Falls, founded with the prospect of bountiful electrical energy from its beautiful waterfalls, should now have to endure a massive coal fired power plant. C13

   There is more energy produced here in Great Falls by PPL hydro than we need. C78

   Instead of chasing the 'coal train', why doesn't the City of Great Falls expend its energy to REGAIN its heritage, the dams on the Missouri River that Paris, the first mayor, had the vision to develop as clean, renewable energy which became the city's namesake, the 'Electric City?' C80

   Wouldn't it be smart to explore updating the turbines in our dams? C87

   The EIS states that there are 5 hydro-power facilities near Great Falls. SME should look at purchasing these plants in lieu of spending vast quantities of money to build a new coal fired plant. Hydro power will work very well with wind power and other forms of add on power. C104

   We have labor, we have power, and we have people here. We're all Montanans. I understand you need the power. We don't want to take the power away from the people that need it. We need it in Great Falls. We have the five nicest dams in the world, but we don't own it. PPL does. C153

   Hydroelectric technology, though expense to construct is less damaging to the planet and has acceptable repercussions to humanity, although the effects to our ecosystem are questionable. C205

   Response: Thank you for your comments. The five hydroelectric dams on the Missouri River at Great Falls do generate renewable, clean energy. As indicated by several of the commenters, these facilities are owned by a private utility that has other commitments for the power that the dams produce. Therefore, this energy is unavailable now and in the foreseeable future to SME and ECP.

   SME has issued several requests for proposals for power to area power generators with hydroelectric generation in their systems; the responses from the generators show costs that reflect market prices of electricity. It is unrealistic to assume that the private owner of the hydroelectric dams in the Great Falls area would be willing to sell that power to SME at the cost of generation.

ALT-305 ALTERNATIVES – INTEGRATED GASIFICATION COMBINED CYCLE (IGCC)

Overall DEQ Response to all IGCC-related Comments under ALT-305

SME-HGS proposed a coal-fired power plant incorporating circulating fluidized bed (CFB) boiler technology for the production of steam to be routed to a steam turbine, which in turn drives an electric generator capable of producing electrical power. The United States Environmental Protection Agency's (EPA) Draft New Source Review Workshop Manual (October 1990) (NSR Manual), which provides guidance on the best available control technology (BACT) analysis and determination process for major sources of air pollution, states that, "historically, EPA has not considered the BACT requirement a means to re-define the design of the source when considering available control technologies." However, the NSR Manual goes on to indicate "…this is an aspect of the New Source Review – Prevention of Significant Deterioration permitting process in which states have the discretion to engage in a broader analysis if they so desire."

Further, a recent EPA policy/guidance statement titled *Best Available Control Technology Requirements for Coal-Fired Power Plants,* authored by Stephen D. Page, Director, EPA Office of Air Quality, Planning, and Standards (December 13, 2005), provides that inclusion of technologies such as integrated gasification combined cycle (IGCC) in the BACT analysis for a coal-fired power plant, such as that proposed in this case, constitutes re-definition of the source and is not appropriate under the BACT analysis and determination process. EPA has recently indicated that the policy described in this memo does not constitute the EPA's final decision on this issue but does constitute the EPA's legal opinion on the issue at this time.

Based on the DEQ analysis of the proposed project, the DEQ determined that redefining the source from a CFB project to an IGCC project is not appropriate, in this case. For a more detailed analysis of IGCC, including an analysis of technical, environmental, and economic impacts, associated with the use of IGCC for the SME-HGS project, see Section III, BACT Determination, of the permit analysis to the Supplemental Preliminary Determination on the Montana Air Quality Permit (MAQP) #3423-00 included as Attachment I of the DEIS, DEQ Supplementary Preliminary Determination on Air Quality Permit #3423-00.

Comments and Responses

1. *Far cleaner and viable coal plant technology, such as integrated gasification IGCC, now exists. Choosing IGCC over CFB can change the future of Great Falls for the better. C4, C8, C88, C263, C269*

   Based on a July 2006 EPA report, IGCC technology is anywhere from 1.7 to 10 times cleaner than CFB technology. Water use is also significantly lower with an IGCC (about 10% less than that estimated for the HGS). C23, C73

   Montana has a lot of coal deposits, and we as citizens have a right to say use it safely or don't use it at all. Sooner or later we will all need these deposits, but we'll manage them correctly and safely for everyone. An IGCC integrated gasification combined system plant sounds like the solution to help everyone. It will produce electricity and help clean up the environment. Yes, it may cost 15 to 20 percent more. C147

I would not be opposed to an IGCC plant going in if it was able to capture most of the mercury and carbon dioxide emissions. C259

Response: The EIS acknowledges the various potential environmental advantages of IGCC technology, but also points out its limitations at this point in time as a viable alternative to the CFB technology proposed for the HGS.

2. *The DEIS does not provide an adequate examination of IGCC technology in regards to the requirement to implement the BACT. C8, C110*

   The air quality issues raised by the HGS would be resolved to an acceptable level with the use of the IGCC process, which has been given little regard in the proposal and the draft EIS. I encourage a thorough and unbiased study by both SME and DEQ of this process and the use of combined systems such as natural gas-fired turbines, wind and solar power plants to reduce the level of environmental pollutants. C12, C78

   The RUS would be remiss in accepting the incorrect data cited in the DEIS regarding the comparative reliability and emissions standards of an IGCC coal plant facility (Table 2-7). Harry Jeagher, the editor of Gas Turbine World, cites a January-February 2006 reference that documents 90% reliability. Having personally interviewed John Thompson of the Clean Air Task Force and James Childress, Executive Director, Gasification Technologies Council, I am convinced that Bison Engineering and Stanley Engineering have not kept abreast of current developments in clean coal technology. At our invitation, Mr. Thompson presented educational forums on IGCC in Great Falls and at the Governor's Office in Helena, and Mr. Childress wrote an opinion column for the local newspaper. On this basis alone, I think the RUS would have justification in determining SME's application to be out-of-date and incomplete. C20, C84

   The IGCC alternative to CFB merits detailed evaluation in the EIS. The EIS incorrectly states that IGCC is not cost effective, needs more research to attain higher availability, and does not enjoy significant emission advantages over CFB….each of these conclusions is incorrect. Therefore, the EIS should not have eliminated IGCC from detailed review. We respectfully request that the EIS be revised, adding IGCC to the options evaluated in the detailed analysis. C23, C77, C105

   This document dismisses IGCC technology prematurely and without adequate justification for its dismissal. C25

   We recognize that the proposed CFB technology and technology proposed for reduction of air pollutant emissions provides good control of air pollutant emissions, and the overall contributions of HGS air emissions to global climate change are relatively small on a national scale. However, IGCC is a dynamic and rapidly evolving technology, and has the potential to make carbon capture and sequestration much easier and cheaper than the proposed CFB plant. It is not clear to us if the latest information on the rapidly evolving IGCC technology has been fully evaluated in the DEIS and considered by SME *and the RUS, especially considering that this proposed HGS plant would not become operational until 2011, and would be in use for decades after that. C36*

Response: Please refer to the overall DEQ response to ALT-305 at the top of this section. Since IGCC was not carried forward as a final alternative, it was not subject to detailed analysis. However, additional information regarding IGCC technology has been added to the FEIS that supports its dismissal as one of the final alternatives. With the inclusion of this information, we believe that the EIS's evaluation of IGCC reflects the most current knowledge concerning this emerging technology.

3. *An IGCC plant would require less coal to produce the same amount of energy, use much less water, produce commodities that could be used in agriculture, transportation, and provide a ready source of wintertime heating for other facilities within the Industrial Park. Unlike the CFB coal plant, an IGCC facility has the potential to sequester greenhouse gases such as C02 (and even makes the C02 available for sale for enhanced oil recovery), produces less acid rain, makes purified sulfur available for agriculture, can generate hydrogen for fuel cells, can be used to make natural gas when the need for electricity is low, can make diesel fuel (syngas) and can be throttled back or ramped up to firm up the wind power that will become increasingly prevalent in our windy area. C20, C64*

   It is our understanding that IGCC technology in addition to offering potential reductions in air pollutant emissions and (when used with a shift reactor) emissions in greenhouse gases, also has potential advantages of requiring less water; producing less ash requiring disposal; and avoiding the need for the addition of limestone and ammonia during the combustion process for sulfur and nitrogen oxides emissions control. It is not clear to us if these benefits of IGCC have been considered during the cost-benefit analysis for IGCC vs. CFB technology or in the analysis of alternative power plant sites. C36

   How does SME rationalize its belief that IGCC is 'experimental,' despite the fact that the Environmental Protection Agency strongly affirms that IGCC uses 40% less water and has higher coal burning efficiency and is cost competitive? C80

   If coal is being crammed down our necks than why not IGCC? Countries like Ireland and Italy and Australia have this. It is a system that doesn't release 73 toxic chemicals in the air. It uses 40% less water, and there is less CO2 emissions. C165

   Response: The EIS acknowledges that IGCC technology has the potential to yield both environmental benefits as well as economically valuable byproducts. It should be noted that many of these are <u>potential</u> benefits. However, these actual and potential benefits are not enough to outweigh this technology's current limitations for baseload power generation.

4. *THE RUS SHOULD NOT PROVIDE LOAN GUARANTEES FOR ANY NEW COAL PLANT UNLESS IT EMPLOYS THE ZERO EMISSION INTEGRATED GASIFICATION COMBINED CYCLE (IGCC) TECHNOLOGY OF THE 21st CENTURY. An IGCC coal plant removes mercury in such a pure form that nearly all the mercury from one year's supply of coal would easily fit in a closet, instead of being scattered in our air, deposited on our land and incorporated into the fish of our scenic waterways. Industry may complain that IGCC is too expensive (they can't afford not to do it); that it can't be financed (IGCC plants are currently being planned by Exergy, Basin Electric, and numerous others); that IGCC is "unreliable." C20*

   Since IGCC would not contribute as much to pollution as CFB I feel that it is time we put public health first. Even though IGCC would cost more up front, in the long run, it would be more profitable. C132

   As a consumer of Tongue River Electric and Mid-Yellowstone Electric, I would hope that a thorough comparison of the costs that would be required to retrofit the planned Highwood plant to capture carbon dioxide and any other pollutants which foreseeably could be required to be removed and the cost of a plant utilizing IGCC technology be made. I don't think it's unrealistic to anticipate a time when our government would either implement a carbon tax or require the removal of carbon dioxide from coal fired plant emissions. C318

   Response: Please refer to the overall DEQ response to ALT-305 at the top of this section. While IGCC is not "zero emission," the EIS recognizes that this technology in general has lower air emissions than CFB. However, due to its lower reliability, the emissions of power sources supplying power when the IGCC plant is down must be accounted for, as well as the increased capital and operating costs. Numerous factors including reliability, cost, and emissions were considered in the evaluation of IGCC. As alluded to in the overall DEQ response above, as long as the proposed emissions meet the NAAQS and MAAQS and their permit conditions, the specific technology selected is at the discretion of the project proponent (SME).

5. *The EIS also mischaracterizes the commercial status of IGCC. On page 2-31, the EIS attributes the following claims to the USDOE: 1) IGCC has insufficient operating experience; 2) That major components of IGCC have not been integrated into power applications, and 3) that the technology has been demonstrated at only a handful of facilities worldwide. Attachment 1 is the DOE reference cited by the report. These conclusions attributed to DOE by the EIS are not found in the article and should not form the basis for rejecting IGCC from detailed review. C23*

   Response: The FEIS has been modified to more accurately reflect the USDOE attachment cited in the DEIS. The subject DOE attachment was cited regarding the number (two) of IGCC plants currently operating in the United States.

6. *By failing to look at total costs, and by focusing exclusively on today's costs and not future costs, the EIS reaches the wrong conclusion that IGCC is not cost effective. C23, C24*

Twenty-four plants using IGCC have been proposed….The cost of the plants is one billion dollars for 600 megawatts for one plant. We're spending 515 million for 250 megawatts. There's another plant that is 630 megawatts, and that is projected to cost one billion dollars also. C68

When carbon capture and sequestration is included in the economic analysis, IGCC creates electricity18-32 percent cheaper than pulverized coal plants, according to a recent report by the Western Resource Advocates. C73

In regards to Table 2-6, how does SME arrive at the questionable '42.8' figure for an Integrated Gasification Combined Cycle (IGCC) plant, when which compared to Circulating Fluidized Bed (CFB) technology, is 42% higher than typical estimates of 20-30 percent, NOT 42%? C80

Response: SME and its consultants investigated current and potential future costs in its analysis of various technologies to provide electricity to its customers.

7. *The EIS also incorrectly concludes that IGCC plants do not achieve acceptable levels of reliability. This conclusion is not supported by the facts. Three of the newer IGCC plants are found at Italian refineries…. the capacity factors of these three plants are between 90% and 94%. Only one of these plants operates with a spare gasifier. All three IGCC plants utilize liquid refinery wastes not coal. But to use coal in most gasifiers, the coal must be slurried to a liquid, so the gasifier, and all the key downstream equipment, is exactly the SAME as the ones found in the Italian refineries. As noted in the Turbine World article, US power companies overly focus on Wabash and Polk plants. These older plants have availabilities that don't exceed 85%. C23, C24*

IGCC isn't as experimental as the draft claims. There are hundreds already operating with more being built to use western coal. C127

IGCC technology has been around since 1970, but it is funded by the Department of Energy to research its viability. It's been found that it's very viable and economically feasible. They have funded several plants around the United States. They're producing power economically and were partially funded by the Department of Energy. So there are plants running right now using IGCC technology. So it can be done and should be done, if we're going to use coal here in Great Falls. C135

According to SME, in an article in the Great Falls Tribune dated 8-28-2006, the IGCC method was ruled out in the draft document because it would not be "cost-effective" and lacks an "acceptable level of reliability." Why would Indiana, Florida, and possibly Colorado build the IGCC plant if it wasn't reliable? C299

Response: The FEIS includes additional information on the reliability of IGCC. RUS and DEQ acknowledge that varying professional and scholarly opinion exists concerning the reliability issue. RUS, in evaluating the loan application and the SME proposal, has considered this uncertainty and SME's analysis that the risk of

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investing in IGCC is too great at this time. Also, please refer to the overall DEQ response to ALT-305 at the top of this section.

8. *We note also that the CEQ regulations for implementing NEPA indicate that unquantified environmental impacts and values should be considered (40 CFR 1502.23). We believe the FEIS should better explain how such unquantified environmental impacts and values (i.e., reduced emissions of air pollutants; reduced emissions of greenhouse gases; reduced ash disposal; reduced use of limestone and ammonia; and reduced water use and wastewater discharge) have been considered in the cost-benefit analyses for IGCC technology. C36*

   Have the incentives in Title XVII of the Energy Policy Act of 2005 (42 U.S.C. 16511-16514) to facilitate deployment of innovative technology such as IGCC technology been considered in the cost-benefit analysis? C36

   Response: These unquantifiable factors were considered in both the Alternative Evaluation Study and EIS. (This is not required under the RUS NEPA regulations.) The incentives of the Energy Policy Act of 2005 do not change the conclusion that the risk of investing in IGCC technology is too great at this time. SME has considered the incentives of the Energy Policy Act of 2005 and made application to participate in the Clean Renewable Energy Bond (CREB) program enabled by the Energy Policy Act of 2005. SME submitted an application to the Internal Revenue Service (IRS) as prescribed by the Energy Policy Act of 2005 for $12 million to construct 6 MW of wind generation at the HGS location. On 1 December 2006 it was announced that SME's CREBs application was approved.

9. *The co-ops and the city don't have the luxury of waiting for unproven technology of IGCC to come on line to provide the power that we need right now. It's a simple fact that they need to be lining that power up. IGCC may well be the power source of the future, but it's not commercially fundable right now. C52, C139*

   The fact is, as technology incrementally improves, decades go on. And there will be new technologies coming down the line. There will be sources of power that will be able to reinsert CO_2 into the ground, so we can take care of some of this global warming problem…An MEIC speaker at a conference some months ago suggested that really what Great Falls should be doing is adopting IGCC, so that we in Great Falls here and these co-ops, people who use power in this room can prove to China and India that IGCC is a worth-wild technology and is available now. That may well be the job for someone else. But I don't see it as the jobs of these five co-ops and this city to solve the problems in the world right now. C52

   We understand that CFB technology is not perfect. We also understand that in many people's mind it may not be considered as cutting edge technology. But cutting edge technology and the development of cutting edge technology is something that is best left in the hands of those who can afford the risks associated with that particular process. The five electric co-ops that comprise Southern Montana G&T are not those entities.

These are hard working, salt of the earth people, serving two Indian reservations, and other agricultural based communities across the State of Montana. And that's simply a risk that they cannot afford to take. We believe in the IGCC technology. We looked at it closely. It just did not meet our needs. C128

IGCC technology is in the developmental stages. The technology promises to be viable for future base-load generating facilities. However, further development is needed to prove the technology can result in lower costs and achieve the reliability and availability to meet the industry standards for base-load power. C131

Other clean-coal technologies such as IGCC generation hold promise for the future but to our knowledge is not yet commercially viable. With the clock ticking on the expiration of power supply contracts to serve their customer-owners, the electric distribution cooperatives involved in the Highwood project do not have the luxury of waiting for these technologies to become viable. C178

IGCC is not feasible at the present time. The reliability of these plants is only 80% or less. The generation that is built to serve SME has to be more reliable to be able to be seriously considered. Our cooperative members have to have a very reliable power source. Another problem with IGCC is that the initial cost is approximately 20% higher. If the CO2 is to be captured it adds more cost to the annual operating expenses – maybe as much as 30%. C44

If CO2 is captured where does SME put it? To seriously consider the capture of CO2, our Federal government needs to do some extensive studying to discover if it stays in the ground when it is pumped underground, or simply to determine the most cost effective way to capture and keep CO2 from getting into the atmosphere. The way I see it, the CO2 mitigation problem is in its infancy and whether or not IGCC is a part of the answer is open for debate. C44

Response: Thank you for your comments.

10. *In the coming years in the U.S., perhaps one-quarter of the plants, new coal-fired plants will be IGCC. The new generation gasification plants are here now. For now gasification plants are being planned mostly in states that are trying to limit carbon dioxide emissions, and some states, including Washington, Oregon, California and Vermont, are factoring in the environmental aspects of proposed new plants when deciding what to authorize. Colorado and Wyoming, big coal producing states, are pushing gasification projects. So it is here. It's now. It's today. C68*

    Why can't SME be flexible enough to realize that other states are becoming LEADERS in IGCC, particularly Colorado, where XCEL Energy is starting work on a 500 million dollar IGCC plant that will provide 300MW or more of energy, and has SME looked at what Basin Electric in North Dakota is doing to build an IGCC plant there? C80

    Response: Thank you for your comments.

11. *Unless Montana's coal industry and utilities adopt new IGCC (Integrated Gasification Combined Cycle) technology soon, Montana may lose up to $59.2 million a year in public revenue to eastern coal, and our coal industry may lose $249.6 million a year by 2035. That is the conclusion of a recent Western Resource Advocates (WRA) report. C73*

    IGCC plants, which engender the cleanest coal technology available, have demonstrated the economic and physical capability of using eastern bituminous coal, which has a higher BTU content than western coal. IGCC gives the lower moisture content, eastern coal a present competitive edge. So it will be substituted for western coal now being used in eastern markets as older coal plants are replaced with IGCC plants nationwide. C73

    Sulfur, mercury and other pollutants involved in fossil fuel generation can be cleaned easily from high sulfur coal with IGCC technology, reducing the need for low sulfur coal and giving the higher BTU content eastern coal a competitive advantage. C73

    Response: Thank you for your comments, which relate to an issue beyond the scope of this EIS.

12. *When will ECP consult its prospective investors on what the financial community considers the 'best' coal-burning technology, which according to Standard & Poors, IGCC receives high marks? C80*

    Response: The City of Great Falls (in conjunction with its bonding team) is in the process of selecting an independent consulting engineer to review its decision to participate in HGS in accordance with standard bonding practices.

13. *Why didn't SME approach the Department of Energy and take advantage of the Clean Coal Power Initiative initiated by President Bush in 2002, supported by 10 billion dollars over a ten year period? C80*

    Response: The DOE program was intended to <u>partially</u> fund generation projects designed to serve as research facilities where emerging technologies can be perfected. The program is intended to aid in the construction of these facilities by large utilities in a position to assume the risks associated with the use of a developing generation technology still in the neophyte stages of development. There are reliability and financing issues associated with IGCC, as stated in other responses to comments.

14. *By comparison, what temporary and permanent jobs would an IGCC coal-fired plant offered, and what about jobs generated from the IGCC process associated with by-products? C80*

    Response: If IGCC had been considered a viable alternative, this detailed level of analysis would have been conducted. Job creation and property tax benefits would

have been quantified. Developing IGCC would indeed generate jobs and property taxes for the local economy.

15. *Page ES-4, first paragraph. Add to statement on IGCC plants that when an IGCC plant is down for repairs and unavailable to generate electricity, it is necessary to purchase other energy, which may come from older coal-fired generating facilities with higher emissions than HGS. Further, such energy purchases will be made at a premium, thus driving up the operating costs of an IGCC plant versus a CFB plant. C128*

    Response: A statement has been added to the FEIS indicating that having to purchase power on the market while an IGCC plant is under repair would necessarily involve higher economic costs; such power purchases could potentially come from older coal-fired facilities with higher emissions or from cleaner facilities with lower emissions.

16. *Currently there are four IGCC projects installed and in operation in the U.S. and Europe. The two projects installed in the United States are the Polk Power Station Unit Number 1, owned and operated by Tampa Electric Company, and Wabash River Energy Limited, a unit owned and operated by Wabash River Coal Gasification Repowering Project, a joint venture of Dynegy and PSI Energy, Inc. Both units utilize a fully integrated design of the gasification combined cycle process. Both units receive funding from the Department of Energy, DOE, for 50 percent of the total project costs. Both units burn bituminous coal on a continuous basis. Short-term tests were performed utilizing other fuels including a sub-bituminous coal. C131, C139*

    As currently configured, neither of the two IGCC units now operating in the United States utilizes mercury and/or carbon dioxide, or CO2, specific emissions control equipment. Both units have availability factors less than 80 percent over the many years of operation. Since both of the units have completed their demonstration phases, they both have final reports which can be obtained from the Department of Energy website. C131

    The alternative evaluation study documents the commercial availability of the IGCC process as: The current and near-term IGCC plants must be viewed as technically feasible, but not cost effective with low reliability, which renders the technology to be not economically attractive. The current IGCC plants are providing operational information about the technology, but fail to demonstrate the necessary cost of electricity to allow the technology to be available commercially in time to support SME's needs. This statement is supported by Luke F. O'Keefe of Burns and Roe in their 16th Annual Burns and Roe Seminar Gasification and IGCC Technology on March 21st of 2006. Mr. O'Keefe's summary slide states, "IGCC still needs to confirm cost, schedule and performance." C131

    General Electric's view of the current technology goals also supports the view that IGCC still needs to confirm cost, schedule and performance. GE is regarded as one of the leading suppliers of equipment for power generation stations and is a current *gasification technology provider as they acquire the Texaco gasification process in 2004. In a presentation to the Gasification Technologies Council on October the 10th, 2005, GE stated the current reference plant design is projected for completion at the end of 2006. This reference plant design is being developed in order to reduce cost, improve reliability, availability and maintainability. Other suppliers of gasification technology have made similar statements related to goals for improvement of the IGCC technology. Several years of operation will be needed after construction is completed to prove the reference plant design and verify the cost projections. This verification is projected to be complete many years after the needs of Southern Montana Electric begin to manifest themselves in July of 2008. And we have not seen any significant developments in the use of IGCC that would alter our initial views of the appropriateness of using IGCC technology as articulated in the alternative evaluation study. C131*

Response: Thank you for your comments. Appropriate information has been added to the FEIS.

17. *If the SME co-ops really think they need to build some sort of coal plant somewhere in their service area, their best option, in our view, is to build a coal gasification and combined cycle gas turbine generator at one of the mineheads like Decker or Nelson Creek. This would supply their members with Diesel and natural gas, as well as provide peak and alternative power for distributed wind generators which could be co-operatively owned and built as income producers on member's farms and ranches. This would be true energy independence for the immediate and mid-term period (say, three decades, the projected lifespan of the Highwood Station). And it wouldn't require the water rights provided by the City of Great Falls, which is the only tangible reason why SME might have wanted to build a CFB plant, here. IGCC can use as little as10-20% as much water per day (or per megawatt of power generation) as a CFB plant, and a lack of water is most of the reason why the Decker and Nelson Creek sites were rejected. C134*

    We would suggest to SME, its members and rural customers, that they pursue, instead, a coal gasification plant at one of the mine sites mentioned in the DEIS. Such a plant could produce diesel fuel, gasoline, natural gas substitutes, as well as electricity without the vast water requirements of a CFB plant. It would also have the capability to provide "peaking power" according to a daily schedule to firm up wind resources, and provide a substitute when output from wind generators is not available. When there is adequate or surplus wind blowing, an IGCC plant could quickly switch to diesel or hydrogen production for local use, or to be marketed as additional income for the co-op. Hydrogen can also be generated by surplus wind power and burned directly as fuel or used in fuel cells. This is the energy future which most experts envision. The quicker we begin making the transition to a hydrogen economy, the better it will be for all of us. C134

    Response: Water, while one of the primary considerations in the rejection of other sites like Decker and Nelson Creek, was not the only factor in site selection. The production of byproducts such as those cited is acknowledged as a potential benefit of IGCC. Hydrogen production from IGCC, wind power, or other power sources,

for subsequent use as a fuel is an area currently undergoing research, but its applications lie in the future. A gasification project has to be configured for specific products. It would not be feasible to switch back and forth between electricity generation and the production of hydrogen. If the facility were to be configured for both electricity and hydrogen, then more coal would have to be used to obtain both products or less of one product would be generated or produced. This would then lead to higher emissions.

18. *The DEIS discusses in Chapter 2 in Sec. 2.1.5.4 the potential alternative of Integrated Gasification Combined Cycle technology. The DEIS states that IGCC was reviewed by SME in its 2004 Alternative Evaluation Study as well as by RUS and DEQ in the DEIS and that the technology was eliminated from further consideration because it did not satisfy the criteria of cost-effectiveness and reliability. The attached Whitepaper on IGCC contains references to additional studies and articles and provides an additional analysis of IGCC that support the conclusion in the DEIS regarding IGCC. We request that RUS and DEQ incorporate the additional information from the Whitepaper into the IGCC discussion in the DEIS, including the following point:*

    > *"IGCC plants are very complex and are often down for repairs, resulting in a reliability factor of 80-85%, which is significantly lower than the reliability of a CFB plant (over 95%). During the period of down-time, it would be necessary for SME to procure power from the open market, resulting in higher energy costs as well as potentially increased air pollution, since the energy would likely be purchased from older, coal-fired plants with less efficient pollution controls. Thus, in addition to higher capital costs, the overall operating cost of an IGCC plant would be higher than that of a CFB plant and it could lead to increased emissions during the period of down-time." C128*

Response: Additional information on IGCC, as well as other alternatives, has been added to the alternative evaluation discussion for the FEIS.

ALT-306 ALTERNATIVES – OTHER POTENTIAL POWER PLANT LOCATONS IN STATE

1. *Why doesn't SME locate the power plant closer to the source of coal so that it doesn't have to spend the money to transport coal? C9, C45, C266*

   It is stated (page 2-53) that two 110 car coal trains per week will be used to transport coal to the Great Falls power plant site. It would appear that the alternative sites, which are much closer to the source of the coal supply for the power plant (Spring Creek and Decker Mines), could have an advantage with reduced costs of coal transport, and would reduce diesel railroad air pollutant emissions. We recommend that the evaluation of alternative sites address the following questions:

   > *What is the mileage along the railroad lines that these coal trains will have to travel to transport coal to the Great Falls plant site vs. the Hysham, Decker and Nelson Creek sites?*
   >
   > *Have the diesel fuel requirements and air pollution emissions and impacts from these coal trains, as well as the limestone and ammonia delivery aspects, been considered in the cost-benefit analyses and site selection criteria? C36*

   Response: The cost of transporting coal was one of many costs evaluated and compared by SME during the site screening and site selection processes. The cost advantage of shorter haul distances between the mine and the power plant with several alternatives was not enough to offset other disadvantages of these locations. Diesel fuel requirements were considered in evaluating the costs of alternative power plant locations. Air emissions from coal, limestone, and ammonia delivery were not considered significant.

2. *The DEIS states that alternative sites for the proposed power plant at Hysham, Decker and Nelson Creek are more expensive than the Great Falls plant sites, have a higher degree of risk associated with environmental permitting and approvals, and are subject to water disruption and lack of available water rights (pages 2-37, 2-38). The specific environmental permitting and approval risks at the Hysham, Decker and Nelson Creek sites are not clear, and should be identified and discussed in greater detail. C36*

   In terms of screening out other coal-fired plant sites, it appears that the most crucial criteria was large quantities of water necessary for the CFB process, versus IGCC requiring 40% less according to the EPA and DOE. What criteria established that the Hysham, Decker and Nelson Creek sites were more expensive? C80

   Response: Additional information from the Site Selection and Site Screening studies has been included in the FEIS.

3. *Why are we talking about Great Falls, when Colstrip is a lot closer? It seems it would be a lot more economical for everyone if they could just beef up the Colstrip plant. It would*

save on the rail transportation. They wouldn't have to build any new rails, and a lot of other places there. And the people that have been speaking have said that it doesn't bother them down there. C48

In my previous job doing NEPA, I concluded that when money is the driven force on a project, there's very little, very few alternatives selected. Okay. We heard another alternative here tonight, that is to expand Colstrip power plant. That's another alternative. That might be more feasible than building a plant here. C129

Response: Colstrip does not belong to SME, but to PPL Montana, so that this alternative would be that of purchasing power from another supplier who would have to expand their operations to meet SME's load. SME did not approach PPL about enlarging the Colstrip facility, but it has included PPL Montana in its efforts to meet its power needs through a traditional power purchase agreement. The costs quoted by PPL were market based and much higher than the project cost for HGS. Finally, not only is Colstrip owned by PPL Montana, but it is also an aging facility that would not have the same emissions control potential of the SME HGS facility. Further, the expense of modernizing Colstrip with up-to-date pollution control equipment, e.g., to meet Montana's new mercury limits, would further increase the cost of PPL power as compared to HGS.

4. *[At the Decker site] What is the estimated cost of 80 miles of new transmission lines and could SME apply for separate loans to build those lines under the REA? C80*

   Response: The 2004 Site Selection Study estimated that the cost of constructing new transmission facilities for the Decker site was approximately $87 million compared to about $25 million for new transmission facilities for the Salem and Industrial Park sites.

ALT-307 ALTERNATIVES – NO ACTION ALTERNATIVE

1. *I (we) support the No Action Alternative. C8, C9, C10, C20, C24, C50, C58, C76, C98, C171, C266, C320*

   The No action alternative is the only feasible alternative you should consider viable. C25

   Response: Thank you for your comments. The No Action Alternative must be considered but it does not fully meet the benefits, purpose and need for this project. The agencies must consider the Proposed Action and any reasonable alternatives that could be developed that would meet the benefits, purpose and need for this project and address the issues raised during scoping.

2. *Since the DEIS states, "The No Action Alternative avoids most direct adverse environmental effects," is not the DEIS admitting that the Proposed Option #1 is the only option that meets Montana Constitutional right to a clean and healthy environment? C8*

   Response: The No Action Alternative does not fully meet the benefits, purpose and need for this project. The permitting processes are designed to be protective of the human environment and therefore comply with the Montana constitution.

3. *I do not believe the contention that the original electrical cooperative group would not allow the SME splinter group to rejoin the cooperative. In the "real" world of profit–motivated businesses, SME's customers would not be left to "simply 'do without.'" C50*

   Response: Thank you for your comment.

4. *One thing the EIS I think failed on was showing the negative impacts if the HGS doesn't get built. Because if it doesn't get built, a lot of people are going to go back burning wood and coal. Power plants can burn coal and remove the pollutants. If residents didn't have electricity supplied by a power plant, they would go back to burning coal themselves and have no pollution control. I know a lot of our people would go back to coal. We've got a neighbor now that burns coal. On a cold winter morning, we can smell it a mile away. C57*

   I will remind you that for every trillion BTU that comes out of this plant, because electricity cannot be stored, there's a trillion BTU that is not coming out of older, less efficient plants. You alluded to that a little bit earlier, when you talked about, if there's an alternative, one of the alternatives is to do nothing. That has environmental impacts too in other places. C115

   TO DO NOTHING would be nothing other than an attempt to rely on existing, older models of coal fired generation. This can only result in greater emission problems than now exist from these existing plants. This would be an irresponsible and environmentally dangerous route to follow. C130

It is noteworthy that the need for a power supply for the 5 electric coops will not go away. If they are not supplied by the HGS, they will probably be supplied by another coal fired plant out of state whose environmental controls will not even come close to those proposed for the HGS. C306

Response: The EIS includes a discussion of a range of impacts that would occur if the No Action Alternative were implemented. No doubt there are some impacts such as people burning wood and coal to heat their homes instead of using electricity that were not discussed because it was not thought to have a high probability of occurring or on such a scale as to constitute a major environmental impact.

5. *The DEIS is correct in its first assumption in its no action alternative and recognizes that is not strictly necessary for SME to build this plant. The DEIS correctly states that it is unreasonable to assume that the city could not get power for its customers from some other source. C77*

   Response: Thank you for your comment.

6. *[With regards to the No Action Alternative] Where are the facts or detailed assumptions of how SME would impact other communities and generating sites? C80*

   Response: Section 2.2.1 discusses the assumptions made for the No Action Alternative. No specific communities and generating sites are identified because the power could come from a variety of energy sources and locations. Therefore, the discussion of the impacts was generalized.

7. *One of the alternatives considered in this DEIS is that of not building the plant. I believe the comments under that heading are also biased. While it does admit that not building it would result in no negative impacts locally, it goes on to say essentially that the power that we here will be using has to be generated somewhere, and wherever that power is generated will have negative effects on that locality. In the first place, this is very misleading and places a falsely negative light on not building the plant. Such power as we will be using in case of the plant not built is essentially the same as the power we are using now. Not building the plant will not increase a negative effect. C111*

   Response: Currently the power obtained by SME is primarily generated by hydroelectric dams. If they had to obtain power generated at other coal fired power plants, a portion of the environmental impacts generated by those plants would be attributable to SME's use. It is also likely that SME's need would result in the expansion of one or more of those power plants to handle the increased demand attributed to SME's growing need for power over time. Therefore, the No Action Alternative would result in impacts in other locations in order for other power plants to supply the electricity that SME's customers consume.

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ALT-308 PROPOSED ACTION – HIGHWOOD GENERATING STATION

1. *This coal plant will be very costly. It has already cost the tax payers of the city a great deal just to navigate the early stages of the presentation.* C1

   Response: Thank you for your comment. It is not the purpose of this EIS to address costs incurred by the city during negotiations with SME and its effect on tax payers.

2. *This project is both a short-term and a long-term economic boost to the community and the surrounding areas. It is something that is sorely needed in Great Falls. C2*

   This is a Montana project owned by Montanans, using Montana coal and limestone, to generate power that stays in Montana. C2, C5

   The plant that we're building is modeled after the Gilbert station, a power plant that is a CFB plant in Millville, Kentucky. It was recognized as the cleanest power plant in the United States last year. We will be, if not the cleanest, the second cleanest power plant, when we are on line. C6

   As the future home for this power plant, as well as being one of its owners, we're doubly concerned that it use the best available technology to provide the cleanest, possible coal generated electricity. We believe your draft environmental impact statement demonstrates that these goals will be met. C19

   The city is looking forward to a clean, modern electrical generating station to provide cost-based power for its customers and the customers of our co-op partners. We very much appreciate the Rural Utilities Service and the Department of Environmental Quality's efforts to oversee a fair and impartial process to make sure that our goals of the environmental protection are met. C19

   Southern Montana Electric G&T has expressed a desire to utilize Montana resources to the extent possible. As a result, it is possible that Rio Tinto Energy America's Spring Creek coal mine could become a major supplier of Southern Montana Electric G&T's energy needs. RTEA is committed to being a part of the long-term prosperity and outstanding environment of the State of Montana. Recent multi-million dollar investments in the Spring Creek Mine demonstrate RTEA's commitment for long-term investment in Montana, facilitating future supply of low sulfur, low mercury coal from the State. C114

   Response: Thank you for your comments.

3. *To approve construction of a CFB plant would violate Montana's Constitutional provision to provide a "clean and healthful environment." C8*

   I feel this plant is too detrimental to the land and the health of the Montana people. C60

Response: The permitting process and standards are designed to be protective of human health and the environment and therefore comply with the Montana constitution. SME has applied for permits and volunteered for a waste disposal license that will satisfy the processes and the standards implemented therein.

4. *The best CFB technology does not meet CAA requirements because even the best CFB technology no longer meets acceptable standards for maintenance of a healthy environment (BACT). C8*

   We do not like the reliance on coal--ugh--or the pollution that the plant will cause. C32

   The EIS for SME's HGS clearly shows that this power plant will be a substantial source of new and hazardous air and land pollution. This power plant does not comply with the directive of the NSR program to assure people "that any large new industrial source in their neighborhoods will be as clean as possible." C50

   I believe the Highwood Station proposes to generate unnecessary power at too high an environmental cost. The risk of pollution, particularly from mercury, in a productive agricultural area doesn't warrant building a coal-fired plant. C98

   I am concerned about the proposed Highwood Generating Project. The last thing Montana needs is more toxic air pollutants, mercury, and global warming pollutants added to our fragile environment. If we pollute our air, land, and water with a plant that is not needed and uses outdated technology, we endanger the health of Montana's citizens. And Montana cannot continue to become an economic powerhouse through outdoor recreation if we damage the environment. C113

   Response: The emission limits imposed under Montana's Clean Air Act would ensure that the air, land, and water are protected from criteria pollutants and hazardous pollutants such as mercury. Some greenhouse gases such as NOx are regulated. While CO_2, another greenhouse gas, is not regulated under federal or state law, SME has voluntarily committed to mitigations to offset some of the emissions.

5. *Because of this impracticality and expense of hauling coal on captive rail lines, we are concerned that once built, the Highwood coal plant will petition for an amendment in its air quality permit in order to combust the lower quality, more highly polluting lignite coal that is abundant in north central Montana. C20*

   Response: SME has never stated or implied to DEQ or RUS that it would use lignite at HGS. In the event that SME ever decided to pursue lignite, a lower BTU coal, as a fuel, it would have to apply for a modification to its air quality permit. Appropriate limits would be determined and the public would be allowed to comment on the permit modification before it was finalized.

6. *At the first October 13, 2004, "Open House" I was informed that the HGS would be "clean" coal burning by city officials and SME employees. Since then I discovered that CFB was an outdated technology and that there was a much cleaner coal burning facility available. Repeatedly, I have [brought] this to the attention of city government officials, but I was informed that the decision had been made for this type of plant. They felt that it could not be funded and to install the proper filters would add unwanted costs to the production of electricity. Other generation alternatives would not be competitive when they tried to sell the surplus out of state. City officials maintained that other alternatives to coal burning such as wind generation would be too expensive. C29*

   Response: CFB is not an outdated technology and it is capable of meeting all air quality emission standards. The proper emission control technology would be installed as a requirement of the air quality permit. The Proposed Action does include four wind turbines capable of generating 6 MW of electricity.

7. *I wish to express my opposition to the proposed coal plant near Highwood. In the March 2006 issue of the National Geographic, it was made clear that there are no clean coal plants. There are two in the United States that are relatively clean, but the cost is so prohibitive that that kind are not the ones being built. C33*

   Response: Thank you for your comment.

8. *Figure 2-23 (page 2-48) provides a map showing the plant sites and potential routes of rail lines, transmission lines and water pipelines. It would be helpful if an enlarged map or maps identified all project facilities and appurtenances and facility routings that would require ground disturbances, including proposed new roads, transmission lines, rail lines, underground cables, pipelines, wind energy facilities, etc., to allow clearer understanding of the locations and potential impacts of these facilities and routings. It would also be helpful if sensitive environmental features that may be impacted at these specific sites and routes were more clearly described and/or summarized (e.g., wetlands, springs, seeps, stream crossings, important habitats, etc.). C36*

   Response: DEQ and RUS find there is no need to include additional information to Figure 2-23 in the DEIS (now Figure 2-25 in the FEIS). This is a general overview map. This map in conjunction with the site plan maps and resource maps and figures in the EIS allow the public to identify the locations of all facilities and resources. Versions that are 11 x 17 inches are included in the CD version of the DEIS and FEIS.

9. *Why not build the stack 25 foot high instead of 400 and some feet high and dump the air pollution on these Great Falls people instead of up on us up here C47.*

   Response: The chimney must be a certain height in order for the emissions to disperse and meet ambient air quality standards.

10. *I live on Salem road approximately 2 miles from the proposed site and not one person*

has ever stopped by to talk to me about the sight? I can't believe nobody took the time to stop by and talk to the people that live on Salem Road? Amazing… I won't even get electric from the thing 2 miles down the road and yet I get to suffer with the pollution? Just does not seem fair. C61

My family farms east of Great Falls, adjacent to the Urquhart farm where the plant is going to be located. I didn't see any engineers out there estimating the environmental impact on the power lines that are going to be running through our place. We're going to have several of those towers, and they're going to impact the environment pretty good. But I guess in the name of progress, that's probably all right, but is this really progress? I believe it's a step backwards. C76

Response: Opportunities for public involvement have been made available to all local citizens. The exact location of the transmission line has yet to be finalized, but SME would have to obtain landowner consent. Based on state law, Electric City Power cannot compete with the default supplier for residential power. Until that changes, residents would not be able to take advantage of the power generated at HGS.

11. *How can this, the Salem or Industrial site options, be the 'best' when you consider that each has ten or more 'Adverse' classifications of 14 key areas examined? How many of the many alternatives screened out were categorized in the same manner and how many had fewer adverse findings? C80*

    Response: Just because an impact is considered to be adverse does not mean that the impact would be considered significant, long lasting or major. There are other criteria which have to be considered as well. The alternatives analysis is not done to the same level of detail with the alternatives considered and dismissed as with the alternatives considered in detail. However, the FEIS does include additional information regarding other sites in the Great Falls area and the rationale for their dismissal.

12. *How are the 'connected' actions figured into the final cost estimates, and has the increased costs of fuel been considered in ALL transportation costs, whether diesel fuel for trucks hauling limestone, or locomotives hauling coal into HGS? C80*

    What construction costs have increased and is the 515 million dollar estimate accurate, especially for labor costs, fuel costs and other commodities? C80

    Response: The economic analysis that SME is required to do for its loan application must include all of these costs, and these costs are continually reviewed by SME and periodically updated with RUS. Any increase in construction costs over the original estimates must be reviewed by RUS and accepted as part of the final loan approval process.

13. *How many construction and operator jobs are created by the four wind turbines at the*

HGS-Salem site and what economic benefit will that offer? C80

Response: No additional personnel for maintenance/operation of the wind turbines would be needed as the HGS plant staff would be utilized.

14. *How many easements has SME actually negotiated with local landowners? C80*

Response: Although the routes of the proposed transmission lines are needed for impact analysis, the knowledge of easement negotiation is not. Easements would be negotiated once a decision has been rendered by the agencies.

15. *Page 2-1, first paragraph, sixth line. The size of 250 MW should be noted as "net" capacity output. C128*

Page 2-1, first paragraph, last sentence. Add that an additional 6 MW of wind power will be a connected action. C128

Page 2-52, third paragraph, last line. Delete the word "…the…" in front of "authorities." C128

Page 2-56, the only paragraph, first line. Revise the maximum amount of water to be consumed from 3,500 to 3,200 gallons per minute. Also, revise the maximum amount of water to be consumed on a million gallons per day and acre-feet per year basis to agree with the 3,200 gallons per minute. C128

Page 2-57, the first two lines. Either delete "…either discharged as return flow or…" or add a clarification that the Proposed and Alternate Action will recycle the water to the cooling tower. C128

Page 2-57, third paragraph, seventh and eighth lines. Revise as follows "…and cooled as it is removed in the water cooled bed ash screw conveyors.…" C128

Page 2-57, third paragraph, ninth line. Revise as follows "…mixed with wastewater and wastewater sludge to control dust…" C128

Page 2-57, last paragraph, next to last line and last line. Revise as follows "….The sediment concentrate resulting from the raw water treatment process would be injected into the fly ash and bed ash pug mills to control dusting." C128

Response: These editorial changes have been incorporated into the FEIS.

16. *I'm the general manager of the Tongue River Electric Co-op in Ashland, Montana. We have about 10 to 12,000 residents in our area where we serve power. And we evaluated all of the options when BPA said that they would no longer sell us clean, environmentally sound power after 2011. And our engineering team came up with the Highwood Generating Station as the best option. This is a better option than buying power from*

PPL in Colstrip, and it's a much better option than buying coal-powered generation from out-of-state source where Montana DEQ can't study their emissions and do any controls. C142

Response: Thank you for your comment.

17. *The Missouri River is Great Falls' single most valuable asset for attracting business to this city—not for its power or water, but for the graciousness and beauty it gives to this city and for the recreational opportunities it affords us. The area of the river near the proposed coal plant site is used for whitewater rafting, canoeing, camping, fishing, and kayaking. It is the closest area to Great Falls suitable for some of these activities. C152*

Response: Thank you for your comment. Looking at the attractiveness of Great Falls for new businesses is outside the scope of this EIS. Impacts on recreation are discussed in Section 4.8 of the FEIS. The construction and operation of the HGS would not have any effect on recreational use of the Missouri River either above or below Morony Dam because of the HGS would not be visible from river. This would be due to a combination of the height of the riverbanks and the distance of the proposed power plant from the river.

ALT-309 ALTERNATIVE SITE – POWER PLANT AT INDUSTRIAL PARK

1. *Coal plants belong in industrial sites, not on prime rangeland adjacent to the Missouri River. This coal plant establishes a precedent for "finger annexation" of Cascade County agricultural property by the City, hardly something to be encouraged by the USDA. Indeed, if we have to have a coal plant, a more modern IGCC facility could be placed in the Industrial Park north of town that was created for this purpose. C20*

   Response: The annexation of industrial sites is an issue between the city and the county. The USDA had no involvement in this issue. The Industrial Park Site is fully analyzed in the FEIS in Chapter 4. The Salem site remains the preferred site. Refer to ALT-305 to review responses to other comments on IGCC. The FEIS contains additional information on IGCC technology.

2. *If the Industrial Park site is the final site selected, how will SME integrate wind energy (since Industrial Park has no wind turbines) into its power supply portfolio as set by the Montana legislature? C80*

   Response: SME would have to evaluate alternative sites to add wind power to its supply portfolio if the Industrial Park Alternative were selected.

3. *As with the HGS-Salem site, how many LOCAL workers would actually be employed of the 300-400 on the Industrial Park site at any one time, up to 550? C80*

   Response: Employment figures are identical at both sites.

4. *Why haven't the locations of the transmission lines, water and wastewater lines [for the Industrial Park Site] been determined? C80*

   Response: General locations were provided in the DEIS. More specific locations have been included in the FEIS (Figure 2-24).

5. *Where will fly and bed ash be sent to for disposal, since the county landfill is not an option? C80*

   Why will an ash disposal site NOT be constructed on the site and cannot a site be built there despite space constraints? C80

   Response: There is not sufficient space at the Industrial Park Site to construct a monofill as is proposed at the Salem site. The fly ash would be disposed of at a licensed landfill such as the High Plains Sanitary Landfill.

6. *What complications might occur with the proposed rail spur and existing rail lines leading to the malting plant (IMC), since there is an outstanding dispute on cost share of the IMC rail spur with the City of Great Falls? C80*

How will new track and railbeds be integrated with neighboring facilities like IMC, with it still disputing the cost of their rail spur, and how could this effect other commercial developments in the industrial park being planned? C80

Response: There is a cost to building a rail spur. SME would need to work with the City of Great Falls and other users of the Industrial Park to eliminate or reduce conflict.

7. *If the HGS-Salem site was disqualified, how would SME mitigate the noise and air pollution created by coal trains entering the city limits of Great Falls? C80*

   Response: Trains going through the City of Great Falls have to comply with regulations regarding speed, which is a factor contributing to the noise generated by train traffic. The noise analysis conducted concludes that the trains entering the Industrial Park Site would not generate noise exceeding the City of Great Falls Code requirements. Therefore, no noise mitigation would be required. Diesel locomotive emissions are regulated by EPA.

8. *Page ES-12, second paragraph, fourth line. Delete the phrase "… and wind turbines…." because no wind turbines are planned for the Industrial Park site. C128*

   Page ES-12, third paragraph, third line. "..…The Proposed Action would temporarily displace terrestrial wildlife…". Add to this statement the fact that the Industrial Park site has been developed and displacement of wildlife would be a low probability as the area has been partially developed, which previously displaced the wildlife. C128

   Page ES-12, third paragraph, line 7. "…as well as minor, localized short-term harm to aquatic biota from degraded water quality." This impact (and a couple others) described for the Industrial Park Site are not presented in Table 2-13, page 2-74. C128

   Page ES-13, last paragraph, second sentence. "…Construction of a power plant at this site would involve the direct conversion of agricultural lands to an industrialized facility with supporting infrastructure…" Also add that the industrial site is intended for this type of use. C128

   Response: The appropriate editorial changes have been made in the FEIS.

9. *There are also long term business planning reasons to group industry—transportation costs such as railroads and highways, land values, positive use of byproducts in other nearby plants, carpooling of workers, resource management. If this plant has too much pollution to be in one of these parks, then it has too much pollution period and less polluting technology must be utilized. C152*

   Response: The emissions from the Industrial Park Site would be regulated just as they would be from the Salem Site to comply with state law.

10. *I would like to suggest that the alternative site is more desirable as a site than the primary site near the Highwoods. This site would have no effect on the historic Lewis and Clark Trail and would have no adverse effect on the scenic Highwood Mountains….I see no reason why wind generators could not be included at this site as well. C251*

Response: Thank you for your comment. In the EIS, DEQ and RUS find that constructing the project at the alternative site, which is at some distance from the Great Falls Portage Route NHL, would avoid the level of adverse impact of the Salem site on the NHL. However, the HGS located at the Industrial Park site would still be visible in the distance from the NHL, much as the malting plant is today. After review of the Industrial Park site, it was determined that the available acreage at that site is not of sufficient size to also accommodate wind turbines.

ALT 310 SALEM SITE ALTERNATIVES DISMISSED

1. *Page 2-39, first bulleted paragraph, fourth line. Remove the phrase "…watering lawn areas, and…" C128*

   Page 2-40, fifth paragraph, third line. Please remove the option of "…or with wastewater discharged to the Missouri River from the plant site in accordance…" because inclusion of sanitary wastewater was not considered part of the option of direct return of wastewater to the Missouri River. The preferred option is to return the sanitary wastewater to the City of Great Falls. C128

   Page 2-40, last paragraph, last sentence. SME anticipates minimal operation and maintenance costs and does not believe we will need a licensed operator for a septic system, if one was installed. C128

   Page 2-41, second bulleted paragraph, last line. Add the phrase "…and routing HGS-related coal train traffic through the City of Great Falls, where some residents have expressed concerns about wait times at existing at-grade street crossings.…" C128

   Page 2-41, last paragraph. Correct the spelling of "High Plains Landfill." Also, add the fact that hauling ash to the High Plains Landfill will increase truck traffic through the City of Great Falls from the Salem Site as the landfill is North of Great Falls. C128

   Response: Appropriate editorial changes have been made in the FEIS.

STG-400 SOILS, TOPOGRAPHY AND GEOLOGY

1. *Proper Best Management Practices (BMPs), and other mitigation measures implementation and maintenance are very important, and impacts can be avoided or minimized if BMPs and other mitigation measures are properly implemented. Details should be provided for accomplishing these activities in the EIS. Also, it is important to specifically designate the entity (e.g., USDA RUS, SME, contractors, or some combination) in charge of BMP implementation, which will have specific enforceable accountability. In addition, the BMPs, mitigation measures and other related activities require inspection, documentation and record keeping. A "paper" documentation trail must exist to determine what was monitored, inspected, maintained, and completed. All management, mitigation, and monitoring should be verifiable, and an agency/entity needs to be held accountable for performance oversight, throughout the entire project construction and operating life. C36*

   Response: During the construction period, the plant will require coverage under the General Permit for Storm Water Discharges Associated with Construction Activity. This permit is issued under the Montana Pollution Discharge Elimination System administered and enforced by the DEQ Water Protection Bureau. A site specific Storm Water Pollution Prevention Plan specifying BMPs is required. Once construction is completed, the plant will require coverage under the General Permit for Storm Water Discharges Associated With Industrial Activity or a site specific Industrial Permit. These are also issued by the same DEQ bureau. Recordkeeping and reporting are also required by all these permits and the sites are inspected by trained DEQ staff. See also Section 4.3.2.1 of the DEIS for a further discussion.

2. *Appendix J talks about the definition of significance when it deals with soil contamination. And I see under major it says leaching of contaminants causes water quality degradation and health risks as defined for surface water and groundwater degradation major. I would say that this is not an adequate definition of significance when it comes to what is going on with soil contamination in the area of the plant. And, as a result, the DEIS is insufficient. C78*

   Response: SME submitted a No Migration Demonstration for the ash monofill to DEQ. The information submitted demonstrates that based on the unit design, the nature of the ash, and the soils and hydrogeology of the site, there would be no migration of contaminants from the waste management unit to the underlying aquifers. Class II landfills that meet the requirements of the No Migration Demonstration found in ARM 17.50.723 are exempt from liner and groundwater monitoring requirements. SME has voluntarily agreed to construct recompacted clay liners in the waste management cells and to monitor the underlying aquifer as part of an ongoing demonstration. Since no groundwater contamination is anticipated to occur, there would be no degradation. As the ash dries, it would form a hard, lightweight cover similar to concrete; in this form, the ash would not be subject to wind erosion and offsite deposition. Also, see response to Comment 3-400 below regarding deposition from chimney emissions.

3. *We have in this area some of the finest farms growing some of the most important crops, wheat, in the area. In fact, it's known as the Golden Triangle. I would submit that unless there are measures of what the soil has by way of contaminants that would be coming out of this plant so you can compare it to the contaminants that are coming and falling from this plant, you really don't have an adequate measure to determine whether or not what the plant is doing is significant or not. I know for a fact, because I'm an attorney, that I have several major clients within five to ten miles of this plant that do organic farming. What would be the effect on their organic farming or organic cattle as a result of the things that are going to be dropped into the ecosystem? This hasn't been answered by the DEIS, and to me it is a major failing and needs to be considered. C78*

   Response: Montana's PSD permitting regulations require that the impacts of a proposed plant's projected emissions on soil and vegetation be evaluated. The primary NAAQS for criteria pollutants were developed to provide adequate protection of human health, while the secondary standards were designed to protect the general welfare, i.e., manmade and natural materials including soils and vegetation. EPA's guidance on new source review states: *"For most types of soils and vegetation, ambient concentrations of criteria pollutants below the secondary national ambient air quality standards (NAAQS) will not result in harmful effects."* The results of the air quality analysis demonstrate that the impacts of the HGS plant would be less than the PSD modeling significance levels, which are more conservative than the NAAQS and MAAQS. Therefore, our understanding is that the operation of the proposed plant should not have an effect on the organic status of the farms.

4. *What provisions have been made for not only soil contamination monitoring, but for surface water, particularly as airborne contaminants could be landing on soil and surface water downwind and downstream of either site? C80*

   Because soils contamination from chimney emissions is not expected to be a significant problem, no soils monitoring in the vicinity of the HGS is proposed at this time. In addition, because there is no discharge of treated plant effluent into surface waters, no surface water monitoring is proposed.

5. *Page 4-13, second paragraph under Operation, fourth line. Add language to the existing line which states "…could flush heavy metals such as arsenic and lead…" which indicates that the leaching tests on the ash show no to very low concentration of specific metals will leach and if any leachate was produced, it would be magnitudes lower than the standards for drinking water. C128*

   Response: The pertinent text in Section 4.3.2.2 has been changed to read as follows:

   "…The water would run off these piles or through the ash waste and could flush heavy metals such as arsenic and lead, which are inherently present in coal in trace amounts, into nearby soils where they could be adsorbed as the water slowly infiltrates down through the soil column. <u>Leaching tests on the ash from proposed</u>

P-0019750

coal sources show no to very low concentration of specific metals will leach and that if any leachate was produced, it would be magnitudes lower than the standards for drinking water. ~~However,~~ Additionally, given the great depth to groundwater and the impermeability and thickness of clayey soils on site, the potential for extensive contamination problems is regarded as very low." Go to Section 4.13.2.2 for more information on ash disposal.

WAT-500 WATER RESOURCES

1. *Both proposed plant locations drain toward the Missouri River and are subject to wind erosion (causing particle distribution), thus posing undue risks both to the Missouri River and to the city of Great Falls. Therefore, these locations cannot meet Federal standards. There are already several toxic waste sites in the Great Falls area; we need to concentrate on cleaning these up, not creating another. C8*

   Both the proposed landfill at the Salem site and the Montana Waste Systems landfill meet all Federal and State locational standards.

2. *Some confusion exists about water discharge plans. At the Havre DEIS hearing, SME officials twice testified that no waste water would be emitted in the plants' operation, except the typical human waste products. Yet, three months previously SME Representative Tim Gregori said that waste water would be processed by the Great Falls Municipal Water Treatment Plant (WTP). It is doubtful that the WTP has the capability adequately to eliminate mineral and other water-borne and water-soluble contaminants. Whether discharge from the WTP will fully comply with these regulations needs to be verified. Also, the possibility of accumulation over the life of the HGS of toxic material behind the Missouri dams is a concern that needs to be examined. C8*

   Is the R.U.S. going to permit water discharge containing heavy metals, poisons and other pollutants from the coal plant to enter the City of Great Falls sewage treatment plant, which will be cycled by the sewage plant and returned to the River? C14

   Where is a list of all the chemicals discharged into the water being sent to the City? What percent of these chemicals will be discharged from the sewage treatment plant into the Missouri River once the Highwood Plant is operational? Does the City have the expertise, equipment and the permits to handle this type of industrial pollution? C14

   Pretreatment requirements for the city's wastewater treatment plant, including limits on heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, zinc), and wastewater sampling and monitoring would need to be met. We are pleased that the DEIS discloses HGS requirements under the Industrial Pretreatment Program (page 4-24). We note that the generating station will need to meet the pretreatment standards for new sources, Steam Electric Power Generating Point Source Category, 40 CFR 423.17, and will need to obtain an Industrial Storm Water Permit from the Montana DEQ (contact Mr. Brian Heckenberger of MDEQ in Helena at 406-444-5310 regarding storm water permits). C36

   How would SME reduce wastewater discharges into the city's treatment facility if it ever exceeded the maximum allowable industrial loading numbers for heavy metals? What is the possibility of mercury residue being processed through the city's treatment facility? C80

P-0019752

Response: The HGS would meet the pre-treatment requirements of the WTP. The estimated effluent quality is substantially lower than the maximum allowable limits, which would minimize the need for pretreatment most of the time. The estimated mercury loading is 0.002 lb/d compared to 0.39 lb/d for the maximum allowable industrial loading limit. In addition, the WTP has to comply with its MPDES permit discharge limits; RUS does not have permitting authority regarding discharge limits. This would prevent the discharge and accumulation of toxic substances into the Missouri River. The plant operators are licensed and certified in the operation and monitoring of the waste water treatment plant and would be capable of handling the additional input of the effluent from HGS regardless of its chemical constituency.

3. *The DEIS Alternatives #2 & 3(Proposed Action and Alternative Site) propose to usurp about 80% of the water rights on reserve for the City of Great Falls. To squander these rights on an archaic coal plant is to do a considerable disservice to the citizens of Great Falls. C8, C125*

   It is also reasonable to ask why the plant is being sited in Great Falls instead of the Billings area. The primary reason appears to be the availability of water, thanks to the generous water rights owned by the City of Great Falls. The City is understandably anxious to prove up on these water rights, since in these drought stricken times the value of the water is readily apparent. The coal plant will use up to 3200 gallons per minute (half of what the entire populace of Great Falls uses on a winter day). Most of the 1.7 billion gallons per year will be evaporated, making it unavailable for agriculture and contributing to visual haze. It is surprising to us that the Department of Agriculture, knowing the importance of water to farming, would collaborate in this unnecessary squandering of our precious water resource. It is also surprising to us that our City, with its hefty water bills to area consumers, would sell the water to a coal plant at markedly reduced rates. Wouldn't it be better to use this water instead to support a biodiesel or biomass electric generating facility? Won't the use of this water by SME be detrimental to downstream agricultural, tourism, fishing and barge industry interests? If a coal plant has to be built, wouldn't it make more sense and in the end cost far less for SME to purchase ranches with ancient water rights for a location along the Yellowstone River, which is closer to both the coal and its customers? C20

   I hear that plant would also waste more than a billion gallons of water from the Missouri River every year. With the climate heating up, (this is the hottest summer I can remember) people will need water to drink and the Missouri could be a vital source. C35

   The HGS will use far too much water from the Missouri, where do they get the water rights unless you guys give them to them. The DEIS doesn't address water usage concerns adequately. C55, C58

   The 5,600 acre-feet per year that the plant would use would meet the municipal demands of 28,000 people. The economic analysis in the EIS relies upon a substantial population increase to serve as a market for the power produced by the proposed plant. But water *availability is already a major factor limiting population growth in Montana, as evidenced by the increasing difficulties encountered by subdivision developers in obtaining new water rights. Thus, the water rights claimed by SME for the power plant could conceivably preclude the population growth needed to make the same plant economically viable. Although the water right from Morony Reservoir is legally available for use by the proposed power plant, the EIS should consider whether that is really the most beneficial use of that water. C71*

At 3,200 gallons per minute (DEIS, page 4-22), Highwood would be removing 1.7 billion gallons from the Missouri River each year – enough to meet the domestic water needs of 26,000 people. C95, C134, C165

Water is too precious and there are many downstream needs for the water that would be consumed by this power plant. The EIS states that this plant could use up to 3500 gallons per minute or 5600 acre feet per year. When I get a water right for a well the state limits me to .017 acre feet per cow per year. This would be enough water to supply over 329,400 cattle with water for one year. We need to conserve water, not unwisely waste it. C104

The waste of water begins with mining the coal, which in Montana means mining the aquifer, and drawing down or polluting or otherwise damaging the wells and springs so vital in our semi-arid country. Using Missouri River water within the plant (thanks to the water rights of the City of Great Falls) to boil water to steam to spin turbines, and for cooling purposes, means that nearly 90% of that water will evaporate away. Each day the Highwood plant would consume about 4.6 million gallons of water -- half of what the entire City of Great Falls uses on a winter day. C155, C334

The consumption of the water from the Missouri River will adversely affect our community which depends not only on agriculture but also on the recreational aspects of the river. The river is our lifeline. C175

An annual consumption of 1.7 billion gallons of water from the Missouri River is reason enough to say No! C239

We just came out of a 10-year drought. Is taking 1.7 billion gallons of water from the Missouri a smart decision? C302

I doubt whether or not there is sufficient water available for this type of power plant. Does the developer(s) have the necessary water rights? Have those rights been adjusted? I cannot believe there have been no water rights objections filed. DNRC needs to conduct a separate EA, at a minimum strictly assessing the water right or change of use for a water right. C312

As mayor of Fort Benton, a small community 20 miles downstream and downwind of the proposed generation facility, and as a farmer who relies on the Missouri river for water necessary to irrigate my crops, I have [a] serious concern about increased consumption *of water from the Missouri. C315*

The news media continues to predict that the next crisis we will face is water shortages. An evaluation of the long-term economic sense of utilizing CFB technology which requires considerably more water than the utilization of IGCC technology would certainly be warranted. C318

A second concern to me is the use of water in the process. Water is scarce in these parts and use of it in the manner indicated is contrary to the best use of a scarce commodity in our state.... C325

It appears that use of Missouri River water is the pivotal reasons for this plant being built at G.F. C333

Water is a precious resource in our region. In an over-appropriated Missouri River Basin, we must be especially cautious and conservative in how we allocate new uses. What is the value of this water, and what future needs (population growth, bio-energy crop production, added-value resource industries, recreational fisheries, etc.) will be precluded by sequestering it off to a polluting power plant? The DEIS is silent on this issue. C334

Response: The City of Great Falls has applied to the Department of Natural Resources and Conservation (DNRC) to change its municipal water reservation to accommodate water use at SME's plant. The application was public noticed on June 6, 2006, and one objection was received. A contested case administrative hearing is scheduled to take place in January, 2007. DNRC will base its decision to grant or deny the City of Great Falls' water right change application on the statutory criteria found in MCA 85-2-402. Among other criteria, the applicant is required to prove that existing water rights will not be adversely affected by the proposed changes. However, an applicant is not required to prove a lack of adverse effect to future appropriations of water.

SME's proposed appropriation of water includes a flow rate of 7.13 cubic feet per second, and a volume of up to 5,161 acre-feet per year. This appropriation will utilize up to 62 percent of the flow rate and 86 percent of the volume of Great Falls' municipal reservation of water. Per the July 1, 1992 Board of Natural Resources and Conservation's Final Order in establishing water reservations in the Missouri River basin, the term of applying the City of Great Falls' reservation to beneficial use is to the year 2025.

Water rights in the State of Montana are operated under the prior appropriation system. Every water right/reservation is assigned a priority date, and that date, along with water availability, dictates the period when a water right can be exercised. If the City of Great Falls is ultimately successful in obtaining authorization to add SME's plant to its water reservation, the plant will operate under a 1985 priority date. In the future, if senior water users are being adversely

affected by SME's diversion, HGS may be shut down until water conditions improve.

4. *If the water must be taken out of the Missouri River and mostly evaporated by the coal plant, why doesn't the R.U.S. insist that "Discharge" water from the City of Great Falls Sewage Treatment Plant be used before it enters the River instead of taking out water downstream (which includes a substantial contribution from the much purer water from Giant Springs)? C14*

   PPL Montana would prefer that water not be removed upstream of its hydroelectric dams. Taking water from the water treatment plant would remove water from those dams although not a significant volume in terms of flow as described above in WAT-500-3. The quality of the water from the wastewater treatment plant would require additional treatment to be suitable for use in HGS. SME would need to install an additional and longer pipeline to pump water back to HGS in order to use treated waste water from the plant. The volume of the treatment plant would not be sufficient to meet HGS needs requiring a second pipeline to bring water from the Missouri River.

5. *Even if ash is not dumped directly into the river, how is this going to affect the groundwater? C27*

   We recommend additional mitigation measures for protection of the Kootenai aquifer underlying the proposed ash disposal and evaporation pond sites. This could include a poly liner above the compacted clay layer at each site, as well as installation of a leachate monitoring/collection system beneath the liner. This would allow collection of leachate should groundwater monitoring show leachate contamination. Since the Kootenai aquifer is used for public water supply this would appear to be a prudent course of action, as it is difficult to remediate an aquifer once it becomes contaminated. C36

   In my opinion, the consideration of water-quality impacts in the EIS verges on cavalier. To say that clay soils and liners will protect water quality from leachate and runoff from boiler blowdown, coal piles, cooling process and boiler cleaning wastes, and fly ash is to ignore acres of grossly polluted ground water at Colstrip. But unlike Colstrip, which is located far from surface water, contaminants from the proposed Highwood facility would discharge almost directly into the Missouri River. Neither clay soils nor compacted clay liners have ever been shown to be leak-proof…. If developed, the proposed facility would almost certainly pollute both ground and surface water – an inevitability that the EIS casually discounts. C71

   …the risk of potential pollution of groundwater cannot be ignored. C325

   Response: In the "No Migration Demonstration" submitted to the DEQ as part of the Solid Waste Management System License Application by SME, data were presented to the DEQ on the test results for the hydraulic conductivity of the ash

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and the soils, the concentrations of the metals in the ash and in leachate produced from the ash. Based on these numbers, a numeric model was run using a worst case scenario. Even using these conservative conditions, solute concentrations are below the limit of detection at a point 60 feet below the ground surface for 65 years. The glacial tills beneath the site are estimated at 110 feet thick. Then it is another 140 feet through a confining shale layer to the uppermost water in the Kootenai Formation. For modeling purposes, the top of the Kootenai was used as the top of the aquifer, adding another conservative parameter. No liner was included in the model.

Since the ash produced at the proposed plant would be in a dry form rather than a wet slurry like some other plants, the hydraulic loading on the liner is minimized. The ash would have a hydraulic conductivity of about 0.0158 feet per day and the glacial till clay was assigned a value of 0.00023 feet per day, an order of magnitude faster than the lab determined permeability. The metal content of the ash leachate (TCLP) is less than 0.5 parts per million for all metals except barium, so the concentration of 2.0 parts per million, a little above the highest barium concentration of 1.6 ppm, was used in the model. The TCLP limit for barium is 100 ppm. The highest mercury concentration was 0.0024 parts per million and the TCLP limit is 0.2 parts per million for mercury. Total metals in the ash are less than half of one percent.

In short, the model demonstrates that the landfill would meet the requirements that the groundwater at the point of compliance will not be contaminated for the life of the landfill units and the post closure care period. (See ARM 50.723(3).)

The nature of the soils at the Salem site and the confined nature of the Kootenai aquifer preclude the need for a liner for the landfill; however, groundwater monitoring wells would be installed to verify that no contamination of the aquifer beneath the plant occurred.

6. *The two figures showing ground-water elevation contours for the Kootenai Formation (figure 3-9) and Madison Limestone (figure 3-10) show identical contour lines with the same observation wells and ground-water elevations indicated on the figures. C28*

   Response: Thank you for noticing this typographic error. The Figure 3-9 for the Kootenai has been corrected.

7. *The reference to figure 3-8 is incorrect; presumably the reference should be to figure 3-11. C28*

   Response: Thank you for noticing this typographic error. It has been fixed.

8. *It would benefit the public and reviewers if the locations of the Salem and Industrial Park sites, as well as major streams discussed in the text, were shown on figure 3-11. C28*

Response: Figure 3-11 has been revised to include the two sites, Missouri River, and Belt Creek.

9. *Pumping 3,200 gpm through a 20-inch diameter pipeline will produce an intake velocity close to 3 feet per second, far exceeding the 0.5 feet per second impingement velocity that is the maximum allowable, according to the draft EIS. C28*

Response: The diameter of the intake screen to be installed on the pipe extending into the river would be sized to meet the impingement velocity requirement and address Clean Water Act requirements.

10. *While the DEIS indicates that "there would be minimal loss of wetlands and floodplains," wetlands delineations satisfying Section 404 of the Clean Water Act were not conducted in the HGS project areas during field activities. Moreover, elsewhere in the DEIS it is stated that there would be direct loss of wetlands, and that these impacts would be "adverse and somewhat significant." In addition, a formal wetland mitigation plan has not been developed. We are concerned that avoidable and/or unmitigated impacts may occur to wetlands, and recommend that wetlands be delineated throughout the project area and that a detailed Wetland Mitigation Plan be prepared and implemented to assure that adequate replacement of lost wetland functions and values occurs. C36*

How would SME mitigate the loss and degradation of floodplain and wetland areas? C80

Response: These are non-jurisdictional wetlands and do not require delineation according to Section 404. These sites are small depressions in the cropland that hold water a bit longer than surrounding land.

The quoted statement in Section 4.4.4 for the Salem site has been changed to read as follows: "There would be minimal loss of non-jurisdictional wetlands ~~and floodplains~~ from these actions, and …" A similar statement for the Industrial Park site has been modified to read: "The notable exceptions are the impacts associated with the installation of the longer water intake pipeline, which could potentially affect a greater area of non-jurisdictional wetlands ~~and/or floodplain~~, and the …"

The quoted statement from Water Resources in Section 4.17 has been modified to read: "Direct loss of wetlands and floodplains adjacent to the Missouri River would result from the construction and operation of the water intake structure in the Morony Reservoir and the installation of transmission line and pipeline within the River corridor. These impacts would be temporary, adverse and ~~somewhat~~ insignificant."

During site construction, these soils can be salvaged and new depressions would be immediately constructed outside the plant and the railroad loop. Since SME plans to plant all disturbed areas with native species, these areas would also be planted to native species. Approximately five sites, totaling 4.6 acres of these non-

jurisdictional wetlands, are located within the proposed plant site. A landscape architect under contract to SME is currently in the process of developing a site landscaping plan to meet county requirements and address visual effects.

11. *The DEIS indicates that the HGS will require a Clean Water Act 404 permit from the U.S. Army Corps of Engineers, and a Clean Water Act Section 401 authorization from the MDEQ. When a 404 permit is required for a proposed project, EPA generally recommends that a draft 404(b)(1) analysis for the preferred alternative be appended to the FEIS to better assure that the preferred alternative has been adequately evaluated in accordance with 404 (b)(1) requirements. This will help assure that 404 regulatory requirements are properly integrated into the NEPA process as directed by the CEQ regulations (40 CFR 1500.2(c)). C36*

    We also recommend consideration of a single 404 permit to cover the dredge and fill permitting for the project. We feel this is preferred over issuance of a combination of numerous individual and nationwide permits, since it may allow for improved cumulative effects evaluation as well as reduced paperwork and permit processing time, and assure that all necessary permits for dredge and fill activities can be obtained for the full project. Although we realize if the project is to be constructed in several segments over varying time periods it may be appropriate to permit each construction segment individually. C36

    Response: SME submitted a joint application to DEQ and the Corps of Engineers as well as Cascade County in March 2006. This application covers all water related permits including the 404 permit. The 404 permit for the HGS would cover the water intake structure in Morony Reservoir. The pipeline would not be installed in the drainage going down into the reservoir but rather along an existing road along a ridge and slope. No wetlands, riparian vegetation, or soils at the water's edge would be disturbed, because the pipe into the river would be installed underground.

12. *The EIS should evaluate potential project effects on any function and water quality impacts to potential drinking water aquifers. EPA suggests ensuring that plans for any development areas with the potential to impact any potential drinking water sources are coordinated with the MDEQ and be evaluated for compatibility with Montana Source Water Protection plans. The SME should contact the MDEQ Source Water Protection Program staff, which has developed and maintains a database of source water protection areas to identify areas within or downstream of the project area (contact Joe Meek with MDEQ in Helena at 406-444-4806). Typical databases may contain GIS and Access information for the watersheds and aquifer recharge areas, the most sensitive zones within those areas, and the numbers and types of potential contaminant sources identified for each system. C36*

    Response: The existing environment is described in Sections 3.2.6 and 3.2.4 for groundwater and surface water respectively. Impacts to groundwater and surface water are addressed in Section 4.4, Water Resources and 4.13, Waste Management. See the response to WAT-500-5 above for more information. There are no

anticipated impacts to the aquifers underlying the HGS and, therefore, no impacts to drinking water wells developed in that aquifer.

13. *The DEIS states (page 4-18) that during site preparation and grading activities, soils in the construction areas may become exposed, rutted, and compacted, which has the potential to increase water yields from sites, concentrate and channelize sheet flow, increase erosion rates, and increase sediment delivery to nearby waterbodies. This could result in transport of small quantities of sediment and nutrient loadings to the Missouri River or its tributaries, which as already noted, are currently impaired by excess silt and nutrient concentrations.*

    We note that the latest schedule for TMDL development in Montana indicates that Belt Creek and the affected portion of the Missouri River are within the Missouri-Cascade TMDL Planning area, with TMDLs due from 2009 to 2012, http://deq.mt.gov/wqinfo/TMDL/TMDLSchedule2006.pdf .

    The EIS should describe how the proposed project might affect the impaired streams, particularly how the water quality parameters causing the impairment and 303(d) listing may be affected. It is important that the proposed project avoid aggravating water quality impairment and be consistent with TMDLs and Water Quality Restoration Plans being prepared by the State and local watershed groups. Proposed HGS construction and operation activities should be discussed with MDEQ and any local watershed groups that are involved in preparing TMDLs and watershed restoration plans for the impaired streams. C36

    Response: The DEQ Water Protection Bureau is required to consider TMDLs when issuing any permits under the MPDES permit process as discussed in the response to comment 1-400. SME is not proposing to discharge treated effluent into the Missouri River, which would require consideration of the TMDL. SME would only be required to control storm water during construction and operation of the HGS. Best management practices (BMPs) would be required to contain all silt and eroded soil on site and prevent its migration to and deposition into the Missouri River and any drainages between the site and the river.

14. *The fact that Great Falls needs to use its water right or lose it is very important to this community. C53*

    One of the hurdles that we have faced and continue to work on is what we are going to do about water for the power plant. Well, the City of Great Falls, fortunately, had water reservations. And we were able to work a deal out with them to purchase an option on a water reservation, and then they could turn that into a water right. So that was a mutual benefit for both of us. I should also say that there was concern about the amount of water that we were going to take out of the Missouri, and that is just a falsehood. We're not using that much water. 3100 gallons per minute just doesn't have that much of an impact on the Missouri. C159

Water has become a big issue among the citizens, yet from my investigation of the City of Great Falls' water rights, it turns out to be a non issue. The DEIS substantiates my own research that a present water right reservation if going to be used that will further patent that claim to the water advantage of the citizens of Great Falls. This will not have any effect on our historic water rights. C306

Response: The July 1, 1992 Board of Natural Resources and Conservation's Final Order for the Missouri River Basin establishing water reservations above Fort Peck Dam states that the term of the City of Great Falls Water Reservation is to year 2025.

15. *We decided what we would do with the waste water. The best thing we could come up with to do is to pipe it back to the city treatment center, so we don't have to send any dirty waste water back to the Missouri. C159*

    Response: Thank you for your comment.

16. *As a comparison, the proposed Highwood facility would withdraw up to 0.77 gallons per kilowatt-hour (gal/KWh), and it would consume 0.61 gal/KWh. Thus, the proposed facility's water consumption rate would be among the highest of all fossil-fueled power generating plants. (As a sidenote, the proposed Silver Bow Generation Project, a 500-MW natural gas-fired combustion turbine plant, would consume about 0.29 gal/KWh and the proposed Roundup Power Project, a 780-MW pulverized coal-fired power plant, would consume about 0.08 gal/KWh.) Therefore, less water-consuming means of producing energy, even with fossil fuels, are readily available and ought to be prioritized in Montana, where water is not a plentiful resource. C71*

    Response: The agencies have to evaluate the proposal as submitted by the applicant. Alternatives can be reviewed as well, but if the proposal can meet all applicable standards and the resources needed for the proposal are available, then the agencies do not have the authority to mandate alternative technologies. The agencies could mandate alternative pollution control devices needed to achieve applicable standards and permit limits.

17. *The draft EIS for the proposed Highwood Generating Project is woefully inadequate in its treatment of water-resource issues. The project could seriously threaten water quality and unnecessarily exacerbate conflicts over water quantity. C71*

    Response: The DEQ licensing and permitting processes are designed to protect water quality and the City of Great Falls has valid water rights.

18. *Since Fort Peck and the Corps of Engineers have filed water rights claims, what consideration has been given for 'downstream' states like Missouri and Kansas who might petition the federal government to not allow any federal funding to any project on the Missouri River that might reduce downstream flow, vital to their own states recreation, commerce, barge traffic and irrigation? C80*

Response: The amount of water proposed to be used at SME's power generation facility is miniscule in comparison to the flow of water in the Missouri River at Missouri or Kansas. No consideration has been given to impacts to these downstream states in this proceeding. It would be purely speculative to guess how downstream states may react to a funding issue, and RUS funding decisions may not be based on speculative actions.

19. *What actual contracts [for the exchange of water rights] have been signed by SME with the City of Great Falls and where is the actual contract for the public to examine? C80*

Response: The state is not aware of the contractual arrangements between the City of Great Falls and SME. The City of Great Falls has filed an application to add a point of diversion and place of use to its municipal water reservation to accommodate SME's proposed power generation facility.

20. *The high sodium content in Decker and Spring Creek coal causes deposits in the generating plant that have to be removed by blasting. The fluidized bed process will be impacted by the high sodium content of the coal. The high sodium content in the coal is what made the ash problem more serious at Colstrip. Sodium is highly water soluble and rain will percolate through the ash pit and cause the sodium to migrate. The high sodium in the coal will also add more sodium to the water treatment facility. Can the city water treatment facility handle the additional sodium load from this water? What will the sodium level of the discharge water be? The Tongue and Powder Rivers and Rosebud Creek currently have salinity and sodium standards set. The Missouri will not be protected from sodium and salinity without these standards. C104*

Response: The industrial waste water that would be sent to the city's waste water treatment plant is water that would be left over from the cooling process. It would not come in contact with the coal or the fly ash. Therefore, the sodium content in the coal or the fly ash is not an issue with regards to the waste water treatment plant. Any sodium left in the fly ash would remain in it in the ash monofill. The ash would be handled dry, rather than wet as is the case at Colstrip. This would minimize any impacts to groundwater. See 5-500 above for more information regarding infiltration into groundwater. In addition, sodium preferentially bonds to clay particles and the depth of the clay till under the proposed plant is at least 60 feet based on soil borings and is more likely nearly 110 feet based on information from the nearest wells. The sodium would be partially responsible for how the ash sets up a crust when it gets wet, preventing wind erosion of the material.

21. *Page 4-20, fifth paragraph, sixth line. Revise the size of the potable water pipeline from "…12" ductile iron or HDPE…" to "…6" ductile iron or HDPE…". C128*

Response: This change has been made as requested.

22. *Page 4-25, fourth paragraph, first sentence. This sentence states "if the industrial park site were to be chosen as the location of the power plant, it would almost certainly be*

annexed into the city…" Comment: It has not yet been decided whether either site would be annexed into the City. C128

Response: This sentence has been modified to read as follows: "if the industrial park site were to be chosen as the location of the power plant, it ~~would almost certainly~~ could be annexed into the city…"

23. *Page 4-27 states, "The power plant would discharge a maximum of 811 gal/minute of wastewater. The operation of the power plant would result in impacts that would be of moderate magnitude, long term duration, and medium extent, and have a probable likelihood of occurring. The overall rating for impacts on water resources from the operation phase of the power plant would be adverse, and while impacts would likely be non-significant, there is a potential for them to become significant." There are two problems with this statement. First, the magnitude of impacts to water resources is not substantiated in the text. For instance, there is no quantitative prediction of water impacts. What is the basis of the conclusions for impacts? Secondly, as mentioned in earlier comments, what does it mean that there is potential for impacts to become significant? This statement requires substantiation if it is going to be used. C128*

    Response: A review of the water resources analysis shows that the impacts do not meet the criteria for moderate magnitude as defined in Appendix J. Therefore these statements have been rewritten as follows: "The power plant would discharge a maximum of 811 gal/minute of wastewater. The operation of the power plant would result in impacts that would be of ~~moderate~~ minor magnitude, long term duration, and medium extent, and have a probable likelihood of occurring. The overall rating for impacts on water resources from the operation phase of the power plant would be adverse and ~~while impacts would likely be~~ non-significant~~, there is a potential for them to become significant~~."

24. *Page 4-132, Water Resources Section, last sentence. "The subsequent discharge of wastewater into the City of Great Falls for treatment at its existing wastewater treatment facility would result in adverse and moderate in magnitude impacts." What is the basis of the conclusions for impacts? There is no quantitative prediction of water impacts presented and the qualitative discussion on page 4-23 suggests that discharges would be within allowable limits as stated, "Among several compounds, trace amounts of the heavy metals arsenic, copper, zinc are expected to be present in the wastewater discharged from the plant. There is a possibility that extremely low concentrations of lead and mercury may also be present in the discharged wastewater. However, the concentration of all regulated compounds in the power plant waste stream would be below the maximum allowable discharge concentrations." C128*

    Response: The water resources analysis has been reviewed and this statement has been revised accordingly: "The subsequent discharge of wastewater into the City of Great Falls for treatment at its existing wastewater treatment facility would result in adverse ~~and moderate in magnitude~~ but insignificant impacts."

AIR-600 AIR QUALITY

1. *Paramount among concerns about the project is its impact on air quality, not only locally, but on global conditions. C1, C335*

   I want to make a simple analogy, and that is comparing modern coal-fired plants to modern cars. We have tighter environmental rules on our cars every year. Coal-fired power plants have the same tighter rules. Every year they get tighter. C44

   A review of the draft EIS reveals that the proposed project will meet or exceed all federal and state SO2, NOx, mercury, PM10, and other applicable environmental regulations. C93

   I live on the Northern Cheyenne Indian Reservation in Class 1 air. It's not any better or any worse than the air here. We have monitoring stations that are provided by the Colstrip power plants that keep track of our Class 1 air. My health has not been adversely affected nor has my neighbors. Further I worked for the Colstrip power plants. And while their technology was wonderful for the time, the power plants that are being proposed by SME are -- they're being built to the best possible technology that we have available to us right now. It's possible to build power plants, monitor and control emissions and live in a healthy environment. C141

   I am concerned about the high level of air pollutants, including heavy metals and greenhouse gases, that the proposed Highwood Generating Plant will be permitted to release into the air I have to breathe. C145

   There's one thing I would like to ask, as I have heard all of the derogatory comments about the use of coal, and the reason why I ask that is this: I grew up in a coal heated house, I grew up in a coal heated school, down in the panhandle of Nebraska along with a lot of neighbors that did likewise. And we never suffered any from that exposure. Now, don't tell me there wasn't fumes coming out of those stoves into the house, because anybody that has lived in that type of situation knows that it did happen. And so I feel that a lot of these charges that we've heard this afternoon against an organization that I have learned has treated me very, very honestly -- I don't think they're trying to build something that is going to kill people. C156

   Blaine County Farmers Union is totally opposed to the proposed coal-fired power plant because of the emissions of neurotoxic mercury, sulfur and nitrogen oxides and particulates that cause respiratory and cardiac illness and carbon dioxide that contributes to global warming. We are shocked that Coops are promoting such a destructive venture. C162

   Carbon dioxide, nitrous oxide and mercury emissions at any level strike terror to my heart. Energy from coal is our past. C175

   We are concerned with the technology that is scheduled to be used in this plant because it *allows an unacceptable level or mercury and carbon dioxide to escape into the air, and ultimately in to the Missouri River. This will affect not only our air quality, but also our local food chain. C179*

Please consider the Governor's position on coal and the pollution generated by the burning of it. Specifically consider how CO_2 sequestering can be accomplished in MT and especially in the "Highwood Great Falls and East" area As we on the West side of the divide must be conscious of the coal-fired plants popping up in China, so must those downwind of Great Falls be concerned about down wind effects of coal burning. C247

Montana, and especially Great Falls is noted for its clean air quality. To allow a coal fired generating plant in Great Falls, in our opinion, would compromise this air quality and impose a real health risk. C273

I have grave concerns about the proposed HGS and the draft EIS. Basically, I live with my family and friends "downwind" of this project; actually, it is just over the mountains. The wind does blow here almost every day from all directions, but mostly from the Great Falls or "westerly" direction. As a result of the wind, I am extremely concerned about the emissions of Carbon Monoxide, Sulfur Dioxide, Sulfuric Acid Mist as well as Mercury, to name just a few. I, as a citizen of this great state, do not want to be downwind of these emissions! C305

In my judgment, it is utterly irresponsible in the current situation to have proposed, lete alone for agencies of state and federal governments to approve an air-quality permit and funding for, an electricity-generating plant whose conception expresses such a short-sighted and narrow view of our responsibilities as human beings….The proposed plant will generate far too much pollution of a sort that has significant environmental consequences. C319

Response: The DEQ's Supplemental preliminary determination (PD) on MAQP #3423-00 regulates air pollutant emissions from the proposed project within the authority provided under the applicable Montana and federal requirements of law. Permit requirements regulating air pollutant emissions are based on a thorough analysis of potential project impacts to air quality resources and are protective of the Montana and National Ambient Air Quality Standards (MAAQS/NAAQS), New Source Review Prevention of Significant Deterioration (PSD) increments, and all other applicable regulatory standards and requirements.

2. *"Cap-and-trade" exceptions are <u>not appropriate</u> for a new plant, nor are exceptions which tolerate periodic excess emissions at any time throughout the life of the plant. C8*

Response: The appropriateness of applicable emissions "Cap and Trade" programs including the Acid Rain Program under Title IV of the Federal Clean Air Act, 40 Code of Federal Regulations (CFR), Part 72, and the Montana state Mercury rule(s) adopted by the Board of Environmental Review (BER) on October 27, 2006, is outside of the scope of this EIS.

Further, the DEQ's Supplemental PD on MAQP #3423-00 does not allow for emissions in excess of the applicable permit limits and conditions. Attachment 2 to Supplemental PD #3423-00 provides an excess emissions report to be used by SME-HGS to report any such non-compliant excess emissions.

3. *Lately, DEQ as not enforced required CAA regulations "to achieve and maintain levels of air quality that will protect human health and safety and, to the greatest degree practicable, prevent injury to plant and animal life and property." It is time that the DEQ be called to task on this. For example, the Draft Air Quality Permit issued by DEQ for this plant overlooks the fact that by emitting approximately one ton of particulates daily this plant will compromise human health and safety! C8*

   The proposed plant would produce mercury, carbon dioxide and other toxins that are hazardous to the health of people and animals living in and down wind from Great Falls, not only within the body of the women who are childbearing age who risk having babies with birth defects, but also in the lungs of those who have respiratory problems. It would adversely affect those of us who consider ourselves relatively healthy as well. These toxins would pollute the air we breathe, the water we use, and the soil we use for food production. Any added pollution to our already polluted environment is unacceptable if better alternatives are available, and they are. C24

   The air quality of this Great Falls area is good, and it is one of our great, great assets. According to the DEIS, the fallout from the proposed plant will definitely affect the air quality. There's no question about it. To me it is a great disservice to this community that the plans for this plant have progressed even to this point. I sit here and wonder how in the world this could have happened. You talk about acid. You talk about haze, et cetera, in Glacier Park and Yellowstone Park. The fact of the matter is that the HGS will affect our air quality. C27

   SME has steadfastly maintained that this method of coal burning is "clean." In reality this is a myth for it produces in one year 1,177 tons of Carbon Monoxide, 944 tons of Nitrogen Oxides, 443 tons of Sulfur Dioxide, 366 tons of Particulate Matter, 62, tons of Sulfuric Acid Mist, 38 tons of Volatile Organic Compounds, 24 tons of Hydrochloric Acid Gas, and 40 pounds of Mercury. C29, C146, C155, C165, C167

   In today's scenario Great Falls will reap the benefits, perhaps some local jobs. And the neighboring areas will wreak the havoc of this new construction. The plant will have a nice tall majestic smokestack that will allow several deadly pollutants, including mercury, to travel the air currents and affect us all for miles in every direction. I recall walking the morning of May 19th, 1980, to go to work and finding everything in Havre covered with a fine, gray ash. Yes, this was the day after Mount St. Helens erupted, some 880 miles from here. So if you think the pollutants of Great Falls won't reach the Hi-Line, think again. C38

   That's one thing I love about Great Falls--our clean air! Please don't ruin it. C87, C230

Response: The primary objective of Montana's air regulatory program is to "achieve and maintain levels of air quality that will protect human health and safety and, to the greatest degree practicable, prevent injury to plant and animal life and property". This is accomplished through protection of the NAAQS and MAAQS for pollutants considered harmful to public health and the environment including the Criteria Pollutants carbon monoxide (CO), oxides of nitrogen (NO_x), ozone (volatile organic compounds (VOCs) are regulated as a precursor to ozone formation), lead (Pb), particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM_{10}), particulate matter with an aerodynamic diameter less than or equal to 2.5 microns ($PM_{2.5}$), sulfur dioxide (SO_2) as well as hydrogen sulfide and through visibility impact standards. The Clean Air Act, which was last amended in 1990, requires EPA to set NAAQS for wide-spread pollutants from numerous and diverse sources considered harmful to public health and the environment. The Clean Air Act established two types of NAAQS, primary and secondary standards. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against visibility impairment, and damage to animals, crops, vegetation, and buildings. The MAAQS are at least as stringent, or more stringent than, the NAAQS. Through the application process for the Supplemental PD on MAQP #3423-00, SME-HGS has demonstrated compliance with the applicable NAAQS/MAAQS, as required for permit issuance.

Mercury (Hg), hydrochloric acid (HCl), sulfuric acid mist (H_2SO_4), and carbon dioxide (CO_2) are pollutants for which no current ambient air quality standard exists. Further, the Montana and Federal Clean Air Acts do not currently regulate greenhouse gas emissions, including CO_2 emissions, from regulated sources of air pollution. Therefore, the DEQ does not have the authority to regulate these emissions under ambient standards in the MAQP #3423-00 for the proposed SME-HGS project. In accordance with the provisions contained in the Administrative Rules of Montana (ARM) 17.8.752, Emission Control Requirements, the DEQ does have regulatory authority for Hg, HCl, and H_2SO_4 emissions for the proposed project. SME-HGS would be required by permit to control Hg, HCl, and H_2SO_4 emissions from the boiler through the use of BACT. The applicable Hg, HCl, and H_2SO_4 emission controls and limits were established through the BACT analysis and determination process. SME-HGS would be required to control Hg, HCl, and H_2SO_4 emissions from the boiler through the operation of an Integrated Emission Control System (IECS) which includes CFB limestone injection technology, a fabric filter baghouse (FFB), a hydrated ash re-injection (HAR) system, and selective non-catalytic reduction (SNCR). Further, SME-HGS would be required to install and operate Hg specific activated carbon injection (ACI) control technology, or an equivalent technology, if necessary, to achieve the BACT determined Hg emission limits contained in the DEQ's Supplemental PD on MAQP #3423-00.

A MAQP issued by the DEQ provides the owner and operator of an affected source of air pollution with a license to emit regulated levels of air pollutants. The purpose and intent of current Montana and Federal law regulating industrial sources of air

pollution is to allow for business and economic development while maintaining a clean and healthful environment through appropriate regulation of the affected source. Through the permitting process for MAQP #3423-00, SME-HGS has demonstrated compliance with all applicable requirements of law, as required for permit issuance.

4. *When you're burning 1.1 billion tons of coal per year, there's going to be an adverse impact on that. I'm down wind. I'm only 90 miles northeast of here. I'm concerned about the toxic contaminants and pollution that will be coming through Rocky Boy. C18, C26*

   We can see the fumes from the Colstrip power plant. It's just steam. And that's a 20-year-old plant. They told us we're all going to die from all that stuff. We've got four kids, ten grandkids, four great-grandkids. As far as I know, none of them have had any problems. I have heard of no air problems in all that down wind area. All these worries about all this junk it's ridiculous. C57

   I have a very serious concern about the plant that is being proposed because of where I live. We're going to be down wind. And according to some of the studies that have been done, the prevailing winds, particularly the Chinook winds we get in the wintertime, come directly from Great Falls. And approximately 42 to 49 percent of the particulates or the emissions from this plant are going to be in a quarter, which includes my farm and those of my neighbors. So I'm concerned about that. C110

   Response: Computer modeling conducted as part of the MAQP application process has demonstrated that all potential downwind impacts from the proposed project are in compliance with the applicable requirements of law including, but not limited to, compliance with the health-based NAAQS/MAAQS.

5. *Management policies of the NPS seek to perpetuate the best possible air quality in NPS-managed areas to 1) preserve natural resources and systems, 2) preserve cultural resources, and 3) sustain visitor enjoyment, human health and scenic vistas. In cases of doubt as to the impacts of existing or potential air pollution on park resources, the NPS errs on the side of protecting air quality and related values for future generations. The DEIS did not include in its analysis the potential air quality impacts of the Salem location on the Upper Missouri River Breaks National Monument and Upper Missouri National Scenic Riverway, which commences approximately 30 miles downwind from the site. Such areas considered are Class II watersheds under the Clean Air Act and given the same consideration of air quality impacts as NPS parklands. C28*

   Response: In the DEIS, DEQ and RUS evaluated potential impacts to air quality related values at Class I areas, such as Glacier National Park and the UL Bend Wilderness Area. The Upper Missouri River Breaks National Monument and Upper Missouri National Scenic Riverway are Class II areas, for which air quality related values analysis is not required.

6. *We should want to avoid the problems that countries such as China has. Their air problems are major and mostly due to coal. Just ask anyone who has been a recent tourist to that country. C33*

   Response: Thank you for your comment.

7. *The draft air quality permit for the facility is included as appendix I of the DEIS. On page 4-38 and elsewhere in the DEIS are references to specific information in "the PSD Application." The citations listed in chapter 6 include, instead of the permit application, the Montana Air Quality Permit (Draft) – Permit #3423-00, with a link to the Internet. The document cited, and the document at the Internet link, are the same as the draft permit included as appendix I. In order to make the permit application serve NEPA purposes, please either excerpt from it the specific information mentioned in the DEIS or accurately incorporate it by reference and make it available to the public. C36*

   Response: The application for MAQP #3423-00 is on file with the Department and is available to the public upon request.

8. *In an article in the Havre newspaper, Mr. Chaffee says 99.5 percent of the particulates will be captured before going into the air. He used graphs to show the amount of particulates reaching Havre and Fort Benton. He said this will be close to zero, close to zero. Now, in the next column Mr. Gregori estimated that the plant will receive about 220 pounds of mercury, and 22 pounds of this will be released into the atmosphere. C47*

   Response: The BACT-determined fabric filter baghouse control requirement for particulate emissions from SME-HGS CFB boiler operations has a control efficiency estimated at approximately 99.85%. Therefore, 99.85% of the potential particulate emissions would be captured which equates to potential emissions after control of 138.03 tons per year (filterable particulate matter). Further, computer modeling conducted as part of the MAQP process has demonstrated that all potential downwind impacts, including impacts to air resources in and around Havre and Fort Benton, are in compliance with the applicable requirements of law.

   Regarding mercury emissions, which are not currently regulated by any NAAQS or MAAQS, the DEQ's permit analysis estimates that approximately 40 pounds per year of mercury would be emitted to the atmosphere through proposed CFB boiler coal combustion. (After implementation of the Montana mercury rule, this would be reduced to approximately 22 pounds annually.) Mercury emissions from coal combustion vary in form. A portion of the mercury emitted would be emitted in particulate form and thus would be effectively controlled by the fabric filter baghouse, while mercury emitted in non-particulate form would pass through the fabric filter baghouse and would be captured only with mercury-specific controls. Therefore, the particulate control efficiency of a fabric filter baghouse is not directly representative of the control device's mercury control efficiency.

9. *The fact that you're going to have constant systems emission monitoring I think makes a*

big difference here. That way you will be kept abreast of what is going on and be as safe as possible. C53

Response: The Supplemental PD on #3423-00 requires continuous emission monitoring systems (CEMS) for opacity, NO_x, and SO_x. The CEMS provide ongoing compliance assurance for applicable emission limits.

10. *Granting an air quality permit before an EIS has been completed and the public given the opportunity to comment thereon makes a mockery of the EIS process and points up that recent changes in regulatory authority and MEPA will not insure a "clean and healthful" environment as required by the Montana Constitution. The DEQ cannot make substantive determinations and the procedural ones being made are not adequate to the task of protecting our "clean and healthful" environment here in Great Falls. A recent letter from the Governor's office to me to which a comment from the DEQ was attached and a recent article in the Great Falls Tribune make it clear that as far as the DEQ is concerned the matter has been decided and the only purpose of the EIS is only to determine what mitigation measures are required. C78*

    MEIC notes its objection to the DEQ's preparation of a draft permit prior to the completion of the EIS process. The purpose of an EIS is to assess impacts and alternatives prior to taking action to permit a facility. C95, C134

    Response: In accordance with the provisions contained in ARM 17.8.760 and the Montana Code Annotated (MCA) 75-2-211, when an application for a proposed project requires an EIS under the provisions of the MEPA, the procedures for public review are those required by MEPA. Further, because the federal lead agency on the EIS is the RUS, the DEQ cannot issue its final decision on the air quality permit until after the 30-day comment period on the final EIS. Therefore, the DEQ will not issue a final decision on MAQP #3423-00 for SME-HGS until all requirements of NEPA and MEPA are satisfied.

11. *Applicant has referenced a plant with similar technology in Indiana or Kentucky. In talking with engineers who have studied this sister plant in operation, I have learned that it has been very difficult for the plant to maintain permitted levels of the various discharges because chemical additives need constant adjustments for factors which change constantly. It would seem that this type of plant would be impossible to monitor adequately to insure that standards you set are being achieved. Has DEQ talked with regulators and plant officials for this sister plant to determine problems they have had in meeting their permit in actual operation? C78*

    Response: SME-HGS pre-application discussion and correspondence between DEQ staff and Commonwealth of Kentucky – Department of Environmental Protection staff has indicated that the permitted and operational East Kentucky Power Cooperative, Inc., Spurlock Station, Gilbert Unit 3 (sister plant to the proposed SME-HGS plant), has in fact been able to demonstrate compliance with the applicable permit terms. The DEQ's Supplemental PD on MAQP #3423-00 includes

various compliance monitoring provisions ensuring adequate monitoring of applicable permit terms and emission limits. Further, the proposed project is subject to the requirements of the Title V operating permit program. The Title V operating permit for SME-HGS, when issued, would incorporate additional compliance demonstrations, recordkeeping requirements, and reporting requirements to monitor compliance.

12. *I am concerned that if standards DEQ sets in its air quality permit are not met, the company, once the plant is built, will request modifications to the permit to allow even greater pollution. In my opinion, at the very outset applicants should not be allowed to submit proposals, which they know, are risky or even impractical with the idea that they will get modifications in the permit later. Granting an air quality permit to such folks with such foreseeable problems will only allow capital to be wasted if the plant can not be operated adequately. C78*

    Response: In accordance with the provisions contained in ARM 17.8.748 and ARM 17.8.818, a regulated source is allowed to modify an existing MAQP for cause. For any substantive permit changes, the applicant for a modified MAQP must demonstrate compliance with all the applicable requirements of law as required for modified permit issuance.

13. *The permit should expire after eighteen months if construction has not commenced. This was a condition in the Roundup permit and should be here also, especially since technology is advancing so rapidly in this field. C78*

    Response: DEQ's authority for requiring that construction commence within a particular timeframe is found in ARM 17.8.762(2). That rule subsection states that: "A permit issued prior to construction or installation of a new or modified facility or emitting unit may provide that the permit or a portion of the permit will expire unless construction or installation is commenced within the time specified in the permit, which may not be less than one year or more than three years after the permit is issued." The rule does not require DEQ to include a deadline for commencement of construction, but provides DEQ with the discretion to include a deadline of from one to three years. In Section III.H of MAQP #3423-00, DEQ has included a permit condition stating that the permit will expire if construction does not begin within three years after permit issuance.

    EPA's Prevention of Significant Deterioration (PSD) regulations, at 40 CFR 52.21(r)(2), provide that the appropriate timeframe for commencement of construction of a facility subject to PSD review should be limited to 18 months. Further, 40 CFR 52.21(r)(2) includes a provision allowing EPA to extend the 18-month time period upon a satisfactory showing that an extension is justified. Based on DEQ experience, it is very difficult to commence construction of a major power plant within 18 months after issuance of the air quality permit. As previously referenced, ARM 17.8.762(2) provides DEQ with discretion to determine, on a case-by-case basis the appropriate timeframe, if any, for commencement of construction

of a permitted facility. DEQ determined in the present case that a three-year period for commencement of construction of the SME-HGS project is justified. Including a deadline for commencement of construction is intended to ensure that the pollutant-specific BACT determinations for the permit are current at the time of commencement of construction.

14. *MEIC has grave concerns over the proposed Highwood Generating Station. Coal remains the dirtiest way to generate a kilowatt-hour of electricity, across a wide range of atmospheric pollutants, and this certainly holds true for the proposed plant. C95, C134*

    If the builders would decide to build the coal burning plant that would eliminate the mercury and other heavy metals along with reducing the CO2 emissions into the air, then I would support the plant building. But they feel it would cost too much to provide clean air...well, I want to breath 'clean air' in my town of Havre, MT. It's funny that they are not willing to build this plant in their back yard, they are the ones benefiting from the generation of the electricity. C100

    Response: SME-HGS proposed a coal-fired power plant incorporating a CFB Boiler for the production of steam to be routed to a steam turbine, which in turn drives an electric generator capable of producing electrical power. The EPA NSR Manual, which provides guidance on the BACT analysis and determination process for major sources of air pollution, states that, "historically, EPA has not considered the BACT requirement a means to re-define the design of the source when considering available control technologies." Based on Department analysis of the proposed project, the Department determined that redefining the source from a CFB project to an alternate electrical generation technology is not appropriate, in this case.

    Furthermore, it should be emphasized that, 1) carbon dioxide is not a regulated pollutant, and 2) the HGS would meet all applicable regulations and other requirements.

15. *Page 4-28, Section 4.5.1. and Page 4-57, Conclusion. The description of adverse air impacts from the no action alternative needs to be changed to reflect the potential for significantly higher emissions. It is currently anticipated that SME will lose most of its power supply by 2011, which consists of hydropower, and there is no expectation that this hydropower source will be restored. It is probable under a no action alternative that SME's projected electricity load will be met through purchases of power primarily from other coal-fired plants in the state or region. These plants are primarily older generation facilities, with less air pollution control than HGS, and emissions of most pollutants are likely to be higher than that expected from the HGS. C128*

    Response: There is no way of determining at this point what the power source would be for electricity that would be purchased under the No Action Alternative. It could come from an older, dirtier coal-fired plant, from a newer, cleaner coal-fired plant, and/or from a wind farm or other renewable source. Therefore, the

range of environmental effects attributable to the generation source(s) could vary substantially.

16. *Page 4-31, first paragraph, third sentence. Strike this sentence about the preliminary determination for the preconstruction permit since this paragraph deals with the operating permit to be addressed prior to operation of HGS. C128*

    Response: This change has been made in the FEIS.

17. *Page 4-33, first paragraph, third line. At this time the fabric filter bag material is unknown. Please remove the word fiberglass. C128*

    Response: This change has been made in the FEIS.

18. *Page 4-33, second paragraph, fourth line from the end of the paragraph. Add language to the existing line which states "…Hydrated ash reinjection is a type of dry flue gas desulfurization (FGD) system that allows for additional conversion of SO2 to CaSO4…." While each CFB boiler supplier has different equipment and system descriptions, each system will accomplish the same result which is the removal of SO2 emissions. Italics added for emphasis. In Table 4.2 and throughout the document we suggest that hydrated ash reinjection be changed to secondary flue gas desulfurization as a more general term covering multiple sulfur control systems. C128*

    Response: The DEQ will consider this request under the final decision on MAQP #3423-00. Because the current PD #3423-00 specifies Hydrated Ash Re-Injection (HAR) technology, the EIS should maintain this SO_2 control terminology.

19. *Page 4-35, fifth non-bulleted paragraph, second line. Change the existing word boiler to heater as noted "…Therefore, these heaters would be considered…" Italics added for emphasis. The heaters do not boil water or make steam but do heat the ambient air. C128*

    Response: This change has been made in the FEIS.

20. *Page 4-57, Mitigation Measures. This section should mention use of Continuous Emission Monitors (CEMs) and a computerized control room to minimize the "potential to become significant" claim in the Conclusion Section. CEMs and a computerized control room will adjust equipment and pollution control parameters to maintain compliance or will set off alarms when an emissions limit is being approached. C128*

    Response: This change has been made in the FEIS.

21. *The DEIS is weak in a number of areas. For example, the DEIS allows a number of initial months for non-compliance. **<u>This is totally unacceptable.</u>** The most stringent pollution controls need to be installed <u>immediately,</u> not added later to meet minimum requirements, as is currently planned. C8*

Response: Please see ARMB response to comments at AIR-602-1.

22. *Being a person who lives directly east of the proposed power plant, which is down-wind, I feel there will be no problems. Plus, the small amount of CO_2 emitted will benefit our crops. C41*

    I live in Winifred, Montana, east of the proposed plant as well as down-wind, and I have no reservations whatsoever that this facility would be an environmentally safe venture. C296

    Response: Thank you for your comments.

AIR-601 AIR QUALITY – CRITERIA POLLUTANTS

1. *Southern Montana Electric understands that some folks are concerned about downwind impacts from the proposed power station and that they would be significantly impacted by the emissions from the Highwood station. As part of the air quality permit application, a series of air dispersion models were run to project impacts of emissions. These models used are widely used by the EPA and the State DEQ to measure impacts of projects like this coal-fired power plant. At the request of SME, Bison Engineering put a line of receptors in the dispersion models reaching from the power station downwind to both Fort Benton and Havre. This direction is in line with the prevailing wind direction from the Great Falls area out of the southwest. Havre, at a distance of over 90 miles from the proposed power plant site, wouldn't normally be studied in these dispersion models, in a study like this, because it's so far away. Model runs were run for several of the air pollutants that people are concerned about: particulate matter, less than 10 microns in diameter, PM-10; nitrogen oxides; and sulfur dioxide. Beyond eight miles in the downward directions, pollutant concentrations drop off quickly, reaching a level of about .03 percent of the standard at Fort Benton, and dropping to near zero all the way out to Havre. These modeling results show what air pollution scientists know, from their studies, that a power station with best available pollutant control technology has very low impacts on the surrounding area. C11*

   Page 4-42 - Class II Area NAAQS and MAAQS Analysis - To supplement the oral testimony given by SME at the Havre public hearing on August 7, 2006, SME is submitting the attached graphs. To address public concerns about impacts of pollutants at distances in the prevailing downwind direction from the facility, SME ran the ISC3 model with a line of receptors along a line from the Highwood Generating Station out to Fort Benton and Havre, Montana. The graphs represent modeling concentrations for annual SO2, PM10, and NOx impacts along the line of receptors for one year of modeling with a comparison to the ambient standards for each pollutant. As illustrated in the graphs, annual impacts along the line of receptors from these three pollutants are near zero and a very small percentage of the ambient standard. C128

   As an asthma sufferer [and Fort Benton resident], I will be in the direct wind path of contaminants emitted by the plant….Although they are proposed to be less than conventional coal-fired plants, any pollutant emitted will worsen the air quality for people downwind. Here in Fort Benton, whatever the wind carries is trapped and settles in the town and makes it bad for people with respiratory problems. C325

   Response: Computer modeling conducted as part of the MAQP process has demonstrated that all potential downwind impacts from the proposed project are in compliance with the applicable requirements of law including, but not limited to, compliance with the health-based NAAQS and MAAQS.

2. *As designed, each year, the Highwood Generating station would add thousands of tons of pollution such as carbon monoxide, sulfur dioxide, hydrochloric acid, particulates, mercury and lead into the air in Great Falls. As a public health nurse practitioner I am*

deeply concerned about the potential adverse public health effects from increased heart disease, respiratory problems and developmental effects in children in the surrounding area. C17, C60, C81, C137

A 2006 television HBO documentary, "The Air We Breathe", graphically demonstrates the marked increase in the rates of asthma in children living adjacent to coal plants. The Highwood Generating Station is permitted each day to release one ton of dangerous, respirable PM 10 particulates, laden with toxic heavy metals such as arsenic and lead. We now have evidence that very small particles not only endanger people's lungs, but also hearts and arteries (Science News, August 2, 2003, p.72). C20

The revised draft air quality permit for the Highwood plant shows it will emit 62 tons of Sulfuric Acid Mist per year, 24 tons of Hydrochloric Acid Gas per year, 20 tons of Hydrofluoric Acid Gas per year, 944 tons of Nitrogen Oxides per year, and 443 tons of Sulfur Dioxide per year. These chemicals are all contributors to acid rain. Who will pay for acid rain damage to vehicles, steel-sided building, etc., located within a fifty–mile radius of the power plant or downwind of the plant? C50

I'm really concerned that we're creating a whole new generation of downwinders. This is not a war. There is no acceptable level of casualty. There is no acceptable level of collateral damage. We can do this without harming people's lives. So I find it unconscionable that this method [CF B] was even selected. And I don't want to create another generation of downwinders. C74

Impact of emission spikes of criteria pollutants must be included. We are concerned about the potential of emission spikes of criteria pollutants from the Highwood Generating Station from a public health standpoint. While environmental law is not yet sophisticated enough to accommodate new scientific information quickly, we believe it is important to bring to the DEQ's attention. Specifically, there have been a number of recent scientific studies looking at short term increases in pollutant levels and their effects on health. Serious health effects, such as increases in hospital admissions for stroke and cardiovascular diseases, have been associated with small increases in ambient pollutant levels of PM10, SO2 and NOx - even those increases that last no more than a single day. We have attached at the end of these comments, abstracts from three recent studies which highlight the types of health effects associated with short term increases in ambient pollution associated with the Highwood Generating Station. We ask that the EIS incorporate this information, and further explain the potential impacts of short term spikes of pollution in Great Falls. C154

Air pollution from power plants alone contributes to an estimate 30,000 pre-mature deaths, hundreds of thousands of asthma attacks, and tens of thousands of hospitalizations for respiratory and cardiovascular illness each year. C169

The Northern Cheyenne Indian Reservation is located 240 miles southeast of Great Falls. The prevailing winds are from the west and northwest. The reservation is a redesignated Class I air shed. There will be air quality impacts from this generating station. The *accumulative effects from all sources surrounding the reservation does affect air quality and visibility. C272*

The pollution analysis is weak. The accumulation of pollutants over time in Great Falls neighborhoods and in the surrounding farmland is not adequately addressed. There needs to be an analysis of the numbers of people who will suffer pulmonary problems from particulates. C303

During winter months we occasionally get extended periods of strong inversions associated with arctic air and easterly winds. This would funnel the effluents back into Great Falls where it would be trapped under the inversion….In fact, at any time of year, when we experience an easterly or northeasterly wind Great Falls residents would be affected by the effluent. C321

As a pharmacist, I am very concerned by the various emissions, many of which aggravate asthma and other lung conditions. Again, the level of emissions projected may be woefully understated. I would hope that best practices, not outdated standards be the rule in proposing or accepting any power generating system today. Our nation is experiencing an increase in asthma and asthma-related deaths. It is imperative that any proposal not increase these numbers. C331

Response: The primary objective of Montana's air regulatory program is to "achieve and maintain levels of air quality that will protect human health and safety and, to the greatest degree practicable, prevent injury to plant and animal life and property". This is accomplished through protection of the NAAQS and MAAQS for pollutants considered harmful to public health and the environment including the criteria pollutants CO, NO_x, Ozone (VOCs are regulated as a precursor to ozone formation), Pb, PM_{10}, $PM_{2.5}$, SO_2 as well as hydrogen sulfide and through visibility impact standards. The Clean Air Act, which was last amended in 1990, requires EPA to set NAAQS for wide-spread pollutants from numerous and diverse sources considered harmful to public health and the environment. The Clean Air Act established two types of NAAQS, primary and secondary standards. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against visibility impairment, and damage to animals, crops, vegetation, and buildings. The MAAQS are at least as stringent as, or more stringent than, the NAAQS. Through the application process for the Supplemental PD on MAQP #3423-00, SME-HGS has demonstrated compliance with the applicable NAAQS and MAAQS, as required for permit issuance.

For pollutants such as mercury and acid gases, for which no standard currently exists, the DEQ regulates emissions through enforceable control technology requirements and/or emission limits. The applicable conditions/limits are established under authority provided by the BACT program contained in ARM 17.8, Subchapters 7 and 8.

An MAQP issued by the DEQ provides the owner and operator of an affected source of air pollution with a license to emit regulated levels of air pollutants. The purpose and intent of current Montana and Federal law regulating industrial sources of air pollution is to allow for business and economic development while maintaining a clean and healthful environment through appropriate regulation of the affected source. Through the permitting process for MAQP #3423-00, SME-HGS has demonstrated compliance with all applicable requirements of the law, as required for permit issuance.

3. *Acid rain, a by-product of the coal industry, could do damage to surrounding forests. C33, C78*

   Will the tourists still come to see Montana's beautiful landscapes when acid rain ravishes them like the emissions from Midwest power plants are currently doing to the New England forests? C50

   Response: Emissions associated with acid rain (NO_x and SO_2) are regulated by a federal emissions "Cap and Trade" program under Title IV of the Federal Clean Air Act, 40 Code of Federal Regulations , Part 72. Further, the Supplemental PD on MAQP #3423-00 includes enforceable emission limits and control strategies for these pollutants established in accordance with the requirements of the ARM 17.8.752, Emission Control Requirements. Also, through the application process for the Supplemental PD on MAQP #3423-00, SME-HGS demonstrated compliance with the applicable requirements including the NAAQS and MAAQS, which include secondary standards designed to be protective of public welfare, including protection against visibility impairment, and damage to animals, crops, vegetation, and buildings.

4. *Table 3-5 (page 3-30) presents data from ambient air monitoring which help to characterize the existing environment. This table could more completely explain the data presented. In the case of a 24-hour PM_{10} concentration, for example, it would be helpful to know whether the concentration reported is a maximum daily average, a second-maximum, a 99th percentile, or other value. Please explain the data presented in more detail. It would also be helpful to include information on the sources of the data beyond the "county air quality report," for example the locations of the air monitoring stations and the period of record. C36*

   Response: The 24-hr maximum PM_{10} concentration of 23 μg/m^3 reported in Table 3-5 of the DEIS is in fact the maximum calendar day average monitored at the station. As provided in the footnote at the bottom of the table, the data were collected at a monitoring station located at the proposed and permitted site of operation.

5. *Page 3-35 refers to the deposition analysis thresholds adopted by the Federal Land Managers to evaluate potential acid deposition. The significance thresholds for deposition of sulfur and nitrogen compounds in Class I areas and acid neutralizing*

capacity in sensitive lakes cannot be found in the DEIS. Please include the significance criteria for deposition and acid neutralizing capacity in the Final EIS. C36

Response: The Federal Land Managers (FLM)-established annual Deposition Analysis Thresholds (DAT) for total nitrogen and total sulfur deposition are each 0.005 kilogram per hectare per year for the western United States. Impacts higher than these levels trigger the requirement for additional analyses. This information has been added to the FEIS.

6. *A paragraph beginning on the bottom of page 4-37 explains the review conducted under the regulations for Prevention of Significant Deterioration (PSD). As discussed in section 3.3.3, Great Falls has been a nonattainment area for carbon monoxide. EPA redesignated the area to attainment in 2002. The FEIS should disclose that Great Falls is now a maintenance area subject to conformity requirements and that these requirements have been addressed through the PSD review (see 40 CFR Part 93.153(d)(1)). C36*

   Response: The proposed SME-HGS plant would be located in an area identified as attainment for the applicable NAAQS and MAAQS, including CO. However, the facility would be located near an area that was previously considered a non-attainment area for CO but has recently been re-designated attainment for CO under a limited maintenance plan (LMP). Computer modeling conducted through the MAQP application process for the SME-HGS project demonstrated that the proposed plant would not impact the attainment status of the LMP CO attainment area.

7. *On page 4-43, the sentence introducing table 4-8 is confusing. According to this sentence, "the high modeled concentrations from PSD increment consuming sources (HGS sources and non-HGS sources combined) are 35 percent or less of the respective PSD Increments for all pollutants and averaging periods except 3-hr SO_2 which is less than 75 percent of the PSD increment." However, the result shown for three-hour SO_2 is also less than 35 percent of the increment. Please revise this section. C36*

   Page 4-43, paragraph three, fourth line. This line states the 3-hr SO2 is 75% of the increment and Table 4.8 shows 2.1%. The 3-hr SO2 figure of 75% of the increment is incorrect, while the Table 4.8 figure of 2.1% is correct. C128

   Response: Commenters are correct. The sentence regarding the SO_2 3-hour increment has been corrected in the FEIS.

8. *Dust particulates from construction, and ongoing operations on roadways are important concerns. Entities and citizens have often complained of dust problems resulting from these and similar construction activities. The airborne dust may not only be a visual nuisance, but can be potentially dangerous to asthma sufferers. Sedimentation run-off can severely impact the aquatic environment. Please include detailed specific plans for addressing dust control for the project. Items in the plan should include, though not*

necessarily limited to, dust suppression methods, inspection schedules, and documentation and accountability processes. Construction techniques such as 95% base compaction prior to placement of gravel, culverts for water drainage, steep slope construction measures to prevent erosion, and appropriate dust control methods (such as placement of a non-chlorine based dust abatement chemical treatment), are important dust suppression and sediment reduction techniques. C36

Response: In accordance with the provisions contained in ARM 17.8.308, the DEQ's Supplemental PD on MAQP #3423-00 requires that SME-HGS use reasonable precautions to control fugitive dust from haul roads, access roads, parking lots, and the general plant area including, but not limited to, the use of water and/or chemical dust suppressant, as necessary, to maintain compliance with the applicable 20% opacity limit for the affected sources of fugitive dust. Further, these fugitive dust control requirements would be applicable during facility construction activities and constitute BACT for the proposed project in accordance with the provisions contained in ARM 17.8.752. Because these requirements constitute enforceable permit terms, compliance with these requirements would be evaluated through periodic DEQ inspection activities. Also, the pending Title V major source operating permit for the SME-HGS project could include additional monitoring, recordkeeping, and reporting requirements for the affected applicable fugitive dust control requirements.

9. *How will data on acid rain, mercury, lead, volatile organic compounds, etc., be collected in areas outside the power plant property? Who will collect this data in ten–mile, concentric–rings increments around the plant? Will the state oversee this data collection? Will this data be available to the public in a timely manner? C50*

Response: A MAQP issued by the DEQ provides the owner and operator of an affected source of air pollution with a license to emit regulated levels of air pollutants. The purpose and intent of current Montana and Federal law regulating industrial sources of air pollution is to allow for business and economic development while maintaining a clean and healthful environment through appropriate regulation of the affected source. Through the permitting process for MAQP #3423-00, SME-HGS has demonstrated compliance with all applicable requirements of law, as required for permit issuance. The Supplemental PD for MAQP #3423-00 includes conditions and limits that have been shown to be protective of public health and welfare and the environment and comply with the current requirements of law including, but not limited to, BACT and the applicable NAAQS and MAAQS. Because there are no particular concerns regarding compliance with ambient standards, DEQ is not requiring ambient air quality monitoring.

10. *Currently even moderate wind gusts result in Great Falls being coated in dust and dirt. Any coal pile will be another source of particulate. How will SME keep dust from its emergency coal pile(s) from blowing all over the countryside? Will the water allocated for spraying on the coal pile(s) automatically adjust for wind speed/direction? C50*

Response: In accordance with the provisions contained in ARM 17.8.308, Section II.E.8 of the Supplemental PD for MAQP #3423-00 requires that the emergency coal pile be compacted and sprayed with water and/or chemical dust suppressant, as necessary, to maintain compliance with reasonable precautions for fugitive emissions sources and that any fugitive emissions be limited to less than 20% opacity. In accordance with the provisions contained in ARM 17.8.752, these requirements constitute BACT for the affected source of fugitive dust emissions.

11. *Acid rain will have a deleterious effect on wheat farming here in the Golden Triangle. C111*

    We don't have the geology to buffer acid rain in this area. We don't have the limestone, the calcium carbonate. So we're going to have an acid buildup. And that's going to affect our plant materials, our forest ecosystem, as well as our wildlife. C129

    Response: The proposed SME project is subject to the requirements of the Federal Acid Rain Program under Title IV of the Federal Clean Air Act, 40 CFR, Part 72. Emissions of NO_x and SO_2 (acid rain pre-cursors) would be regulated by this emissions trading program. Further, the primary objective of Montana's air regulatory program is to "achieve and maintain levels of air quality that will protect human health and safety and, to the greatest degree practicable, prevent injury to plant and animal life and property". This is accomplished through protection of the NAAQS and MAAQS for pollutants considered harmful to public health and the environment including the Criteria Pollutants CO, NO_x, Ozone (VOCs are regulated as a precursor to ozone formation), Pb, PM_{10}, $PM_{2.5}$, SO_2 as well as hydrogen sulfide and through visibility impact standards. The Federal Clean Air Act established two types of NAAQS, primary and secondary. Secondary standards set limits to protect public welfare, including protection against visibility impairment, and damage to animals, crops, vegetation, and buildings. The MAAQS are at least as stringent as, or more stringent than, the NAAQS. Through the application process for the Supplemental PD on MAQP #3423-00, SME-HGS has demonstrated compliance with the applicable NAAQS and MAAQS, as required for permit issuance.

    A MAQP issued by the DEQ provides the owner and operator of an affected source of air pollution with a license to emit regulated levels of air pollutants. The purpose and intent of current Montana and Federal law regulating industrial sources of air pollution is to allow for business and economic development while maintaining a clean and healthful environment through appropriate regulation of the affected source. Through the permitting process for MAQP #3423-00, SME-HGS has demonstrated compliance with all applicable requirements of law, as required for permit issuance.

12. *Page 4-45, third paragraph, first line. A 34 year economic life is generally used for the facility. However, a 40-year life is default for the analysis of trace metals referenced in this section. C128*

Response: Thank you for this additional information.

13. *Page 4-45, Summary of Class II Area Impact Analysis. The bullets in this section indicate minor to moderate impacts. SME questions whether these impacts should be considered moderate, when the impacts are very low, the greatest being 35% of the allowable increments. C128*

Response: DEQ believes that the designation of impacts as minor to moderate is appropriate.

AIR-602 AIR QUALITY – HAZARDOUS AIR POLLUTANTS INCLUDING MERCURY EMISSIONS AND EFFECTS

1. *I am concerned about mercury. It is an element and does not dissipate naturally, but remains present permanently. Mercury is implicated in a number of adverse health effects, including cancer, asthma, and most likely autism. How can we even consider adding to these problems? C1, C99, C123, C125, C170*

   There is no safe level for mercury emissions and there are no guarantees that SME will meet any of the mitigation standards set forth in the EIS. As an attorney, I have first hand experience with self-regulation and find that it is a slow and cumbersome process. Self-regulation is inappropriate if the face of irreversible and immediate harm to people and to the environment. C3

   The circulating fluidized bed process (CFB) employed in the Highwood proposal will release large quantities of mercury into the atmosphere unless firm restraints on mercury production are placed in the air quality permit. The majority of Montana rivers and streams are already producing fish that are contaminated with mercury to a dangerous level. It is irresponsible to authorize the construction of any facility that will add to this level of contamination. This is especially important for residents of the nearby Rocky Boy and Fort Belnap Indian Reservations, where fish comprise a greater portion of the diet. C12, C14

   Will the R.U.S. ask for a solid number for the amount of mercury to be released? Will the R.U.S. require complete detailing cost of the mercury controls and insist that specific mercury controls must be installed during plant construction? Mr. Tim Gregori in numerous public meetings has indicated that the activated carbon injection process would be installed during plant construction. Why is the R.U.S. going to allow eighteen months of pollution before mercury controls are installed? C14,

   I've watched as SME has proposed and agreed to enter more stringent mercury controls as the public discussion on this topic progressed. C19

   Despite repeated promises to our City Commissioners and the public that SME will install specific mercury controls (activated carbon injection) the plant as permitted has no specific mercury controls and only a stated intention of possibly adding this control after 18 months of operation "if it's needed". C20

   Mercury pollution is a major concern of local citizens. The proposed SME Highwood plant does not have an electrostatic precipitator upstream of the bag–collector or an activated carbon injection stream between the two to improve mercury collection. The following reference, "Results of Activated Carbon Injection for Mercury Control upstream of a COHPAC Fabric Filter" May 2003 [http://www.hamon-researchcottrell.com/industry_Power.asp], describes using this equipment sequence to reduce mercury pollution. Of course, the air pollution control industry has many different ways to reduce air pollution, but a best effort has not been exerted to date. C50

The air quality permit should only allow the best available technology to be permitted. It does not do so. The permit also allows the plant to operate for months before they use the mercury-reducing technology they say they will install. Ostensibly this is to allow them to run their plant and see whether they need it or not! This is unacceptable. Mercury reduction by using best available technology must be required from beginning of plant operations. C78

I am especially concerned about the mercury. As a biological research technician, I can tell you about how careful I must be whenever I break a thermometer (concerns about breathing it), yet here we are thinking it'll be fine to spray it into the air we breath. C87

Two other plants in Montana have agreed to install activated carbon injection, or technology that is equally effective at removing mercury. In doing so, these plants have set the bar for what constitutes best available control technology for mercury. Representatives of SME admitted both before the Board of Environmental Review in July 2006 and in the Great Falls Tribune on November 2, 2005 that stack testing at a similar facility using Powder River Basin coal yielded mercury reductions of as much as 93% and an emission rate of around 0.44 pounds per trillion Btu. Armed with the knowledge of what two other plants in Montana have committed to, and what the developers have said their technology is capable of, DEQ must insist that SME install an activated carbon injection system and operate it at start-up of the facility. In addition, given the information provided by SME on its test burn, the emission limit of 1.5 pounds per trillion Btu is unacceptably lax. C95, C134

Due to uncertainties in emission levels over the course of the year resulting from variations in temperature and coal content, it is reasonable to build some flexibility and leeway into the permit. Establishing an emission limit that is based on a 12-month rolling average provides much of that flexibility and leeway, and is a generous concession. Most other limits are set on a per hour, per day, or per month basis. Therefore, it is unnecessary to grant further leniency by establishing a standard that is 3.4 times greater than what the test burn shows is possible. An emission limit of 0.8 lbs/Tbtu would be far more appropriate -- approximately double the level achieved in the test burn, it would provide adequate flexibility while still guaranteeing that the plant is operating in a relatively clean manner. C95, C134

It is important to start limiting the amount of mercury that enters Montana's waterways. Coal-fired power plants are the largest contributor to airborne mercury pollution and are the only remaining large source of mercury pollution in need of regulation. C95, C134

A number of studies indicate that mercury contamination not only exacts a high toll on public health, it also impacts the economy. The DEIS failed to consider these economic consequences. Perhaps the most thorough economic analysis of the public health costs from mercury emissions from coal-fired power plants was done by Harvard University and EPA, peer-reviewed by EPA and paid for by EPA. The Harvard Study, published by the Northeast States for Coordinated Air Use Management (NESCAUM), found that *strong mercury controls on coal-fired power plants, similar to the controls originally suggested by EPA, could save nearly $5 billion annually through reduced neurological and cardiac harm. C95, C134*

The reason for having a 12-month averaging time for the emission standard is to account for the variability in the mercury content in the coal. Raising the emission limit to address the same issue is double dipping and will result in an unnecessarily weak standard. C95, C134

Page 4-51, last paragraph, last line. Southern Montana Electric will install an activated carbon injection (ACI) control system as part of the construction of the CFB boiler. The Preliminary Determination does not require the ACI system to be used immediately upon startup of the CFB boiler, in order to allow for testing of the Integrated Emissions Control Strategy (IECS) to control mercury emissions. Because SME will install an ACI system before startup and have it available for use in controlling mercury emissions as needed to meet the mercury emissions limits (or to operate at mercury emission levels below the permit limits), we suggest that installation of an ACI system be listed as a voluntary mitigation measure for mercury emissions (not required by permit unless IECS fails to achieve permit emissions limits). C128

Mercury contamination is a current problem in Montana which the Highwood Generating Station will worsen, not improve. Medical literature is full of studies showing numerous detrimental health effects from prenatal exposure to mercury. There are children, here in Montana, experiencing neurological effects which will impact them for life - because their mothers ate fish contaminated with mercury. For some its only a mild hearing loss, or a few dropped points of IQ, or neurological symptoms of a more serious nature. At any rate, there are children are being born at a disadvantage that will affect them throughout their lives. The Highwood Generating Station will add to the mercury burden in Montana. Reducing local sources of mercury lowers mercury contamination in our rivers and lakes. Adding new local sources of mercury will have the reverse effect. The implications of additional loading of mercury on Montana's rivers and lakes must be fully explained in this EIS. C154

The mercury issue is a real key issue. We're all very concerned about mercury. We spent a good portion of our winter working with Montana DEQ and some of the environmental groups on negotiations on mercury. We don't take this lightly. It's a very serious concern. We know that any amount of mercury has an impact. But we also want to point out that on the National Park Service web site, the Norris and Geyser Basins put out between 205 pounds and 450 pounds of mercury per year. Now, I'm a down winder from the national park, from Yellowstone Park. That's on an average year of 327 pounds. That is 27 pounds higher than the proposed rule from the Board of Environmental Review is for all of the power plants in Montana by 2015. They want all power plants combined to be at 298 pounds. 327 pounds are coming out of the park on an average year. We're still here. I guess I'm just saying let's keep it in relation, let's look at what is naturally occurring, and let's try to hit a happy medium here that we have something to work with. C159

I served as a member of the SME mercury negotiating team this past winter. During the months of December and January, Tim Gregori and myself drove to Helena at least nine times putting approximately 5,000 miles on Tim's car attempting to work out an agreement with the Montana Environmental Information Center and Montana DEQ on the issues related to air quality and mercury emissions. Southern Montana Electric's purpose for negotiating with MEIC and DEQ were to provide some certainty that we could continue with our project in building Highwood station without the constant threat of legal challenges and litigation by MEIC. Also we wanted to resolve the issues related to DEQ permitting by addressing them directly. And I appreciate the efforts of the DEQ. Dave Klemp and Chuck Homer were involved in those negotiations, and we were very appreciative of the efforts that they put forward. And we wanted to come up with reasonable and workable solutions acceptable to both MEIC and DEQ. During these negotiations, SME agreed to accept an air quality permit level of 90 percent mercury emissions control, or 1.5 pounds per trillion BTUs. And I think it's important to note that the leaders of MEIC were pushing for 80 percent control, not 90, in the 2005legislature. So it seems like when we get talking about some of the control of these items the bar is always escalating higher. In return SME asked that MEIC agree that they would not file any adverse comments or bring any challenge related to our quality permit or mercury emissions position. As it turned out, we could not reach a final agreement on the details of this, and so the agreement was not finalized. I want to reiterate that SME is committed and will remain committed to a well reasoned standard for mercury control. The major environmental protection elements considered in negotiations are included in the draft air quality permit issued by DEQ. We, as members of SME, are taking all reasonable steps toward the protection of the environment in building the HGS. We have been very active with regard to our air quality permit and our mercury emissions control. The environmental community is being somewhat disingenuous when they fail to mention the efforts we have gone to towards this agreement. C159

While the plant might be able to control as much as 90 percent of the mercury, there won't be any requirement to meet that standard and the plant could control as little as 26 percent and still be in compliance. C164

Already 44 states have issued mercury advisories, including Montana. Doesn't it make sense not to put 40 more pounds of it in the air? C165

The plant will emit 36 pounds of mercury annually into the surrounding environment. EOA standards state that 200 micrograms of mercury placed into 23 gallons of water make the water unsafe for human consumption. 200 micrograms of mercury is such a small amount, that it will fit on the head of a pin. C176

Not only does this type of energy hurt the air, its effects can be felt on the land and water. These things then turn into hazards for human beings. There is a lot of toxic discharge, with elements that are poisonous to humans. C193

The mercury that comes from burning coal affects women that are pregnant and their babies. I have 2 aunts presently pregnant and I could not imagine something going wrong with their babies over burning coal. C194

The risks and health effects of mercury contamination continue to be serious and immediate. WE have known about mercury pollution for many years. It remains one of, if not the last of, the major toxic pollutants without a comprehensive plan to control its spread. We know where the sources contributing to mercury contamination are, we have a pretty good idea where it goes, and we definitely know what hard it causes to people and to wildlife. Yet, serious contamination continues. C206

Mercury contributes to birth defects in humans and animals and is linked to other human health problems. Our waters already have increased amounts of mercury form the burning of coal from other power plants in the region. The proposed Highwood Plant will dump some 40 pounds of mercury per year onto the land and into the waters in the downwind shadow of this generating plant. Great Falls is acting as a bad neighbor to Fort Benton, Lewistown, and points east if the Highwood plant is built. The Highwood Plant will definitely hurt the health of Montanans. C248

Mercury pollution is a concern, since it greatly affects the health of pregnant women and young children. The Northern Cheyenne People value their young and elderly population. C272

My husband and I have a grandson who is autistic. There are many studies and most have authenticated the fact that mercury is most likely a contributing factor in autism. We will not stand by to see other children afflicted as he is. It is a parent's nightmare to deal with this condition, and it takes all the money, energy and time that parents have to help such a child lead a decent quality life. C284

I don't comprehend how a permit could be granted considering all of the pollution this plant would pump into our air year after year after year. In 5 years, 200 lbs of mercury I found totally unacceptable from any stand point. Please explain how that is not going to cause harm to humans, wildlife, and plant life. C302

My children have Asperger's autism and believe me, a mother who has been nearly driven to the mental institution, it is a tragedy I wish on no one else. The gene responsible for the enzyme which processes mercury and other heavy metals as well as gluten and casein was found missing in 80% of a sample of autistic persons. Mercury has also been implicated in Multiple Sclerosis, which I have. We try not to eat much fish at all because of the concentration of mercury in fish. Please don't contribute any more to the environmental build-up of mercury and to these dreadful human conditions. C314, C331

I recall several years ago cutting myself and going to the drug store to buy some mercurochrome. Upon asking for it, I was told by the pharmacist that they had to quit selling it because of the high mercury content many years ago. If drug stores, indeed, *can no longer sell such a product, why would we want to have a plant that would produce mercury and several other deadly toxins in the air to eventually pollute our water? C329*

The mercury emissions this plant will produce, at an estimated 34.6 lbs. per year, is excessive, not negligible, and will add to an already high mercury burden in Montana and the United States. WE already know that consuming fish caught in Montana may be associated with increased mercury exposure and attendant health risks. C330

Response: In accordance with the provisions contained in ARM 17.8.752, mercury emissions from SME-HGS project boiler coal combustion would be controlled through the use of the BACT, which is established through the BACT analysis and determination process. BACT is defined as "an emission limitation based on the maximum degree of reduction for each pollutant subject to regulation under 42 U.S.C. 7410, et seq. or 75-2-101, et seq., Montana Code Annotated (MCA), that would be emitted from any proposed emitting unit or modification which the DEQ, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such emitting unit or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such contaminant. In no event may application of BACT result in emission of any regulated air pollutant that would exceed the emissions allowed by any applicable standard under ARM Title 17, chapter 8, subchapter 3. If the DEQ determines that technological or economic limitations on the application of measurement methodology to a particular class of emitting units would make the imposition of an emission standard infeasible, it may instead prescribe a design, equipment, work practice, or operational standard or combination thereof, in the application of BACT. Such standard must, to the highest degree possible, set forth the emission reduction achievable by implementation of such design, equipment, work practice or operation and must provide for compliance by means that achieve equivalent results…" Since there is no applicable ambient air quality standard for mercury, the DEQ's authority to regulate mercury is limited to the BACT analysis and determination process.

Due to changes in control technology, BACT is a moving target. That is, a BACT determination made at some point in time may or may not be the same as a BACT determination that is made at a later point in time. BACT requirements established through the BACT analysis and determination process conducted for the SME-HGS application for the Supplemental PD for MAQP #3423-00, which was submitted on May 16, 2006, require SME-HGS to install and operate an IECS . Further, SME-HGS must install and operate mercury specific activated carbon injection (ACI) control technology, if necessary, to achieve the BACT determined mercury emission limit of 1.5 pounds per trillion British thermal unit (lb/TBtu) heat input to the boiler based on a rolling 12-month average, or an emission rate equal to a 90% or greater reduction of mercury in the as-fired coal, as measured in lb/TBtu and based on a rolling 12-month average. A detailed mercury BACT analysis is contained in

Section III.A.7 of the permit analysis to the DEQ's Supplemental PD on MAQP #3423-00, which is incorporated as Appendix I to the DEIS.

Further, pursuant to Montana's mercury rules, which became effective on October 27, 2006, after issuance of the Supplemental PD on MAQP #3423-00, the SME-HGS project will be subject to a mercury emission limit of 0.9 lb/TBtu beginning on January 1, 2010, with the requirement of periodic BACT reviews (every 10 years) to determine whether a different emission limit constitutes BACT at that point in time.

Regarding the use of mercury-specific ACI control technology, which is currently required for the CFB boiler, if necessary, to maintain compliance with the applicable BACT-determined mercury emission limits and controls required under the Supplemental PD on MAQP #3423-00, SME-HGS provided comment indicating that it is SME-HGS's intention to install ACI on the CFB boiler during the initial construction phase of the affected CFB boiler. Based on this comment, the Department will reconsider and reevaluate the current requirement for mercury control from the CFB boiler.

2. *The Audubon program in Montana is very concerned about the recent ten Bald Eagles poisoned by mercury. Is the DEIS going to adequately address this concern about federally protected Eagles, as well as ospreys, pelicans and other fish-eating birds? C14, C95, C134*

   The DEIS does not even mention the 10 bald eagles that have suffered from mercury contamination in Montana in the last 8 months. Wildlife species are already demonstrating the impacts of mercury contamination in the environment. The additional mercury pollution from this plant will add to the cumulative impacts and may very well tip the balance for downwind populations. C95, C134

   The DEIS ignores the recent studies showing mercury's effect on nonaquatic wildlife. This document relies on 10-year old data to dismiss any effects of mercury on the terrestrial food chain. C95, C134

   We are now learning that bald eagles throughout Montana are dying from toxic mercury poisoning, and it is a well-established fact that nearly all the mercury in our environment comes from burning coal. C135

   The Fort Belknap Indian Community is very concerned with the recent news article where Wildlife Biologists from the U.S. Bureau of Land Management are launching a study of Bald Eagles that were discovered with toxic levels of mercury, some from Fort Benton, which is northeast of the proposed coal-fired plant. C320

   Response: The EIS adequately covers the phenomena of mercury emissions, deposition, methylation, bioaccumulation, and biomagnification and their potential implications for wildlife, especially higher order carnivores such as bald eagles. It was not intended as an exhaustive treatise on mercury. Overall mercury emissions

within Montana, and the United States as a whole, will be declining substantially over the next two decades as a result of coal-fired power plants implementing the federal and state mercury rules. How quickly this can translate into decreases in deposition and reductions in the quantities of mobilized mercury and methylmercury that cause problems for wildlife, fish and consumers of fish is still a matter of some scientific speculation. It is also a function of factors beyond the direct control of U.S. and Montana regulators, such as emissions from coal-rich emerging economies like that of China.

3. *Is there a loan adjustment plan for USDA farmers whose crops have a lower market value from mercury and other assorted pollutants caused by the fallout of toxic emissions from the Highwood Coal Plant? C14*

   SME needs to be prepared to compensate farmers and ranchers for reduced agricultural land values and to compensate individuals for diminished real estate values for the industrialized and contaminated landscape. Will they be required to post a bond to cover the cost of future cleanup of the site? C20

   How will SME compensate farmers for mercury contamination if ever detected, assuming the USDA – the farmer's friend – is going to fulfill its charter and do soil analysis and baseline studies? C80

   I am an organic farmer 23 miles northeast of Great Falls in the wind shadow of the proposed coal-fired plant. We also do some irrigating from the Missouri River. In reviewing the DEIS, I have a few questions. I see the conclusion that there will be no appreciable damage to agricultural land. However, I do not see any numeric standards on which this conclusion is based. Where are these located? On what standard was this conclusion based? As an organic farmer, I can only have a small percent of the EPA standards for acceptable emissions. Where are these EPA limits listed? In order to determine pollution of agricultural land, there needs to be a baseline study, and also subsequent monitoring test of agricultural land and water in the wind shadow. In regard to these tests: What is the procedure and what equipment is necessary to gather samples of soil and water? Who will be doing the analysis and what are their credentials? Who will be paying for these tests? Where, in the DEIS, is there provision for a compensation fund to compensate for loss of agricultural income? Where are the regulations for paying this compensation? Will this compensation be in perpetuity? Where is there provision for remuneration of health care costs for residents in the wind shadow, and for those who consume contaminated products produced in the contaminated area? I look forward to your response, and to adjustments in the EIS. C307

   Response: The air emissions from the HGS would be controlled under federal and state law and there is no evidence that agricultural lands would be affected by the emissions, so compensation for such speculative losses is not available.

4. *Will baseline levels of mercury, arsenic, beryllium, cadmium, manganese, and lead be obtained from water and land samples in a 100 mile radius of the plant? Will baseline pH determinations be made of the agricultural land around the coal plant to assure that emissions do not harm crops with acid rain or toxic heavy metals. Will organic farmers and local gardeners suffer adverse economic and health consequences? Will there be real time monitoring of the pollutants with data made available to the public? C20, C50 C80, C307*

   Studies from Steubenville, PA by the federal Environmental Protection Agency show that 70% of mercury depositions occur close to the plant. I do not see where in the DEIS the mercury depositions from the plant are being measured as effects the human population centers and compared with other alternatives such as wind, hydro, conservation, solar. As part of the air quality permit and the alternatives under the DEIS, potential deposition of mercury in Great Falls City proper when the wind blows from the North and/or East needs to be studied and then addressed. C78

   There is nothing in the Draft EIS concerning existing conditions with respect to amounts of mercury currently present in the prevailing wind settling area of the Highwood plant. How can you legitimately say that this "settling zone" can safely accommodate 40 pounds of mercury a year when there is no data on the amount of mercury in that area now? C294

   Response: Mercury, arsenic, beryllium, cadmium, and manganese are pollutants for which no current NAAQS and MAAQS currently exist. Therefore, while establishing baseline levels for these pollutants in the surrounding environment and monitoring any increases potentially caused by the SME-HGS project would provide the DEQ and affected public with additional information on local environmental concentrations and SME-HGS project specific deposition data, the DEQ does not have the regulatory authority to further limit these emissions from the plant based on this information and data. However, the above-cited trace-metals are regulated under the DEQ's Supplemental PD on MAQP #3423-00 through the Department's BACT analysis and determination process, which requires that SME-HGS employ fabric filter and co-benefit SO_2 controls for trace metals emissions. More detailed information regarding the control of trace metals is included in Section III.A.6 of the permit analysis to the DEQ's Supplemental PD on MAQP #3423-00. Therefore, the Supplemental PD for MAQP #3423-00 does not require ambient monitoring of these pollutants.

   Lead emissions are regulated by NAAQS and MAAQS. Computer modeling conducted as part of the MAQP process has demonstrated that all potential lead impacts from the proposed project would be in compliance with the NAAQS and MAAQS. In accordance with DEQ policy related to ambient monitoring, because lead emissions from the proposed project are relatively minor the Supplemental PD for MAQP #3423-00 does not require ambient monitoring of lead.

5. *Mercury enters the food chain through consumption of fish tainted with mercury. Fish bioaccumulate methyl mercury, which is mercury in its most dangerous form. Fish are an important source of dietary protein and essential fatty acids, so while at the same time we are advising patients to increase consumption of heart and brain healthy fish, we are also giving conflicting advice…. This conflicting advice is especially challenging for women of child bearing age, since essential fatty acids are needed for normal brain development in the unborn child, yet mercury is so slowly excreted from the body that much of the damage could be done before the woman even realizes that she's pregnant. Many of Montana's lakes already have fish advisories that limit consumption of fish because of mercury contamination. At nearby Tiber Reservoir it is recommended that a young woman not eat more than one 6 oz. serving of walleye a month. The amount of mercury in a single teaspoon can make the fish in a 1000 foot-acre lake unfit for consumption. C20, C95, C134, C176*

   Mercury is very dangerous to embryos and fetuses, where it is concentrated in the placenta and enters the body of the unborn child, where its damaging effects are most evident within the developing brain. One out of six American women of child bearing age already have blood levels of mercury that exceed federal guidelines. This puts approximately 600,000 babies at risk in the US alone. C20, C176

   Methylmercury ingestion at different levels is correlated with a variety of toxic effects, including Minamata's disease, autism in children, cardiovascular risk, and neurologic damage. C20

   The data on the public health impacts of mercury and methylmercury is overwhelming. These public health impacts include neurodevelopmental effects, neurotoxic effects, autism rates that increased with mercury emissions in a Texas study, hypertension, cardiac abnormalities in children, interference with the development of the central nervous system especially in children, visual impairments, hearing deficits, motor and mental disturbances, toxic effects on the immune system, an increase in allergic reactions, and cardiac function in adult males. C95, C134

   Mercury is wending its way through the food chain and making its way into the wombs of pregnant women, causing irreparable neurological damage to unborn children. C135, C206

   The spike of autism in the United States has a direct correlation with the increase of mercury in the environment much of which is produced by coal burning power plants. C170

   Coal-fired power plants are proven to be the most polluting way to generate electricity. Montana is accountable for 92% of the mercury that pollutes the air. Mercury, a potent neurotoxin, used in coal-fired power plants are released when the ore deposits are burned during this process to generate electricity… The damages from exposure to these neurotoxins impacts the young, the old, the unborn, and the environmental essence in general. In women and children mercury can cause developmental malformations, *visual impairments, and mental disturbances among much more drastic complications that are irreversible. C187, C204*

In the future I plan on having children of my own and while my fetus is growing inside of me I want it to be healthy and strong and I want my baby to grow without me having to worry about if my child is going to come out with an extra finger or eye….If we keep putting these plants up what is going to happen to America are we going to all become vegetables in our near future when you think of this and you still want a plant what kind of person will that make you….Methyl mercury is dangerous to the developing brain and nervous system. C200

The methyl mercury that all power plants give off damages developing brains and nervous systems. These power plants are the main source of mercury in Montana's air. Meaning that it causes neurological disorders, development disabilities, cardiac disease, impairs fetal development and hearing and visual impairments. C201

When we was talking about the power project in class the first thing that I thought of was my baby, and ever ones kids, and I thought why should babies be born in the world that has neurological disorders, developmental disabilities, visual and heaving impairment, All women that are having babies want what's best for there babies. It will be hard for the moms to do that with everything wrong with them all because of the power project. C203

Response: Thank you for your additional information on mercury's toxic effects.

6. *The audience was told during the Havre hearing in early August that this plant would produce about 1000 lbs of mercury during it projected life span of 35 years of production. During the first "Open House" in October 2004, I was told that it would produce about 44 lbs per year and then somewhere of magic our community was told last spring, 2006, that this would be 22 lbs per year by SME employees and it would mean that 770lbs. If it emits between 40 and 44 lbs a year this would mean that more than a ton and a half of mercury would be spewed out into the air. Is it that SME does not know how much mercury is going to be spread on the land via its exhaust stack? And therefore one must conclude that "clean" coal burning is a myth. C29*

   The developers of the coal plant have not been honest and forthcoming with their presentation to our city officials. Mr. Gregori of SME told city commissioners that the plant would only produce 21 pounds of mercury a year while at the same time the proposed permit allows 45 lbs per year. C78

   I live somewhat down wind from Colstrip. Colstrip is about five times or a little over five times larger than this proposed plant. At the present time, and since its inception, its been putting out probably eight times as much mercury per kilowatt hour produced than this plant will. In other words, it's probably been putting out about 40 times as much mercury as what this proposed plant will. If the opponents really wanted to get rid of a *lot of mercury, they should suggest that we build all new plants similar to this one, because this will take care of as much mercury as the touted IGCC plants would. C139*

Response: The mercury emission rate resulting from a coal combustion unit is a function of the characteristics of the combustion unit itself, the amount of mercury in the coal combusted, the form of mercury in the coal combusted, and the control efficiency of the required emission control equipment. The DEQ's Supplemental PD for MAQP #3423-00 requires that mercury emissions be controlled by IECS and ACI, if necessary, to comply with the BACT-determined mercury emission limit(s) of 1.5 lb/TBtu heat input to the boiler based on a rolling 12-month average, or an emission rate equal to a 90% or greater reduction of mercury in the as-fired coal, as measured in lb/TBtu and based on a rolling 12-month average. Mercury emissions from the proposed SME-HGS project would be variable depending on the concentration of mercury in the coal combusted for boiler operations. Mercury emission estimates using the applicable emission limit of 1.5 lb Hg/TBtu and a boiler heat input of 2626 million British thermal units per hour (MMBtu/hr) to 2771 MMBtu/hr (permitted boiler average and maximum heat input capacities), results in an estimated mercury emission rate for the SME-HGS project ranging from 34.5 to 36.4 pounds per year.

Further, pursuant to Montana's mercury rules, which became effective on October 27, 2006, after issuance of the Supplemental PD on MAQP #3423-00, the SME-HGS project would be subject to a mercury emission limit of 0.9 lb/TBtu beginning on January 1, 2010, with the requirement of periodic BACT reviews (every 10 years) to determine whether a different emission limit constitutes BACT at that point in time.

7. *MDEQ has determined that the appropriate mercury BACT emissions limit(s) for the proposed project incorporating the IECS would be either:*

   - *90 percent mercury reduction, based on a 12-month rolling average, or*
   - *1.5 lb mercury/TBtu (trillion Btu), based on a 12-month rolling average.*

   It would be helpful if additional explanation was provided regarding application of this two part mercury emission limit in the air quality permit (i.e., clarify the condition that would trigger one limit or the other). C36

   While it has been widely reported that the Highwood plant would control 90% of its mercury emissions, this standard is not imposed as a firm requirement in the draft air quality permit. In reality, the proposed emission limit of 1.5 pounds per trillion Btu would result in as little as 26% of its mercury emissions being captured. C95, C125, C134

   The DEIS suggests that the company could chose at any point in time whether to comply with a percentage reduction in mercury emissions or an emission limit for that time. Instead, the company should have to choose one or the other at the outset. It cannot switch back and forth, at will, on a hourly or monthly basis. This would be *unenforceable. The EIS contemplates allowing an emission limit of higher than 1.5 lbs/TBtu by allowing the company to switch back and forth between these two standards. This is wholly unacceptable and the impacts of a higher emission limit than 1.5 lbs/TBtu would have to be thoroughly analyzed. C95, C134*

Response: The mercury emission limits applicable to the CFB boiler are 1.5 lb/TBtu based on a rolling 12-month average, or an emission rate equal to a 90% or greater reduction of mercury in the as-fired coal, as measured in lb/TBtu and based on a rolling 12-month average. Because the limit(s) require no more than 1.5 lb/TBtu <u>or</u> 90% reduction, the applicable emission limit would be whichever limit is less stringent. The BACT process determined the level of control to be the less stringent limit based on operations.

Further, pursuant to Montana's mercury rules, which became effective on October 27, 2006, after issuance of the Supplemental PD on MAQP #3423-00, the SME-HGS project would be subject to a mercury emission limit of 0.9 lb/TBtu beginning on January 1, 2010, with the requirement of periodic BACT reviews (every 10 years) to determine whether a different emission limit constitutes BACT at that point in time.

8. *Despite claims of mercury caused by Yellowstone Park, coal-fired power plants cause 92 percent of the human caused airborne mercury, 75 percent of all mercury. And as of to date, there is still no rules for mercury controls. C48*

   Mercury emissions are another issue fully explained. I am glad that the DEIS fully gives the total of the natural mercury released yearly, how much present coal plants emit yearly and how much the HGS will emit. I believe, however, the goal for HGS is somewhat less than 34.5 pounds. I hope this plant will be an example to all other coal plants in Montana that there is more efficient way to burn coal. C306

   Response: SME-HGS would be required by permit to control mercury emissions from the boiler. The applicable mercury emission controls were established through the BACT analysis and determination process. SME-HGS would be required to control mercury emissions from the boiler through the operation of IECS. Further, SME-HGS would be required to install and operate mercury specific ACI control, or an equivalent technology, as necessary, to achieve the BACT determined mercury emission limits.

   Further, pursuant to Montana's mercury rules, which became effective on October 27, 2006, after issuance of the Supplemental PD on MAQP #3423-00, the SME-HGS project would be subject to a mercury emission limit of 0.9 lb/TBtu beginning on January 1, 2010, with the requirement of periodic BACT reviews (every 10 years) to determine whether a different emission limit constitutes BACT at that point in time.

9. *The amount of mercury (40 lbs - from the revised draft air quality permit) and lead (560 lbs) to be released by this power plant each year is of particular concern to citizens with children living in the vicinity or downwind of the power plant. Over the course of fifty*

years, what will the estimated 2,000 lbs of mercury and 28,000 lbs of lead deposited on Golden Triangle farmlands and cities do to our health and the environment? C50

Response: Lead (Pb) concentrations in ambient air are regulated through protection of the NAAQS and MAAQS. The Clean Air Act, which was last amended in 1990, requires EPA to set NAAQS for wide-spread pollutants, including Pb, from numerous and diverse sources considered harmful to public health and the environment. The Clean Air Act established two types of NAAQS, primary and secondary standards. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against visibility impairment, and damage to animals, crops, vegetation, and buildings. Through the application process for the Supplemental PD on MAQP #3423-00, SME-HGS has demonstrated compliance with the applicable NAAQS and MAAQS, as required for permit issuance. Pb emissions from the proposed CFB boiler would be limited by operation of the BACT-determined fabric filter particulate control requirement. A more detailed discussion of the Pb BACT determination is included in Section III.A.6 of the permit analysis to the DEQ's Supplemental PD on MAQP #3423-00.

There are currently no NAAQS and MAAQS for mercury. Therefore, ambient concentrations of mercury are not currently regulated through protection of a primary or secondary standard; rather, in accordance with the provisions contained in ARM 17.8.752, mercury emission rates and control strategies are regulated in Montana through implementation of BACT. Further, pursuant to Montana's mercury rules, which became effective on October 27, 2006, after issuance of the Supplemental PD on MAQP #3423-00, the SME-HGS project would be subject to a mercury emission limit of 0.9 lb/TBtu beginning on January 1, 2010, with the requirement of periodic BACT reviews (every 10 years) to determine whether a different emission limit constitutes BACT at that point in time.

An MAQP issued by the DEQ provides the owner and operator of an affected source of air pollution with a license to emit regulated levels of air pollutants, including mercury. The purpose and intent of current Montana and Federal law regulating industrial sources of air pollution is to allow for business and economic development while maintaining a clean and healthful environment through appropriate regulation of the affected source. Through the permitting process for MAQP #3423-00, SME-HGS has demonstrated compliance with all applicable requirements of law, as required for permit issuance.

10. *The DEIS does not provide a monitoring plan to validate and address the effects of airborne pollutants on local surface waters and aquatic organisms. Background monitoring would be needed to establish baseline levels of mercury and other pollutants. Fish should also be sampled to determine potential bio-concentration of mercury as it moves up trophic levels. Control sites could be selected to help differentiate between the proposed generating station's effects and other major pollution sources. Without an*

aquatic monitoring plan, it will be impossible to know the ultimate fate of released toxins and the associated human health risk to downwind Montana communities from surface water contamination. C78

The effects of particulate matter, acid rain, mercury deposition under a range of alternatives as it affects area farmland needs to be considered and compared under the various alternatives. There are no tests showing baseline levels on area farmland currently present for pollution from the plant. It is not sufficient to say that airborne contaminants will not have a significant impact on area farmland without having a standard, a baseline study and a method of monitoring. C78

Response: In place of ambient monitoring for regulated pollutants, the air quality permitting process requires computer modeling to demonstrate that the proposed project will not result in ambient concentrations of pollutants considered harmful to public health and the environment. Limits and conditions in the permit are then set based on parameters modeled or on more stringent limits established through the BACT analysis and determination process. Computer modeling is conducted only for those pollutants for which a NAAQS and MAAQS currently exists and for which there is project specific concern. The Clean Air Act, which was last amended in 1990, requires EPA to set NAAQS for wide-spread pollutants from numerous and diverse sources considered harmful to public health and the environment. The Clean Air Act established two types of NAAQS, primary and secondary standards. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against visibility impairment, and damage to animals, crops, vegetation, and buildings. The MAAQS are at least as stringent, or more stringent than, the NAAQS. SME-HGS has demonstrated compliance with the applicable NAAQS and MAAQS for CO, NO_x, Ozone (VOCs are regulated as a precursor to ozone formation), Pb, PM_{10}, SO_2 as well as hydrogen sulfide and visibility impact standards for the proposed project. Therefore, the Supplemental PD for MAQP #3423-00 does not require ambient monitoring for Criteria Pollutants.

Mercury is a pollutant for which no current ambient air quality standard exists. Therefore, while establishing baseline mercury levels in the surrounding environment and monitoring any increases potentially caused by the SME-HGS project would provide the DEQ and affected public with additional information on local environmental mercury concentrations and SME-HGS project specific mercury deposition data, the DEQ does not have the regulatory authority to further limit mercury emissions from the plant based on this information and data. Mercury limits and conditions in the permit were established through the BACT analysis and determination process. Therefore, the Supplemental PD for MAQP #3423-00 does not require ambient monitoring of mercury.

11. *What levels of mercury could be expected in the type of coal that was mined near Great Falls, especially since SME 'speculated' that mining local coal could be a 'remote' possibility? C80*

Response: The DEQ is unaware of speculation that SME-HGS intends to mine and utilize coal from a site near Great Falls. While the Supplemental PD for MAQP #3423-00 does not specifically preclude the use of a coal source near Great Falls, compliance with various requirements contained in the Supplemental PD for MAQP #3423-00 (which are based specifically on the combustion of Powder River Basin coal as proposed by SME-HGS) would be dependent on the combustion of coal similar to that analyzed under the permit action. Regardless of the coal fuel source used for operations, SME-HGS would be required to comply with the requirements of the air quality permit.

12. *The Draft EIS claims that mercury does not deposit locally and therefore the impacts from this coal plant will be insignificant. This is simply not true. Research conducted by the U.S. Environmental Protection Agency proves that mercury deposits locally. Studies demonstrate that mercury deposits locally, mercury levels are higher near coal-fired power plants and that when mercury emissions decrease locally, mercury levels in fish decrease as well. C95, C134*

Although the DEIS cites the previously mentioned Steubenville Ohio study in the list of references, there is no mention of it in the text of the document. C95, C134

Response: We are aware of the EPA-funded Steubenville, Ohio study, which had not yet appeared in print at the time the DEIS was under preparation. The findings of this study indicate higher levels of local deposition of mercury emitted from eastern power plants using eastern coal sources than previously thought. Its relevance to western coal sources is uncertain at this time. Our understanding of mercury's fate once emitted to the air continues to evolve and advance, and regulatory programs evolve accordingly, implementing stricter standards when science indicates their necessity. Montana's mercury rules, adopted after the results of the Steubenville study were publicized, are based, in part on concern for local depositions.

13. *The DEIS says that the no action alternative would lead to higher mercury emissions. This is unsubstantiated, and completely erroneous. There are many ways to generate electricity that have NO mercury emissions. This assumes that only dirtier coal will be used to fill electricity needs. C95, C134*

Response: The FEIS indicates that due to the inability to predict precisely which sources of generation would provide power to SME, it is impossible to state whether mercury emissions would be equal, lower, or higher.

14. *The EIS erroneously says that controlling mercury from subbituminous coals is highly variable. This is simply not true. This is based on outdated information and should be updated. C95, C134*

    Response: The majority of research on controlling mercury from coal combustion has been done on eastern coals. Some research has been completed on subbituminous coal, but only for short test periods in a limited number of boilers. Hg emission control on subbituminous coal has been shown to be variable and dependent on the availability of chlorine or other halogens. Until SME's test burn, no Hg emissions data existed for Powder River Basin Coal in a CFB boiler; and those data were in a pilot scale facility for a short term test. More data are needed through longer term tests to fully characterize Hg emissions from different coals in different boiler and pollution control configurations.

15. *The actual emissions of this plant could be over 46 pounds per year based on the emission limit of 1.5 lbs/TBtu with the ability to raise that limit if the coal mercury content is high. That could result in more than one ton of mercury entering the downwind environment over the life of the plant. The EIS fails to consider this cumulative impact. C95, C134*

    Mercury is an unacceptable pollutant at any level. C111

    Response: There are currently no NAAQS or MAAQS for mercury. Therefore, ambient concentrations of Hg are not currently regulated through protection of a primary or secondary standard; rather, mercury emission rates are regulated in Montana through implementation of BACT in the air permitting program. The Supplemental PD for MAQP #3423-00 addresses allowable mercury emissions through the BACT analysis.

    The DEQ's Supplemental PD for MAQP #3423-00 requires that mercury emissions be controlled by IECS and ACI, if necessary, to comply with the BACT determined mercury emission limit(s) of 1.5 lb/TBtu heat input to the boiler based on a rolling 12-month average, or an emission rate equal to a 90% or greater reduction of mercury in the as-fired coal, as measured in lb/TBtu and based on a rolling 12-month average. Therefore, mercury emissions from the proposed SME-HGS project would be variable depending on the concentration of mercury in the coal combusted for boiler operations. Mercury emission estimates using the applicable emission limit of 1.5 lb Hg/TBtu and a boiler heat input of 2626 million British thermal units per hour (MMBtu/hr) to 2771 MMBtu/hr (permitted boiler average and maximum heat input capacities), results in an estimated mercury emission rate for the SME-HGS project ranging from 34.5 to 36.4 pounds per year.

16. *If we're going to have mercury being emitted, I think it's only right that the people down wind know how much is coming their way. And with computer modeling, it would not be difficult to show and tell publicly what those people can expect from this plant. Over different parts of the year, different emissions would be coming in different directions.*

And those at high risk, those who are expecting to have problems could be advised to leave that area, rather than be exposed to something that would deteriorate their health more. If the companies and owners are not wanting to do that, maybe they should have some responsibility and liability in the bills that would be accumulated by the deteriorating health of these people. C110

Response: Neither Montana nor federal law contains regulations for ambient concentrations of mercury. There would be no standard against which to compare the mercury modeling results.

17. *The effects of mercury on human health are cumulative. What is a little bit today, over the course of time becomes a lot. 55 pounds sounds like nothing, but it was certainly enough to make mercury thermometers illegal because that little tiny bit inside the mercury thermometer multiplied by many, many households meant that there would be children born brain damaged. In fact there would be people suffering from neurotoxins, because, make no mistake, mercury is, no matter what anyone wants to say, it is a neurotoxin. It does not belong in our environment, and it accumulates over time. It accumulates in the plants. It accumulates in the animals. We eat the animals. It accumulates in our body. It accumulates over generations. C118*

    Response: Thank you for comment.

18. *Page 3-36, Section 3.3.5, third paragraph. "inorganic forms of mercury" should be "mercurous and mercuric forms of mercury". Elemental mercury (Hg0) is also an inorganic form of mercury. C128*

    Response: This change has been made.

19. *Page 3-37, Figure 3-19. Is it possible to modify this figure to show "Industrialization (circa 1880 to present)" as covering that time period? This label currently falls after "WW II manufacturing" which is 1940-1945. The two labels are thus not in chronological order. Labels are also not aligned consistently on the graph. For example, Tambora lies directly to the right of the corresponding peak but Krakatau lies above its peak and Mt. St. Helens appears to lie below its peak. Most readers should be able to figure out how the labels correspond to the graph but it would be best if the labels are modified. C128*

    Response: The errors in this graphic are acknowledged. However, even with these errors it has value in showing the spikes in mercury deposition associated with industrialization. The figure comes from another publication, and modifying it would require obtaining permission from the author and publication to do so.

20. *Page 3-38, first paragraph, third line. The reference is listed as "EPA, 2006". Is this EPA 2006a, or 2006b? C128*

    Response: The reference is "EPA, 2006a."

21. *Page 3-40, top of the page. SME suggests it would be appropriate to discuss regional mercury deposition patterns. While data on the U.S. as a whole are helpful, data for the Western U.S. would be even better (i.e., it seems likely that for the Western U.S., including Montana, the contribution from non-U.S. sources is likely to be well above 80%). C128*

    Response: The agencies were unable to find additional references specifically concerning Western U.S. regional mercury deposition patterns in time for the preparation of the FEIS.

22. *Page 3-41, top of the page. SME suggests it would be appropriate to indicate how Montana's proposed mercury rule is more stringent than federal regulations. For example, "Montana's proposed mercury emissions rule for coal-fired generating plants will incorporate standards requiring 80-90% control of mercury emissions compared to approximately 70% control under CAMR, and as early as eight years before CAMR deadlines." C128*

    Response: Pursuant to Montana's mercury rules, which became effective on October 27, 2006, after issuance of the Supplemental PD on MAQP #3423-00, the SME-HGS project would be subject to a mercury emission limit of 0.9 lb/TBtu beginning on January 1, 2010, with the requirement of periodic BACT reviews (every 10 years) to determine whether a different emission limit constitutes BACT at that point in time. In all aspects, the Montana mercury rule is at least as stringent, and in many aspects more stringent, than the recently promulgated Federal Clean Air Mercury Rules.

23. *Page 3-41, Figure 3-24. If feasible, the statement "Mercury transforms into methylmercury in soils and water…" should be changed into "Mercury transformed into methylmercury in sediment…". First, mercury does not transform itself. Second, the methylation process generally requires reducing conditions which would not be present in most water or soil but are often found in aquatic sediments. C128*

    Response: Comment acknowledged. Mercury does not transform itself but is transformed to methylmercury via bacterial action. However, even with the wording in the figure, the figure has value in showing mercury exposure pathways. This is an EPA figure that cannot be modified.

24. *Page 3-41, fourth paragraph. The first sentence, "Plants, animals, ….…water and food" refers to concerns about mercury in general, not specifically methylmercury as discussed in this section and seems out of place. As an alternative, move the sentence to the beginning of the preceding paragraph. C128*

    Response: This change has been made.

25. *Page 3-42, first paragraph. The WHO/ATSDR estimates are for the general population. Consider changing the text to "…99.6 percent of methylmercury intake in the general*

population arises from fish consumption…". We are also unsure of the value in citing inorganic mercury intake data here. The focus of this section is methylmercury and the inorganic mercury data seem out of place. If the inorganic mercury intake text is retained, the DEIS might consider indicating that inorganic mercury is associated with other components of the diet [i.e., not fish]. C128

Response: This change has been made.

26. *Page 3-42, second paragraph. Consider changing "first symptoms" to "most subtle effects". First symptoms implies frank toxicity as well as immediate effects, as opposed to subtle effects which may occur at a later time point. The fish consumption guidelines are based on a reference dose that considers very subtle neurodevelopmental effects (so subtle they are evident only when studied across populations, not in individuals) which are detected well after exposure. C128*

Response: This change has been made.

27. *Page 3-42, fourth paragraph. The DEIS should provide a reference for the concentrations of mercury in commercial tuna fish. Carrington and Bolger (Risk Analysis, 2002, Vol. 22(4), pp. 689-699) report a value of 0.17 ppm. C128*

Response: The range of methylmercury concentrations in canned tuna was obtained from the Montana Department of Public Health and Human Services (MDPHHS) reference cited at the end of the paragraph.

28. *Page 3-43, first paragraph. There is some mixing of the effects of different forms of mercury in this paragraph. We suggest the following revision:*

> *"Mercury is a well-documented human toxin at sufficiently high doses. For example, clinically observable neurotoxicity has been observed following exposure to large amounts of inorganic mercury (e.g., "Mad Hatters Disease"). Consumption of highly contaminated foodstuffs (e.g., methylmercury contaminated fish or grain) has also induced acute neurotoxicity. The most subtle effects of mercury are believed to be associated with methylmercury exposure during pregnancy. Effects on individuals exposed in utero at comparatively low doses may include impaired cognitive test performance and deficits in sensory ability. These effects may progress to tremors, inability to walk, convulsions and death if exposure levels are extremely high (EPA, 1997e). High exposures to inorganic mercury may also result in permanent kidney damage (EPA, 2003)." C128*

Response: This suggested change in wording has been adopted.

29. *Page 3-43, fourth paragraph. This paragraph should provide data on levels of mercury that caused adverse effects in wildlife and associated references. A recent study by Weech et al. (Weech SA, Scheuhammer AM, Elliott JE. Mercury exposure and reproduction in*

fish-eating birds breeding in the Pinchi Lake region, British Columbia, Canada. Environ Toxicol Chem. 2006 25(5):1433-40) suggested that reproductive effects occur above an egg mercury concentration range of 0.5-1.0 microgram/gram wet wt. These authors studied a lake polluted by former mining activities and found that reproductive success of bird species was not adversely affected when compared to neighboring lakes not influenced by mining waste. C128

Response: Volume VII of the 1997 EPA Mercury Study Report to Congress, from which this paragraph is drawn, included a review of the entire mercury literature to date on the effects of mercury on wildlife – thousands of scientific studies. The study above adds to this continually growing literature, and will help further refine our ever-growing knowledge of mercury's impacts.

30. *Page 3-43, final paragraph. "In the industrialized era, human activities have mobilized greater amounts of mercury, thereby exposing organisms, ecosystems, and human beings to a particularly toxic form, methylmercury." The statement implies that methylmercury exposures are only due to human activities. There were undoubtedly methylmercury exposures prior to the industrial era, although they presumably involved lower levels than they do today. It might be better to end with:"…to increased levels of mercury, including increased levels of a particularly toxic form, methylmercury."*

    "In low doses, methylmercury can be voided by the body and is not generally problematic…". In order to make this sentence accurate, it should be "low, periodic or occasional doses". A low but sustained dose would not be entirely eliminated by the body, because the half-life is 70 days whether the dose is high or low. However, the resulting body mercury levels may never be sufficient to produce health effects if they remain below the toxicological threshold. "While mercury contamination is widespread, indeed global. the most serious incidents to date have tended to involve specific point source discharges to water…" We suggest this statement should be more definitive: "While mercury contamination is widespread, indeed global, cases involving serious health impacts have arisen from specific point source discharges to water or accidental food contamination rather than dispersed emissions to air." C128

    Response: The suggested changes have been made.

31. *The compartmentalized structure of the document does not cross reference important facts from one section to another in a meaningful way. For example, a rather thorough treatment of hazards of mercury poisoning stands alone (3.3.5), so that sections dealing with biological resources (4.6.2) or recreation (4.8.2) do not even mention this important subject. The sections do not interact well enough to reach the predictable conclusion that the suggested edibility of fish caught in local streams will be compromised. There is no warning here about maximum number of fish per month a pregnant woman may safely consume, how that may have an adverse effect on recreation or the socioeconomic environment. C10*

Response: More cross references have been added to the FEIS. Predictive models are not available that could link mercury emissions from a CFB plant to contamination in local streams. The warning about the maximum number of fish per month per month a pregnant woman may safely consume is outside the scope of this EIS. The monitoring of fish contamination and posting of consumption advisories is the responsibility of Montana Fish, Wildlife and Parks.

AIR-603 AIR QUALITY – GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

1. *Most knowledgeable researchers agree that we should be reducing carbon dioxide and other greenhouse gases in the atmosphere, not adding to them. It's accepted by very qualified scientists that there is a strong probability that this compound is affecting global climate in a negative way. C1, C4, C20, C64, C75, C134, C284*

   The CFB technology releases a disproportionate amount of CO_2 in the atmosphere. C4, C61, C82, C88, C125, C146, C335

   The proposed Highwood plant would also release massive quantities of carbon dioxide and nitrous oxides, greenhouse gases that contribute to global warming. Although not currently regulated federally, several western states are developing regulations for these gases and Montana will probably join these states before the Highwood project is completed. At this point, no firm methods of eliminating or mitigating this pollution have been proposed or required for the air quality permit. C12, C20, C81

   I feel that with global warming in full view we here in Montana, we must do what we can to slow the process. The plant would pour millions of tons of greenhouse gases into the air, as well as other toxics. Other good reasons to stop this waste of energy include: shipping a million tons of coal from S.E. Montana per year. Think of all the fuel that will waste, more greenhouse gas. C35, C87

   The DEIS says this one plant would release about three million tons worth of CO2 and other global warming gases each year. It will increase Montanans' overall greenhouse emissions by 7.5 percent. There is no plan for controlling the CO2 emissions. And the EIS doesn't consider the cost of retrofitting the plant to convert CO2 and control it. C48

   How much greenhouse gas emissions will result from vehicles having to deliver limestone to the HGS-Salem site from Limestone Hills, south of Helena in Townsend? C80

   Global warming is the most serious environmental threat facing the planet today, and unlike any we have encountered before. The copious quantities of global warming pollution that would be released by Highwood would only add to this dire problem. C95, C134, C164

   The comments on page 4-54 reflect the true devastation from this power plant. Comments are made that there is not enough arable land in the world to sequester the carbon dioxide from this plant as well as other sources of greenhouse gases. This points out that we need to be going a different direction with power generation. If we cannot offset the carbon dioxide created from this plant then we should not be building it. This will only accelerate the global warming problem. C104

   Other developed, industrialized countries in the world with a similar or higher standard of living and quality of life use half or less fossil fuel per capita than we do in the United

States. And among the 50 states, Montana has one of the highest per capita rates of CO2 production, even without counting that produced by generating electricity for export -- about half of our total generating capacity. Most other industrialized nations have already agreed to limit CO2 production -- the so-called "Kyoto Protocols" which are designed to absolutely decrease CO2 production by 10% or more by 2010 in the signatory countries. (In contrast, the Highwood Station alone will increase Montana's total CO2 emissions by about 7% - a direct violation of Kyoto and other climate mitigation strategies.) Only Canada and Australia use similar amounts per capita of fossil fuel (and thus produce C02), and both of those countries are now attempting to meet or exceed the Kyoto standards. China, India, and Russia have joined us in refusing to endorse Kyoto, but those countries use one-fourth or less fossil fuels per capita as we do, and they are amenable to agreements which don't put them at a relative disadvantage to countries which already pollute much more. If the United States was to join or advance this effort, the rest of the world would have to follow, or else face trade sanctions and other penalties which would quickly persuade them to join. In Europe, an $11/ton carbon tax is already in effect, virtually precluding further building of coal or other fossil fuel power generating plants which release most or all of their CO2 into the atmosphere. C134

Instead of acknowledging the role of fossil fuel consumption in global warming, our federal and state governments have fought it continuously, and several large corporations have spent 10's of millions of dollars sponsoring false science and disinformation campaigns. Since Hurricane Katrina a year ago, the mass media, the scientific community, and many national and regional environmental groups and state agencies have moved to reduce CO2 production by signing on with Kyoto or otherwise limiting greenhouse gas emissions voluntarily. Several states including California have independently adopted Kyoto standards or better to reduce the impact of global warming on their coastlines and agricultural production. Montana should actively pursue this issue in the next Legislature, and we are already promoting legislation and lining up sponsors. C134

The actual minority opinion on global warming is the one I support. The actual minority position on global warming is not the handful of scientists who say it doesn't exist. The minority opinion on global warming is, there's hundreds of scientists that think this way, is it's going to be much worse and much faster than anybody currently realizes. Therefore, this dirty power plant is risky, expensive, and unreliable. C151

Montana is a very rural state that depends on our ranch and farmland as well as the tourism based on our wild lands and hunting. We are currently in our 7th year of drought that has cost of millions of dollars in loss in all these areas. I believe, as do many recent climate models, that this drought is greatly influenced by excessive CO2 levels that we have put into our atmosphere…The DEIS for the HGS does not address the addition of so much CO2 to the atmosphere of our area. It does not sufficiently address impact to the local flora and fauna surrounding the site and it does not address the more global aspects of additional CO2 in our atmosphere. Furthermore, the DEIS does not address the CO2 emissions that will be indirectly caused by the needed transport of the coal to *the Highwood plant from distant mines…I would encourage you to address the CO2 effects in more than the three pages currently set aside in the DEIS. The issue is much more encompassing than can be addressed in so brief a format. C172*

Global Warming Pollution increased 18% between 1990 and 2003 in carbon dioxide emissions. But again 98% of carbon dioxide emissions in the United States come from the burning of fossil fuels. C204

As designed, the project would needlessly threaten environmental quality by emitting millions of tons of global warming pollution each year. C116, C209, C210, C212, C213, C214, C215, C216, C217, C218, C219, C220, C221, C222, C223, C224, C225, C226, C227, C228, C229, C230, C231, C232, C233, C234, C235, C236, C237, C238, C239, C240, C241, C242, C243, C244, C245, C246, C247, C252, C253, C274, C278, C282, C285, C286, C287, C288, C295, C300, C310, C315, C319, C330

Global warming is real. The speculation has ended. The science cannot be refuted….Great Falls should not contribute to this worldwide problem by building a power plant, which the local area does not need for its immediate, and long-term electricity needs. C248, C288

With global warming worsening, the last thing Montana, the U.S. and the world needs is another coal-fired power plant, especially one using 20 year old technology, one producing power that may not be needed in Montana & a company that may fail….We are interested in reducing greenhouse gases, not increasing them. We need to require the use of the latest technology & alternative sources of energy to insure the healthy future for mankind. C258

The HGS will emit over 3 million tons of CO2 per year…the equivalent of adding a half million vehicles to our roadways in Montana. What, specifically will be done to mitigate this pollution and its effects on global warming? C294

It is unfathomable, knowing what we know about global warming and the universal consequences of burning fossil fuels, that this project can be moving forward. How can an agency of this state, charged with protecting the health and welfare of the citizens of Montana…and morally, the health and welfare of human beings everywhere…be on the verge of allowing this proposal to be permitted? It is simply astounding. C297

I am writing this on salvaged paper in order to reduce the cutting of trees which are necessary to offset the CO_2 *emissions of coal fired power plants…. So the reason I am writing this is to ask that you publicly denounce this project for what it truly is: an outdated, unnecessary and ultimately suicidal undertaking. I ask that coal fired generation end. C298*

I've just finished reading Bill McKibben's book The End of Nature *and plants like Highwood only hasten our global warming problems. C309*

Have you seen Al Gore's movie "An Inconvenient Truth?" It demonstrates how truly dire the earth's situation is and how people tend to wait, like the frog in the increasingly hot water, because it is inconvenient, until it is too late. C314

The scientific debate is over. The evidence is overwhelming and growing with each new study: greenhouse gas production by humans is a major factor in the current global warming trend. This fact has sweeping implications for the health and welfare of citizens in the United States as a whole, as well as in Montana and even Great Falls in particular. No matter how seemingly insignificant an individual proposal is, it must be considered in the context of its contribution to this looming crisis. We have a moral obligation to all present and future generations to immediately change the dangerous course we are on. It is time to begin moving away from old fossil fuel technologies and toward renewable energy and an overall reduction in greenhouse gas production. Every step in the wrong direction exacerbates the problem, and every step in the right direction has a beneficial impact. C334

The proposed HGS is an unnecessary and ill-advised giant step BACKWARD! The DEIS fails to fully discuss and consider the direct, indirect and cumulative effects of a nearly 8% increase in Montana's total greenhouse gas production….RUS/DEQ/SME simply cannot dismiss the contribution of the proposed HGS to global warming as "impossible" to quantify. Using that rationale, there would be no reason for any single new power plant being designed anywhere in the US to turn away from technologies that contribute to global warming. C334

Response: The Montana and Federal Clean Air Act regulations do not currently regulate greenhouse gas emissions, including carbon dioxide (CO_2) emissions, from regulated sources of air pollution. Therefore, the DEQ does not have the authority to regulate these emissions under MAQP #3423-00 for the proposed SME-HGS project. Should a state law ever be passed to regulated greenhouse gasses, the Montana Board of Environmental Review has the authority to adopt appropriate rules and regulations.

On December 13, 2005 Governor Schweitzer issued a letter directing DEQ to establish a Climate Change Advisory Committee (CCAC), a broad based group of Montana citizens appointed by the Governor to develop a state climate action plan by July 2007. Under DEQ's direction, this initiative will examine state level greenhouse gas reduction (GHG) opportunities in all sectors in Montana, and take into consideration opportunities to "save money, conserve energy, and bolster the Montana economy." The Center for Climate Strategies (CCS) will work in partnership with DEQ to provide facilitation and technical support for the climate action planning process to meet these goals. The goals of this process include:

1) Development of a current and comprehensive inventory and forecast of GHG emissions in Montana from 1990 to 2020;

2) Development of a comprehensive set of individual policy recommendations to the Governor to reduce GHG emissions in Montana.

The CCAC process will seek (but not mandate) consensus on these findings and recommendations. Statewide GHG reduction goals, to the extent that they are developed, will be based on discussions with DEQ and this group.

2. *The likelihood of a federally imposed carbon tax on CFB plants in the near future is high, making this plant less economical. This is not addressed in the DEIS, and needs to be. C4, C20, C70, C77, C78, C80, C126, C164, C174, C294*

   The Highwood plant poses other financial risks that have not been adequately considered (even though MEPA requires an evaluation of the economic costs of the proposed project, as mentioned on page 1-16). First, it is reasonably foreseeable that CO2 will become a regulated pollutant. In its Fifth Regional Power Plan (released in 2005), the Northwest Power and Conservation Council estimated a 67% likelihood of a "carbon tax" being imposed in the near future that could be as high as $30 per ton by the year 2016. (See Endnote #33) Closer to home, NorthWestern Energy assumed a figure of $11 per ton as its "expected" tax in its latest default supply plan. (See Endnote #34) With 2.4 million tons of carbon dioxide emissions (and 3 million tons of CO2 equivalent emissions), an $11 per ton CO2 tax would increase Highwood's annual operating costs by more than $25 million. C95, C134, C167

   Considering this plant is projected to emit 2.3 tons of CO2 each year, it's carbon tax of $11 per ton were put on, as has been discussed, that would increase the annual operating costs of the Highwood station by more than 25 million. This represents the price increase to the consumer of more than $11 per megawatt hour, significantly changing the economics of this plant. It is irresponsible for SME and the EIS not to consider this. C48

   The governor of California ordered, last year, that the state reduce its greenhouse-gas emissions 25% by 2020. Its legislature may soon require existing companies to dramatically reduce their emissions. The costs for those companies will be large and some marginal operations may go out of business. If we start with a new power plant with out of date technology, what will its costs be when Montana or the federal government require them to reduce emissions? Will they go out of business as well? C64

   At a minimum, the final EIS should take a hard look at the long-term environmental and economic consequences of greenhouse gases produced under the preferred alternative and an IGCC alternative, including the costs associated with sequestering carbon dioxide. We hear a lot about a future imposition of a "carbon tax" on energy production and this possibility should be factored into any analysis of long-term consequences of a coal generating plant. C317

   Response: In the event a carbon tax or other GHG regulation is implemented, it is likely all owners of fossil fuel generation will be equally affected in that they will need to comply and costs of compliance will be increased across all fossil fuel forms

of generation. In addition, a new fossil-fueled power facility will have an advantage as it should have lower emissions for each unit of electricity produced. If a carbon tax is applied, there will be increased pressure on the federal power marketing agencies to "share" the benefits associated with BPA, WAPA, TVA and others with a broader segment of the population.

A carbon tax was not figured into the HGS project economics because such a tax does not currently exist, making any assumptions of amount and timing speculative. If a carbon tax were imposed in the future, it would likely apply to fossil fuels in general, including natural gas, oil, and diesel, resulting in economic impacts throughout society. Even the IGCC technology results in production of CO_2, and without an effective capture and sequestration technology -- which has not been demonstrated in conjunction with a power plant in the U.S. to date -- a carbon tax would affect the economics of an IGCC plant. Thus, it is incorrect to imply that a carbon tax will single out HGS, impacting only SME customers. Over 50 percent of the electrical generation in the US is coal-fired and Montana is at about 50 percent coal-fired generation. Since coal-fired generation is the main source of the US and Montana electrical generation system, any increased costs of generation, such as a carbon tax, will be passed along to all consumers of the electricity. The accompanying electricity markets are likely to respond with higher electricity prices because of the impacts on coal and natural gas as generation fuels. It is likely that any cost increases for HGS power associated with a carbon tax will be mirrored in the electric rates paid by all consumers, making the economic disparity argument a wash.

3. *The news media have gone full circle in concerns about climate change. We've gone to where we were talking about global warming in the 1930s, we talked about the ice age in 1970, and now we're talking about global warming again. I think the idea of global warming is cyclical as the climate changes itself. And I don't believe that man has that much influence in global warming. Climate change is inevitable. C6*

   The noted science writer Michael Crichton in his book State of Fear*, which is a highly footnoted and referenced book, talks about global warming and the media's role in overemphasizing and creating fear over this to help sell magazines. It talks well about the temperature changes and the rises. Not only are we experiencing increase in temperature changes in some areas, but we're also seeing decreasing temperature changes. It's a cycle. C6*

   I feel that global warming is a fact of life. We've been global warming since the ice age. C103, C134

   Global warming is a natural cycle of the sun/earth. C211

   All this earth warming being waved in opposition to advancement of Montana gets old….The "NO" wavers scream "EARTH WARMING." Ms. Johnson, what you are seeing has existed since the beginning of time. Some 16 million years ago this areas was *plastered with Dinosaurs, a reported tropical, warm blooded creature. Those disappeared and this area, now known as Montana, was plastered with ICE. That melted and now this areas is plastered with wheat fields. C260*

Response: As noted in the EIS, the preponderance of scientific evidence and opinion over the last two decades is that human activity, in releasing greenhouse gases, is indeed causing the climate to warm. This has been documented in numerous reports, studies and reviews. Best-selling author Michael Crichton is a science fiction writer, not a climatologist.

4. *The DEIS does not adequately consider the causes and effects of global warming, along with current and pending regulation of CO2 emissions. Because a CFB plant emits CO2, its impact can be lessened or avoided either with an IGCC plant or with alternate clean energy sources. There is NO GOOD REASON to build a CFB plant when we have such an abundance of appropriate technology and the natural resources to utilize them such as an abundance of wind and sun!!! C8*

   Given current evidence of global warming, any permitting agency willing to permit the proposed action at the minimum requirements for permit regulations is working contradictory to public need and well being. C25

   <u>The global warming</u> issue should make it critical to look for alternatives to coal. Why would we go with a known contributor to global warming when there are alternatives. Its been said that we have perhaps ten years to turn a corner before we reach a point of no return on global warming. What is the reason we don't go with hydro-electric or wind power? C33

   Global warming will force individual energy consumers to cut back on their energy consumption. This will change our lives. W hen it gets really hot, and the global warming makes it even hotter, the air conditioning is going to make it -- there's going to be more demand for air conditioning. That's going to, in turn, contribute more to the problem of global warming. So to me it doesn't make sense to use coal fossil fuels to meet our energy needs. And the cost of this is actually going to be more from the standpoint of the energy consumer. C66

   There is not much we can do about the old generating plants that were built with no regard for pollution and green house gas production. But we can and must do the very best we can now. We must produce electricity in the cleanest possible way. To do anything less would be unconscionable. C88

   When it comes to greenhouse gases, the proposed "circulating fluidized bed" (CFB) combustion method is the worst available technology. CFB plants not only have all of the carbon emissions of a traditional pulverized coal plant, but also produce significant emissions of nitrous oxide (a greenhouse gas approximately 300 times more harmful than carbon-dioxide, on a molecule-to-molecule basis). C95, C134

By ignoring carbon risk, SME unfairly biases its analysis in favor of a specific coal technology with extremely high greenhouse gas emissions. If carbon costs were considered, other technologies such as IGCC, natural gas-fired combustion turbines, or a combination of energy efficiency and clean renewable energy sources would likely emerge as more cost-effective options. C95, C134

Overall, any new coal-fired generator is not a good idea. No matter how advanced it might be, it would add pollutants in the form of CO2 greenhouse gases to the atmosphere, which will make global warming worse. C122

Response: SME-HGS proposed a coal-fired power plant incorporating a CFB Boiler for the production of steam to be routed to a steam turbine, which in turn drives an electric generator capable of producing electrical power. The EPA NSR Manual, which provides guidance on the BACT analysis and determination process for major sources of air pollution, states that, "historically, EPA has not considered the BACT requirement a means to re-define the design of the source when considering available control technologies." However, the NSR Manual goes on to indicate "…this is an aspect of the New Source Review – Prevention of Significant Deterioration permitting process in which states have the discretion to engage in a broader analysis if they so desire."

Further, a recent EPA policy/guidance statement titled *Best Available Control Technology Requirements for Coal-Fired Power Plants*, authored by Stephen D. Page, Director, EPA Office of Air Quality, Planning, and Standards (December 13, 2005), provides that inclusion of technologies such as integrated gasification combined cycle (IGCC) in the BACT analysis for a coal-fired power plant, such as that proposed in this case, constitutes re-definition of the source and is not appropriate under the BACT analysis and determination process. EPA has recently indicated that the policy described in this memo does not constitute the EPA's final action on this issue but does constitute EPA policy.

Based on Department analysis of the proposed project, the Department determined that redefining the source from a CFB project to an IGCC project is not appropriate, in this case. For a more detailed analysis of IGCC, including an analysis of technical, environmental, and economic impacts, associated with the use of IGCC for the SME-HGS project, see Section III, BACT Determination, of the permit analysis to the Supplemental Preliminary Determination on MAQP #3423-00 included as *Attachment I, DEQ Supplementary Preliminary Determination on Air Quality Permit for HGS*, of the DEIS.

The Department understands that the carbon sequestration (greenhouse gas reduction) capabilities of the IGCC technology potentially represents a significant environmental benefit associated with the application of this technology when compared to historically prevalent coal-fired power plant projects (CFB and PC). However, greenhouse gasses, such as carbon dioxide (CO_2), are not currently regulated under Montana or Federal Clean Air Act regulations.

5. *The generally fair treatment of this subject of climate change in the DEIS reaches no conclusion on the subject of the proposed HGS. It does state that "…climate change is the ultimate global issue..," but does not go one step beyond that to the only conclusion-that to stop its progress we must each do our part to reduce GHG emissions. It is irresponsible and may one day be viewed as criminal that a new coal plant such as this be built when we know better. C10*

   In the unknown scenario of the degradation of life on this planet by the agency of global climate change, for example, we can expect few major catastrophic events like the flooding of New Orleans last year. We can look for tiny, incremental and unnoticeable fluctuations tending in a certain direction over the years. We can expect a death of a thousand cuts rather than a single catastrophe, in much the same way that each coal fired power plant deals another blow to the habitability of this planet. C10

   SME admits that global warming is a serious problem, but the draft DEIS doesn't address what they're going to do about it. They dismiss it as something that they don't need to deal with. C84

   Carbon dioxide is becoming a very real concern to our environment. Global warming is occurring and this EIS needs to consider the consequences in more depth than the cursory comments given in the Global Warming section. The amount of carbon dioxide created by this plant is huge. Governor Schweitzer has taken many flights over the glaciers in Glacier Park to show people how global warming is affecting the glaciers. C104

   Global warming is a huge issue. The EIS should state the impact in terms of specifics, not percentages of global pollution. The language should state equivalent numbers of car emissions, for example. How is this plant going to add to the melting of Glaciers in the Park and adversely affect tourism? How is it going to affect the drought and flooding issues? C105

   Response: The EIS and agencies acknowledge that climate change is a long-term issue with profound implications for Montana, the biosphere, and human civilization. Neither agency has the authority under current regulations to regulate GHG emissions. The level of detail in the discussion of greenhouse gases and climate change it is appropriate for this EIS.

6. *SME asserts that for CO2 mitigation one newly planted tree will remove 1,600 lbs. of CO2 per year, which is impossible. C14. C20*

   What are the actual costs and type of trees that can 'absorb' 1,602 pounds of CO2 and when will SME have the plan for urban reforestation, since scientists are now realizing that our forests are becoming more of an issue concerning C02 just as much as the Amazon Rain Forest? C80

It is clear from the DEIS that the Highwood developers currently have no concrete plan to mitigate their carbon emissions. On page 4-55, there is a vague suggestion that trees might be planted to "sequester" some of the carbon. But the accompanying statistic, that a single tree can absorb 0.82 tons of carbon dioxide each year, greatly overstates the case. A tree in the tropics may sequester that amount of CO2 over a 40 year lifetime, but trees in the Rocky Mountain West would be far less effective (especially if climate change results in continued drought-like conditions in a region already considered semi-arid). C95, C134, C164

Using the 2.4 million tons of carbon dioxide annually produced by the proposed HGS and some figures from the Tree Tech Corporation on sequestration of carbon, one would need a plot 18.6 by 18.6 miles square. So the DEIS, SME is correct in reporting there's not enough arable land on earth to fully offset global carbon emissions. C84

Response: The subject text should have read: "One tree is estimated to offset approximately 0.82 ton of CO2…" and has been changed accordingly in the FEIS.

7. *This plant proposes to raise Montana's carbon footprint by 7.5%, or the equivalent of 350,000-500,000 more cars. Stupidity is too kind of an expression. Any EIS which fails to consider global warming is irrelevant and flawed. C30, C84, C95, C134, C298*

   You brought up the idea that the HGS is only going to be .03 percent of the carbon produced by this country. Now, it also says in the EIS that that is three million tons of carbon dioxide a year. That is equivalent to what 380,000 cars, probably half of the cars in Montana, I don't know the correct number, but I suppose it's about that. But that's not in the statement. All that's in the statement is that it's just .03 percent or it's .008 percent of the amount produced by the earth. That's like me saying, well, if I go out and shoot somebody on the street, out of the 24,000 murders in the United States, that's .0001 percent. So that doesn't matter, does it? It does matter. That's what is wrong with this statement. I assumed that it had been written by the industry when I read it, the total one-sidedness of the whole thing. The flavor of it. Out of the 700 pages of this instrument, three pages are what cover carbon dioxide and the effect of global warming. This statement should be at least 200 pages going into the impact, the environmental impact of what this plant is going to do to my children's future. C138

   Response: The EIS does consider global warming; however, neither the federal nor the state agencies have the authority at this time under current regulations to regulate carbon dioxide emissions.

8. *The DEIS indicates that the potential facility-wide CO_2 emission rate of the HGS is 2,382,985 tons per year, and in addition, would release methane and nitrous oxide with an additional carbon equivalents emission rate of 669,096 tons/year. Should the reference be changed to "carbon dioxide equivalents emission rate?" Further explanation of the term "carbon equivalents emission rate" would be appreciated. C36*

Response: The appropriate characterization of methane and nitrous oxide emissions is “carbon dioxide equivalent” rather than “carbon equivalent”.

9. *The DEIS states that SME and the City of Great Falls are exploring various means of offsetting carbon emissions from the HGS and SME’s overall energy portfolio (page 4-54). We would appreciate clarification about the specific measures that SME and the City of Great Falls are exploring for offsetting carbon emissions, including research into potential advances in carbon sequestration and mitigation technology for future consideration at the HGS. C36*

   What has SME and ECP done to understand and contribute to Governor Schweitzer’s efforts to seriously reduce greenhouse gas emissions and promote locally established renewable energy opportunities? C80

   Response: SME is working on their plans for GHG mitigation which will provided under separate cover.

10. *Do we ever look at countries bigger than us and what they're doing? Everyone that goes and buys red, sleeveless shirts at Wal-Mart are contributing to global warming and child labor. We have no sight, no picture of that until you get over in these countries and see what they're doing. C65*

    The analysis in this EIS does not look at the increase in carbon dioxide from fires. It needs to account for the tons of carbon dioxide that were added to the atmosphere by the fires that burned over 613,000 acres in Montana so far this year. There were many additional tons of carbon dioxide added by the fires throughout the United States this summer. When discussing global warming, we must take into account the cumulative effects of power plants around the world, such as China and other developing countries. C104

    We have heard the argument that China and India are building dirty plants also so why shouldn’t we do the same. But we should be leading the world in cutting back on CO2 emissions and refuse trade with those that don’t follow. C125

    Response: Thank you for your comments. The EIS does discuss global and non-fossil fuel sources of greenhouse gases that affect the climate.

11. *How can the USDA consider funding a coal plant that directly contributes to GHG, which in turn contributes to climate change which has directly impacted farmers suffering in severe droughts, and helping farmers is what the USDA is about isn’t it? C80*

    Response: RUS has no authority to regulate GHG emissions, however, the EIS does analyze the impacts of GHC emissions.

12. *The DEIS states that some scientists dissent from the majority view of the importance of carbon dioxide by global warming. What isn't mentioned and what was mentioned previously is that in the last ten years or so not even one peer-reviewed article by scientists who believe that global warming is not a serious problem have ever appeared in peer-reviewed journals. The dissents that are out there are usually in the form of reports, since the science that is used is usually fraudulent and is supported by big energy companies looking at their own needs. C84*

    Response: Thank you for your comment.

13. *The DEIS also suggests that the 20 megawatts of hydroelectric power that SME currently purchases from the Western Area Power Administration (WAPA) might somehow count as a carbon offset credit against Highwood's emissions. But it is entirely inappropriate to try to claim credit for an existing long-term contract. Groups like the National Carbon Offset Coalition and The Climate Trust emphasize the principle of "additionality" -- i.e., that carbon credits should only be awarded to new projects that move us away from the "business as usual" path. C95, C134*

    Response: Thank you for your comment.

14. Time *magazine warns that 2000 scientists in 100 countries reported to the United Nations and governmental panel on climate change. They conclude that burning fossil fuels is indeed the cause of significant changes in the earth's climate that has been corroborated by the American Academy for Advancement of Science, American Metrological Society, and the National Academy of Sciences. There is a definite fact that we are increasing or accelerating global warming by man-made CO2. C125*

    Response: Thank you for your comment.

15. *Page ES-9, first paragraph, last sentence and page ES-12, second paragraph. The statement "…which most scientists…" is not supported in the text of the DEIS. SME suggests dropping the word most unless the references in the DEIS support this position. C128*

    Response: This change has been made.

16. *Page 3-46, Section 3.3.6, bullets at bottom of the page. Some of the references in the bullets describing potential greenhouse gas impacts (i.e., ABC News, NWF, etc.) are secondary sources, and may not be reliable for a true scientific perspective on the issue. SME recommends that credible governmental sources be used to project greenhouse gas impacts. C128*

    Response: These bullet points list concerns about "potential impacts" in the state by reputable, mainstream, if not always scientific, commentators and organizations. It does not purport to be a list of definitive predictions.

17. *Pages 4-54, 4-55, Sequestration, Mitigation and Carbon Offsets. The various actions that SME has offered to mitigate green house gases should be presented in tons per year (suggest a table of measures and tons per year greenhouse gas offset). C128*

    Response: SME is working on this list and will provide under separate cover.

18. *Montana has been contributing enough to the green house has problem via forest and range fires, without intentionally adding to the problem through coal fired energy plants. Citizen activists have said this plant would add the equivalent of 500,000 automobiles; how can than not be a significant impact. Even though it may be inconvenient to scuttle this project now, it may be essential to our life on earth to do so for this and all other such plants. C314*

    Response: Section 4.5.2.2.5 of the DEIS indicates that HGS emissions "would represent a very small but tangible, incremental contribution to this cumulative global issue," which is without a doubt a significant one.

AIR-604 AIR QUALITY – VISIBILITY IMPAIRMENT

1. *Visibility toward Glacier National Park will be compromised. Current and proposed wilderness: Bob Marshall, Scapegoat, Little Belts, and Highwood areas will be adversely affected. C8*

   The coal plant will have an adverse visual effect on the quality of air for many miles, including the Gates of the Mountains Wilderness Area and the Ulm Pishkun Buffalo Jump. It will diminish the view of the Highwood, Little Belt, and Rocky Mountain ranges. C20

   <u>Great Falls' indisputably crystal clear air would be at risk</u>. I think Great Falls is being viewed as a throw-away community. We are viewed as not particularly picturesque and not going through a major growth spurt. We shouldn't have to sacrifice our community for the convenience of another. C33

   Areas in the little Belts (particularly Pilgrim Creek, middle fork of the Judith) which may be considered for wilderness designation are not considered in the DEIS. Furthermore, the impact on the visual air as seen from the Rocky Mountain Front (when viewed from the Bob Marshall Wilderness or the Scapegoat Wilderness) at the top of the mountains looking towards Great Falls which are more that 33 miles may still show the pollution of the plant visually. The DEIS should consider the effect of the proposed plant on the view shed of the Rocky Mountain Front. C78

   Why does the federal government and state of Montana appear willing to 'lower our standards' and diminish Montana's trademark 'Big Sky' (and clean sky) reputation, all for one coal plant while we have wind energy potential up to 116,000 MW? C80

   I have real concern about the environment. Also I have a picture that my grandfather took of Havre Station 100 years ago. He was a photographer a hundred years ago in Montana, north central Montana here. The sky was blue. The sky was beautiful blue. Driving here today, there was a bit of smoke in the air. Often though we know what it's like when it's beautiful blue and the stars are so crisp. C99

   This EIS says that there will be potential to significant impact, possibly minor or moderate degeneration in the visibility, in the quality of the air. Let's not give up what we have now. I'm a retired teacher. I taught for 30 years in Billings, and I chose to move back to my hometown of Great Falls where it is blue sky, because I tell you Billings is not. C99

   A new coal plant in the Great Falls area would contribute to hazy skies and poorer viewshed. C122

   We have such beautiful skies. I want to be able to see these skies, not something black and ugly. C190

Smog has come to Montana. Thirty years ago, the skies were clear just about all year long. Now, there are many days when haze on the horizon obscures the Front Range from my home in Choteau. This increased haze is in large part related to the increased number of coal-fired power plants in the intermountain west. The proposed Highwood plant will definitely worsen this problem. If new technology will clean up the burning of coal in this power plant, why build a smoke stack? The problem is that the combustion of coal at Highwood will not be clean and our skies will become dirtier with the building of this power plant. C248

I live on Holter Lake and I'm concerned about the Gates of the Mountains wilderness area….The regional haze, visual plume and acid rain "will" affect the Gates area, which is protected as Class I visual resources….I would hope that "if" the power station needs to be built that the State of Montana will insist that the new plant be a "State of the Art" coal powered station. C289, C290

Response: DEQ's authority is to evaluate visibility impacts at federal mandatory Class I areas, including Glacier National Park and the Bob Marshall, Scapegoat, Gates of the Mountains and UL Bend Wilderness Areas. Based on visibility modeling analyses performed and reviewed by DEQ, DEQ had concluded that moderate visibility impairment would occur at these Class I areas during periods of limited visitor use. The areas mentioned in the comments above are Class II areas and not subject to the stringent visibility requirements and analyses of Class I areas, which are all Congressionally-designated wilderness areas and national parks.

2. *Table 4-11 (page 4-49) shows the results of the refined visibility analysis. These results suggest potential days of direct project impact greater than 0.5 deciview in some Class I areas. These include three days at the Bob Marshall Wilderness Area, two days at the Gates of the Mountains Wilderness Area, and one day at the Scapegoat Wilderness Area. Visibility impairment of 0.5 deciview is the "level of concern" (LOC) threshold adopted by the U.S. Forest Service and is the threshold for defining a contribution to visibility impairment established in EPA's Best Available Retrofit Technology guideline. Consequently, the refined visibility results signify a potential environmental concern. SME should develop alternative/additional engineering designs to reduce these impacts. Could the use of an advanced coal combustion technology such as Integrated Gasification Combined Cycle Coal Combustion Technology (IGCC) be applicable in reducing visibility impacts? C36*

   Response: The primary contributor to visibility impairment is SO_2. IGCC technology would not necessarily have lower SO_2 emissions and would therefore not be expected to reduce visibility impacts.

3. *Page 4-46, PSD Class I Increment Impacts Section. SME suggests a summary table of Class I increment impacts would benefit the reader (can paste out of Preliminary Determination in Appendix I). C128*

   Page 4-47, Acid Deposition Impacts Section. SME suggests a summary table of acid

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deposition impacts would benefit the reader (can paste out of Preliminary Determination in Appendix I). C128

Response: DEQ has included these tables and information in the permit analysis to the Supplemental PD on MAQP #3423-00, which is included as Appendix I to the FEIS.

4. *Page 4-49, second paragraph, Clarify that no modeled visibility impacts from HGS, by itself, were above 10%. C128*

   Response: DEQ does not agree with the suggested change it is already stated in the paragraph above Table 4-11. To restate it would be redundant. Analyses using the 2000 FLAG-recommended method showed a few results over 10%. The proposed revisions to the FLAG guideline modify the recommended method, but have not yet been adopted.

5. *Page 4-49, third and fourth paragraphs. In summary paragraphs below Table 4.11, insert DEQ's position of no adverse impacts on visibility (see summary paragraph below Table 7 in Preliminary Determination in Appendix I). C128*

   *Page 4-50, Summary of Class I Area Impact Analysis***.** *The term "adverse" in this paragraph could lead to confusion that it equates to an "adverse impact" to a Class I area as defined by the FLMs. Please differentiate between terms. C128*

   Response: The ARMB believes that the text, as written, is accurate and complete and addresses all visibility issues and concerns. The reader seeking more information can read the air quality Permit Analysis.

   The adverse effect noted on these pages is determined by the MEPA and NEPA significance criteria in Appendix J, which are different than the criteria for issuing a permit. The impact is not significant, but there would be an impact, which is not beneficial; therefore, it must be adverse. A discussion with ARMB indicates that 'adverse' in the PD addresses DEQ's specific legal obligation under ARM 17.8.1101 et seq.

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BIO-700 BIOLOGICAL RESOURCES

1. *The environmental effects of particle fall-out to the nearby Benton Lake Wildlife Refuge are not addressed in the DEIS. The public has not been advised on this concern, so public input has been denied (as has been the case for a number of other citizen concerns regarding SME's proposals). C8, C165*

   Recent reports indicate that songbirds may be adversely affected by mercury poisoning. The coal plant is in close proximity to Benton Lake Bird Refuge. Mercury is especially toxic to those birds that eat fish like bald eagles. The draft EIS greatly downplays this risk; area bald eagles are already dying from mercury poisoning. The National Audubon Society has not been given adequate time to weigh in on this process. C20, C165

   On February 4h of this year four bald eagles were found in Fort Benton, Choteau, Roscoe and Hauser Lake. Two were dead, one improved after treatment, and one is in rehab. According to Dr. Allen Armodus (phonetic), MSU's Department of Ecology, all were impacted by mercury poisoning. Montana Fish, Wildlife & Parks has studied loons in the upper Flathead Valley and has found high levels of mercury in the loon population, especially the eggs. As you can see, birds in the local area are already being affected by mercury poisoning. We don't need more. Our close proximity to the Missouri River, where many birds feed on fish, and Benton Lake National wildlife refuge tracking migratory waterfowl make this proposed siting especially harmful to fish and wild birds. C102

   The majority of Montana waters already have unacceptable levels of mercury in their fish populations. Cut throat trout, especially in the Highwood and Little Belt Mountains, will be threatened by mercury emissions from this plant. Since the Missouri River is ultimately a predominate recipient of emissions, the pallid sturgeon downstream are also at risk. C9

   Response: Benton Lake Bird Refuge and the Flathead Valley are not located within the primary downwind dispersal zone of the HGS, so this plant's mercury emissions would be unlikely to contribute to the cumulative mercury burden these areas may already have. Concerning mercury contamination in Montana's fish, the State has issued consumption advisories on about 30 water bodies, all but two of which are lakes or reservoirs. The Missouri River near Great Falls is not one of them.

   Overall, the plant's emissions would occur in a context in which power plant mercury emissions in the state will decrease by about three-quarters over the next 15 years or so, due to imposition of the federal and state mercury rules; national coal-fired power plant mercury emissions will be declining comparably. However, as noted in Section 3.3.5 of the EIS, most mercury deposition in the Western United States is believed to originate from emissions outside of North America. Thus, rates of deposition and accumulation of mercury in the American environment, and its potential adverse consequences for fish and wildlife, are still difficult to predict and control.

2. *Though the possibility of bird and bat mortality is discussed at length in the text, no research or projections are provided regarding the ability of these species to adapt to avoid collisions with the driving blades. Such adaptation is the driving force of natural selection and can be anticipated from animals of higher intelligence such as these. C10*

   Response: Adaptation through natural selection and evolution takes many, many generations and thousands or millions of years. It would not be a factor in lowering any mortality from collisions at this or other wind farms in the immediate future.

3. *The clearing of trees may potentially occur for this project, but the DEIS does not specifically discuss tree restoration. We recommend replacement trees be planted to offset any unavoidable tree loss. We generally recommend that native saplings be used, if practicable, at a minimum ratio of 1:1. We understand that trees cannot be replaced directly in a pipeline corridor, for access to, and protecting the integrity of, the pipeline. However, in general the replacement trees should be planted close to where the loss occurred as possible. Alternately, mitigation might also include assisting county, state, or federal agencies with any on-going or planned forest or tree reclamation projects in the watersheds affected. We recommend commitment to voluntary tree mitigation, if applicable, in the EIS and to providing, as detailed as possible, a conceptual mitigation plan that compensates for any unavoidable tree loss. C36*

   Response: It appears unlikely that any trees at all would be removed by the construction of the HGS or any of the associated pipeline and transmission line corridors that would connect the plant. If any trees were to be removed, SME has committed to planting native saplings at a minimum of a 1:1 ratio within or near the project boundary.

4. *We are pleased that a Noxious Weed Management Plan would be prepared and submitted to the local Weed Management District (page 4-61). Studies show that new roads and pipeline/utility ROWs can become a pathway for the spread of invasive plants. We suggest that the plan address control of weeds along the disturbed construction ROW, and any new roads, by implementing yearly review and planning activity requirements for this concern. This would include evaluation of effectiveness to date. The Plan should address all areas where ground disturbances will occur including the power plant, roads, pipelines, transmission lines, underground cables, railroad lines, wind turbines, etc,. The plan should address such techniques as washing/cleaning equipment before entering more sensitive areas to help prevent importation of seeds, etc. Also, the current trend for weed infestations in the affected project area should be evaluated for mitigation effectiveness and improvements if warranted. C36*

   Response: The techniques suggested are being considered and evaluated in the Noxious Weed Management Plan under preparation. An outline of this plan has been included in the FEIS.

5. *We did not see a specific commitment to implement Montana Bald Eagle Management*

Plan guidelines or other bald eagle protective actions that may be identified by the Montana Dept. of Fish, Wildlife & Parks and U.S, Fish & Wildlife Service (USFWS). We recommend that a commitment be provided in the FEIS to implement needed conservation measures and precautions for bald eagle protection after full consultation with the USFWS. The consultation should also include the inclusion of the USFWS Biological Opinion on the Biological Assessment in the FEIS. C36

Response: The Biological Assessment and the Biological Opinion, containing any required mitigation measures to protect bald eagles, is included as an appendix to the FEIS. Any required mitigation measures would be included in the ROD as well. SME has committed to implementing industry-standard practices for bald eagle and other raptor protection.

6. *Page 4-58, first paragraph, last sentence: "Vegetation can be directly affected by its removal as the ground surface on which it occurs is developed, or indirectly through changing populations of wildlife that feed on plants. (emphasis added). This latter statement is extremely unlikely to occur in the HGS project area. C128*

   Response: This is a general opening statement in the section on biological resources impacts, and is refined throughout the section as it proceeds. We agree that the likelihood of vegetation effects at the power plant site itself is highly unlikely, but the various proposed corridors do cross areas containing native vegetation.

7. *Page 4-59, second paragraph, sixth line. Add a comment that the current transmission line route is not close to the nesting site near the confluence of Belt Creek and the Missouri River. C128*

   Response: A statement to this effect has been added to the FEIS.

8. *Page 4-63, first paragraph, third sentence: "Trenching may disturb **sensitive** (added emphasis) shrub and tree habitats concentrated in the coulee. Upgrading the existing vehicle trail in the coulee could also impact **sensitive** habitats. **Song birds and raptors, small mammals and reptiles concentrate in these areas, especially during spring breeding season.**" There was no evidence or discussion in Chapter 3 that the shrub and tree habitats, or other habitats in the coulees, were <u>sensitive</u>, either from a biological or legal (e.g., species of concern) viewpoint. Important or potentially important for wildlife, yes; sensitive, no. In addition, there is no evidence that wildlife species groups such as songbirds, small mammals or reptiles concentrate in these areas during breeding season, or any other season. If this Comment is accepted, we suggest that the significance of these potential impacts be reconsidered. C128*

   Response: The cited language has been changed to reflect these suggestions. In the context of biological surveys for environmental assessments, the word "sensitive" typically implies the presence of rare or listed (endangered, threatened, species of concern) plant or animals species, which are not known to occur in this instance.

9. *Page 4-63, second paragraph, last full line. Deleted the word "be" as noted "…fish would not be harmed…". C128*

   Response: This correction has been made.

10. *Page 4-63, third paragraph, last line. Add a sentence that clarifies the preferred method of disposal is to return HGS wastewater to the City of Great Falls where it is subject to pretreatment standards, and not water quality standards or limits applicable to discharges to the Missouri River. C128*

    Response: This change has been made.

11. *Page 4-66, paragraph 3, first sentence and Appendix J: SME questions the significance criteria for aquatic and terrestrial biological resources degradation, but agrees with those for invasive plants. For aquatic and terrestrial resources, we disagree with the definition of "short-term: less than one month." It is quite probable that many construction-related activities will not be completed within one month, making it virtually impossible to have an actual "short-term" impact. We recommend wording such as "one full season following completion of construction," which provides time for wildlife to recover/reoccupy from construction-related impacts. The significance criteria, as presented, push virtually all impacts into "long-term" (which we would define as "longer than three years") and "moderate" (depending on how one defines the words "decline" or "degradation"). C128*

    Response: The definitions of short-term, medium-term and long-term impacts for biological impacts have been revised accordingly.

12. *Page 4-67, Section 4.6.5 Mitigation. Please note that several of the mitigation measures imply that no activity should take place until after "the spring nesting season." Depending on the species, the spring nesting season may well extend into mid-July or even early August. Depending on SME's construction schedule, this could mean the loss of several months of good construction weather. Our recommendations by sub-section:*

    <u>*Threatened and Endangered Species*</u>*: Okay as is.*

    <u>*State Species of Concern*</u>*: We suggest the following changes to this paragraph (in boldface): "Avoiding **or minimizing** disturbance of shrub, tree and wetland habitats would reduce adverse effects on raptors and breeding bird species by the proposed project. If these habitats must be removed, disturbed or altered for construction or maintenance of the proposed project or infrastructure, **a pre-construction reconnaissance could be conducted to determine, to the extent practicable, the relative importance of such habitats to state species of concern. Disturbance of any such sites/habitats of importance to these species groups could be mitigated through the use of reasonable timing constraints during construction, reclamation/restoration of disturbed sites, or other appropriate measures."***

Power Lines: We suggest adding (in boldface): "SME and its contractors should follow the "Suggested Practices for Raptor Protection of Power Lines", Edison Electric Institute (EEI, 1996) ***or other appropriate guidance or*** *recommendations for proper techniques." Assuming that transmission lines will be built by the local cooperative or some other entity other than SME directly, we should not limit them to methods that they might not customarily use.*

Aquatic Resources: We suggest revising to: "Since the Morony Reservoir is being used by MFWP to rear sauger, a state species of concern, ***SME will consult with MFWP on methods to minimize the impact of construction and maintenance of the raw water intake on sauger."***

Wind Turbines: We suggest changing the last bullet to "Follow USFWS guidance (USFWS, 2003) and protocols ***to monitor bird and bat mortalities. If after three years, monitoring demonstrates that bird and bat mortalities are not substantial, monitoring may be ended or modified in consultation with the appropriate regulatory agencies."***

Carrion Removal from Railroad Spur and Access Roads: The mitigation measure "SME would remove carrion resulting from larger mammals and lizards (e.g. snakes) killed by rail or road traffic to a site well-removed from the turbines, to a distance of at least 0.5 mile (0.8 km) away" is not practical. We suggest deleting the entire paragraph and replacing with: ***"SME will monitor all established roads, as well as the railroad, within 1.0 mile of the wind turbines a minimum of once per week, and will remove all carrion that are equal to or larger than a rabbit in size to a disposal site at least one mile from the turbines."***

Noxious Weeds: no changes. C128

Response: These suggestions are incorporated into the FEIS. However, final details of all mitigation measures may be discussed and negotiated with agencies after issuance of the FEIS. The outcome of these negotiations and agreements would be reflected in the ROD.

13. *Page 4-68, first paragraph under Aquatic Resources, third line. The preferred method of wastewater disposal is to return the wastewater to the City of Great Falls so there is no planned water outflow to the Morony Reservoir. C128*

Response: This change has been made. The paragraph has been deleted since it no longer applies.

ACO-800 ACOUSTIC ENVIRONMENT

1. *The DEIS does not provide a comprehensive assessment of noise and safety, especially regarding the transportation of coal and other materials through urban areas. C8*

   Response: The analysis of noise is adequate for an impact determination.

2. *Any degradation to natural ambient sounds (20-47 dBA) is considered an adverse impact for areas administered by the NPS. Although the noise levels at the staging area interpretive site are predicted to be near the 55 dBA daytime standard for residential areas, the impact of the soundscape degradation should be considered from all points of the NHL. Areas near the project site are expected to routinely exceed these standards. In addition, the noise levels were based on routine operation of the generation plant without the added, although intermittent, contribution from railroad (65 to 90 dBA) and trucking operations serving the plant. This unavoidable adverse impact to the acoustic environment (Pg. 4-133) is considered of major significance under NPS policy. C28*

   Response: Thank you for this additional information related to impacts of increased noise levels within the NHL. The overall impact determination for noise has been modified accordingly, from adverse and non-significant to adverse and significant. This change is reflected in the FEIS.

3. *I object to the increased noise being termed insignificant or within municipal codes. We enjoy a very quiet environment now. We are a rural area and municipal noise codes are not relevant to our situation. C45*

   Response: Please refer to the response above. Noise impacts at the Salem site have been re-evaluated and determined to be significant. This significance determination will become part of the overall decision for the HGS. In addition, Great Falls' municipal code (noise ordinance) would apply to either the Salem or Industrial Park site if it was annexed to the city.

4. *Where does the DEIS specifically state the actual noise decibel levels for the plant at either site? C80*

   Response: The DEIS specifically states the actual noise decibel levels for both plant sites in Sections 4.7.2 and 4.7.3.

5. *Where is data showing the more 'silent' nature of wind turbines, which do make some noise, but hardly that of an old coal plant, complete with railcar noise and industrial processes. C80*

   Response: Noise was a major impact of an earlier generation of wind turbines. However, turbine design modifications appear to have reduced this problem, as discussed in Sections 2.1.3.1 and 4.7.2.

6. *Page 3-60, Section 3.5.1, last sentence: "Recommended land use and associated noise levels are illustrated . . ." should read ". . . and associated noise levels developed by HUD are illustrated . . ." since they are specifically HUD's recommendations. C128*

   Response: This suggestion has been incorporated.

7. *Page 3-61, Section 3.5.1, Table 3-14: The title "Noise Levels (dBA)" should be clarified to read "Ldn Noise Levels (dBA)" since the values shown in the table are day-night average noise levels (Ldn), not some other noise metric. C128*

   Response: This suggestion has been incorporated.

8. *pg 4-70, Chapter 4, Section 4.7, 4th paragraph, last sentence: The reference to "the criteria cited in Section 3-6-2 of this EIS" should be checked. Section 4.2.2 and Appendix J has the significance criteria used to determine impact ratings, and according to the Table of Contents, there is no Section 3-6-2. C128*

   Response: Thank you for this correction.

REC-900 RECREATION

1. *Both Salem and Industrial sites will adversely impact Giant Springs State Park and its fish hatchery. C8*

   The impact on the fish and fishing and tourism industry has not been accurately evaluated. Montana's reputation as "the last best place" will be further tarnished by fish advisories that further reduce levels of fish consumption due to mercury contamination. C20

   You also talked in your presentation about cultural and visual effects. We are very close to Ulm Pishkun State Park. We have Freeze Out Lake Wildlife Management area of Montana. The EIS mentioned briefly migratory birds. We have 300,000 snow geese and 10,000 tundra swans gather there. That's 40 miles away. I know it's a little farther than the 30 miles you're concerned with. And Giant Springs State Park in Great Falls is another valuable place, fish hatchery, that would be affected by this. C68

   As many Montanans and visitors appreciate, how can SME help preserve our clean vistas, fishing for 'healthy' fish and ability to enjoy these unique treasures? C80

   I for one hunt and fish in the area it is a tradition. If the proposed plant goes through I won't be able to eat my fish and game. C292

   Response: The EIS concludes that the HGS would have at most a minor impact on Great Falls' and Montana's valuable recreation areas and parks. Concerns about mercury effects on fish and wildlife are addressed in Sections 602 and 700 responses. The HGS should have little or no effect on the existing ability of hunters and anglers to consume their kills and catches. Where fish consumption advisories are now in place, these would remain in place. HGS mercury emissions are unlikely to lead to the need for any further advisories. Mercury contamination of herbivorous (plant-eating) game such as deer, elk and antelope is minimal at present and the HGS would not change this.

2. *How many visitors would a coal plant get versus other communities that have windmill and derive tourists from that, as that situation has been observed in Judith Gap? C80*

   Response: The public tourism and visitation aspect of the HGS was not analyzed.

3. *Page 4-78, first paragraph under proposed action – HGS at the Salem Site, last line. Delete the last portion of the sentence which states "…while the latter offers fishing….". PPL Montana has closed Morony pool to public access. C128*

   Page 4-79, first and third paragraph. Revise the portion of the sentence which states "…would not restrict access to either of these facilities…." to reflect a singular reference. Delete the third paragraph. The Morony pool is not open to public access. C128

Page 4-80, first paragraph, fourth and fifth line. Delete the last portion of the sentence which states "…and the Morony Reservoir…." Also revise the portion of the sentence in the fifth line to a singular reference. The Morony pool is not open to public access. C128

Response: These suggestions have been incorporated in the FEIS.

CUL-1000 CULTURAL RESOURCES

1. *The Salem site negatively impacts the Lewis and Clark Portage Route. C8, C58*

   Response: In the EIS, DEQ and RUS concur with this opinion.

2. *Will the R.U.S. make available taxpayer dollars for this loan knowing they are harming Federal tax dollars already spent on the "National Historic" portage site of Lewis and Clark? How will this be handled by the Federal courts representing the National Trust for Historic Preservation, the United States Park Service and the State Historic Preservation Office? C14*

   In addition to the natural beauty of the landscape is a sense of pride in the history of our region. Another area of concern is the location of the coal plant within the Lewis and Clark National Historic Landmark, where it creates a class IV (of IV) visual and auditory eyesore that seriously detracts from the pristine nature of this historic area at the base of the scenic Highwood Mountains. There has not been adequate time allowed in this public comment process to alert Lewis and Clark supporters across the country and to seek their input. ***Federal agencies should not be using federal tax dollars to jeopardize significant national resources such as historic landmarks.*** *This type of view shed will become increasingly valuable with increased population growth. C20*

   How can the federal government, through the USDA RUS or DOE, even consider funding a project that compromises a 'national treasure' such as the Lewis and Clark portage route? C80

   The location of the Highwood coal-fired generating plant on the Lewis and Clark portage route trail would forever ruin the area's historic significance….Please help save this beautiful, tranquil Lewis & Clark Trail. C262

   As stated in the draft EIS the proposed Salem site for the CFB plant is located within the Great Falls Portage NHL. The draft concludes that the NHL is highly significant and it would be adversely affected by the preferred alternative because the project would alter the setting of the historic site, a factor that contributes to its significance. Given that the historic property is nationally important, more consideration must be given to alternate locations for the proposed plant rather than simply seeking ways to mitigate impacts at the Salem site. C317

   Response: RUS is conducting consultations under Section 106 of the National Historic Preservation Act with a number of consulting parties, including other Federal agencies, which have expressed concern about potential impacts to the NHL. These consultations are addressing the concerns and collaboratively formulating measures to avoid, minimize and mitigate the impacts where possible. All the consulting parties clearly recognize the investments, monetary and otherwise, that have been made in establishing and maintaining the integrity of the NHL. Under S. 106, any mitigation measures agreed upon by the consulting parties

are documented in a Memorandum of Agreement (MOA), which is signed by these parties. The consultation process is ongoing, and SME has been an active participant in the process.

3. *The executive summary and Chapter 2.2.2 state that the proposed Salem site is in "Section 36, Township 21 North, Range 5 East at about 3,354 (1,022 m) above sea level" (Pg. ES-5). However, all illustrations of the proposed coal-fired generation plant, transmission switchyard and rail terminus indicate the location is in Section 24, with the wind turbine array extending into Section 23. (Figs. 2-21, 2-22, 2-23, 2-29, 3-2, 3-9, 3-10, 3-12, 4-4, 4-10, and 4-11.) Further, the UTM coordinates provided in Chapter 4 (Pg. 4-37), and appearing throughout the Draft Air Permit, seem to be in error, although the elevation of 3,290 feet (MSL) conforms with Section 24. C28*

   Response: Thank you for pointing out the need for this correction. The FEIS includes the correct coordinates. The HGS is proposed to be sited in Sections 24 and 25, Township 21 North, Range 5 East, M.P.M., Cascade County, Montana. Approximate UTM coordinates of the facility site (specifically the Unit 1 stack) are Zone 12, Easting 497.3 kilometers, and Northing 5,266.4 kilometers. Site elevation is approximately 3,310 feet above mean sea level. Moreover, the correct coordinates were published in numerous forums. For example, the November 30, 2005, Air Quality Permit Application accurately listed the coordinates (p, 1-7, and Fig. 1.2-1). Also, a February 3, 2006, article in the *Great Falls Tribune* indicated the correct location of the HGS and included a map of the location. Figure 2-23 in the DEIS from June 2006 depicted the correct coordinates for the HGS. As part of the mitigation for the Lewis and Clark Portage Route NHL, SME has agreed to move the HGS site off the NHL, which is reflected in the above location. A new map and coordinates have been provided for the alternate site layout.

4. *The National Park Service role as administrators of the National Historic Landmark program and the Lewis and Clark National Historic Trail is not addressed among the agencies with some responsibility over some aspect of the proposed action. As such, the Great Falls NHL is held to the protective environmental standards afforded to similar NPS areas. In particular, any degradation of air quality, soundscapes and night sky conditions are considered adverse effects on such areas. C28*

   Was the federal National Park Service/USDA Forest Service contacted in regards to the potential compromise of the Great Falls Portage National Historic Landmark? C80

   Although a cultural resources report by RTI was completed in 2005, media accounts described the undertaking as lying north of Great Falls in a wheat field. There was apparently no effort until late summer 2006 to inform the NPS National Historic Landmark program or interested parties that have been affiliated for years with Lewis & Clark Trail stewardship or the portage site itself of the degradation that this proposed power plant presents to the integrity of the Great Falls Portage NHL. C97

Response: The FEIS includes the fact that NPS administers both the NHL program and the Lewis and Clark National Historic Trail. However, NPS jurisdiction on private lands within NHLs differs from NPS jurisdiction on public lands within NHLs. RUS contacted the Department of the Interior (DOI), per DOI procedure, about the NHL prior to release of the DEIS. DOI was also notified of the two separate scoping meetings, in the fall of 2004 and spring of 2005. The U.S. Department of Interior (Fish and Wildlife Service) commented in writing following the fall 2004 scoping meeting. It is the responsibility of DOI to distribute such notices to its respective agencies.

5. *Views from the staging areas interpretive site, location 0.8 miles north of the proposed construction, were specifically addressed in the DEIS (Figs. 4-6 to 4-14). From this location, the view in the direction of travel for the Expedition (south-southwest) would be effectively obliterated by the coal-generation plant, 397-foot tall wind turbines and transmission line grid. Complete analysis would consider the views in all directions from any location within the NHL, not just the staging area. Even with the limited evaluation of impacts on the viewshed, the DEIS states the HGS would dominate the scene within the NHL (Pg. 4-87). C28*

   Response: The significance determination for cultural and visual impacts would not change with this suggested additional visual analysis. The impacts would remain significant.

6. *The portage route used by the Corps of Discovery to transport all its gear and equipment around the Great Falls of the Missouri River lays to the south of the river, not north as stated here. Although the complete company did not return to this portage route, Lewis and a contingent of men passed on their return in July 1806, in part to retrieve a pirogue and other items cached at the mouth of Canoe Creek (now Belt Creek). At this time, Sgt. Ordway camped at willow Run (now Box Elder Creek) at a site that would be impacted by the construction of the fresh and waste water line to the HGS. C28*

   Response: Thank you for this correction and additional information. As proposed, the fresh and waste water line to and from the HGS would be along the now abandoned Milwaukee rail line. Because of the previous disturbances in the area due to installation of a rail line (associated excavation, fill, compaction, placement of rail bed material, placement of rail ties and rail), the construction proposed should have minimal additional impact to the Box Elder Creek area.

7. *Another shortcoming is the inadequate analysis, or non-existence, of the impact of emissions and contaminated ground water upon the nearby the Lewis and Clark historic site and Portage Route. Since both city officials and SME employees maintain that much of the project is to be funded by federal funds and especially when a local governmental institution is a partner in this project, it would seem that a more thorough examination of the Highwood Generating Station's site and the site for the storage of ashes is needed. C29*

Response: The FEIS concludes that there would be no groundwater contamination from ash disposal at the HGS. It also concludes that air quality would not be degraded in the vicinity of the NHL. The HGS would have to comply with both an air quality permit and a solid waste license.

8. *Chapter I: introduction, p. 1-5,* ***1.2.5 Montana State Historic Preservation Office, (SHPO),*** *states that "if approved, the lead agencies* ***would oversee compliance*** *with historic preservation and monitoring plans." (Emphasis added). This statement seems to be put into the Draft EIS as an after thought. One can ask if the word "would" guarantees a loose-ended commitment after the plant has been built. C29*

   Response: Mitigation measures to reduce cultural resources impacts are being developed; compliance with these measures would not be optional. The mitigation measures are included in the draft Memorandum of Agreement (MOA) attached to the FEIS as an appendix. RUS, under the authority of 36 CFR Part 800 and the MOA, will have the authority to enforce these measures.

9. *Where is the study of the historic integrity of its landscape? It is clear that the 1906 Antiquities Act and subsequent congressional legislation demand that such analysis is part of the Draft EIS. C29*

   Response: A Cultural Resources Inventory was conducted as part of the EIS analysis, and a summary of the findings from this study is included in Section 3.7.

10. *The only potentially "significant" adverse impact identified in the DEIS would be on cultural and visual resources, because constructing the HGS at the Salem site would adversely affect the Great Falls Portage National Historic Landmark commemorating the 1805 portage the Lewis and Clark Expedition made around the Great Falls of the Missouri River (DEIS abstract). We recommend that additional information be provided in the FEIS regarding the creative designs and facility siting techniques that would be proposed to assure the preservation of the historic landmark and landscape view. C36*

    Response: Section 106 consultation among RUS, DEQ, the SHPO, the Advisory Council on Historic Preservation (ACHP), and a number of consulting parties has taken place since publication of the DEIS. This consultation has addressed siting and design issues and is formalized in the draft MOA attached as an appendix to the FEIS.

11. *The Lewis and Clark portage route is presently located in mostly pristine areas. How will SME keep coal dust and contaminants from coating this area? C50*

    Response: The portage route is better described as "open space" or "rural" rather than "pristine." The air quality permit for the HGS would include conditions designed to protect the local landscape from air pollutants such as coal dust and other particulate matter.

12. *The Board of Directors of the Lewis and Clark Interpretive Center Foundation, in cooperation with the Southern Montana Electric and Transmission Cooperative Highwood Generating Station, has discussed mitigation efforts at the proposed plant and reached agreement on priorities for such mitigation. Our understanding is that mitigation efforts would include the following:*

    1) *Establish an educational endowment or provide an annual contribution to fund Lewis and Clark educational programs;*
    2) *Assist in preserving the Missouri River north bank, by helping to fund acquisition of the viewshed properties located directly across the Missouri River from the Lewis and Clark Interpretive Center; and,*
    3) *Assist in the remodel of the Lewis and Clark Interpretive Center, and William P. Sherman Library*

    A fourth possibility, but of much lower importance, includes paving the road to the Portage site. C79

    We support SME's efforts to mitigate the potential adverse visual effect on the registered Great Falls Portage National Historic Landmark. However, we believe there are other mitigation measures to be considered in addition to those listed….For example, one such mitigation measure to be included, but not be limited to, would be contributions to the Portage Route Chapter's Educational Endowment Fund for the Lewis and Clark scholars' programs. C177

    The Great Falls/Cascade County Historic Preservation Advisory Committee (HPAC) has reviewed the DEIS and concurs in your finding of Adverse Effect on the significant qualities of the Great Falls Portage NHL….We strongly support economic development consistent with sound preservation principles, but found the proposed mitigation measures somewhat lacking in the ability to minimize the impacts on the NHL. C180

    Following an August 22, 2006 tour of the proposed site with the property owners and SME general manager, Tim Gregori, we are more comfortable with the effects of proposed construction and we believe there is some potential to reduce adverse effects if the developer will commit to reasonable mitigation measures. We look forward to a continuing dialogue regarding those measures. C180

    Response: These measures and others are under development as part of the Section 106 consultation process. Some of these measures are included in a draft MOA attached as an appendix to the FEIS.

13. *How will electrical transmission and water lines be 'mitigated' as they physical[ly] cross directly through the portage route? C80*

    Response: Suggested measures to minimize these impacts are under discussion and review and are included in the MOA and will be included in the ROD. Examples of mitigations include use of the Corten monopoles (single poles rather than more

conspicuous lattices or H-frames) that would be used for power transmission and that would change color as they are exposed to the naturally-occurring climate to a dull, light rusty color that would blend into the viewscape. The land disturbed for the installation of the fresh water and wastewater pipelines would be restored to the original elevations, reclaimed and re-vegetated.

14. *In Section 3.7.3 it's stated that letters were sent to the eight organizations of the Montana Wyoming tribal leaders council informing them of the proposed action and EIS process. Unfortunately only two of those entities responded in any way. I'm wondering if cultural protocol had been followed to actually talk to individual members, such as our tribal elders or our spiritual leaders, those who might have something to say and to contribute and to educate the folks that are not part of the western scientific approach. C119*

    Response: As required by the EIS process, RUS sent letters to the designated points of contact of the federally-recognized tribes in the state. The RUS Montana tribal coordinator followed up with phone calls to each tribe. At the request of RUS, SME conducted a site tour for representatives of the Blackfeet Tribe and USDA's tribal liaison in Montana.

15. *Page ES-10, second paragraph, next to last sentence. "…water supply and wastewater lines could potentially affect undiscovered cultural resources…." Add to this statement the fact that this would be a low probability as the lines are proposed to be installed in a previously excavated right of way where soil disturbance has occurred for a previously constructed railroad system. C128*

    Response: The FEIS includes a statement to this effect.

16. *Page 4-82, last paragraph. We suggest that the statement in the last paragraph regarding the Great Falls Portage NHL's integrity being based "predominantly on the visual landscape qualities that are very similar to that which existed during the early 19th century when the Corps of Discovery traveled through the area" be revised as follows: "While portions of the visual landscape qualities of the Great Falls Portage NHL's may be similar to those which existed at the time of the Lewis and Clark expedition, many portions are not. Over much of the Site the visual landscape is quite changed, including damming of the great falls, development of the City of Great Falls, development of Malmstrom Air Force Base, development of numerous farmsteads and accompanying facilities, and installation of numerous transmission lines across the Missouri River." A good description of the present visual landscape is provided in an editorial in the Great Falls Tribune dated August 23, 2006. To quote the editorial:*

    > "The portage route the explorers took out of the bottoms near the mouth of Belt Creek basically cut the corner of the river's bend through Great Falls. The route is thought to have crossed southwesterly from Belt Creek toward the Missouri above the Great Falls. Among other things, it crosses what is now Malmstrom Air Force Base.

> The site of the Corps of Discovery's camp in those Belt Creek bottoms is below the line of sight of just about anything but the opposite bank and some four-wheeler tracks.
>
> It's only when you rise up to the benchland that you can see the mountains — and the power lines, the roads, the farmsteads, Malmstrom's coal-fired heat plant and, maybe someday, the stacks of the new power plant." *C128*

HGS at the Salem Site location would not be seen from many historically significant locations along the NHL including Belt Creek, nor would it be visible from the Lewis and Clark Interpretive Center. This point is obscured in the DEIS, which focuses heavily on the views from the Portage Staging Area Site, e.g. Figures 4-12 and 4-13, but does not provide similar figures of views from Belt Creek or the banks of the Missouri River adjacent to where the Corps of Discovery began its portage. We suggest including views from these other locations in order to provide a balanced discussion of this issue. Further, while some of the text at p. 4-88 in Section 4.10 makes this point that the Salem Site would not be visible from many historic areas of the NHL, the same statements should be incorporated into Section 4.9.

A final comment on this issue is that the description of mitigation measures in Sections 4.8.5 and 4.10.5 should be included in 4.9.5 since they relate directly to the visual impact of the Salem Site on the NHL. Their inclusion in these other sections, but not in 4.9.5, is confusing to the reader and results in mis-placement of the mitigation measures related to the impact of the Salem Site on cultural resources. Further, the DEIS should reflect that SME is working closely on mitigation with such local organizations concerned with the Portage NHL as The Lewis and Clark Interpretive Center and The Lewis & Clark Trail Heritage Foundation Inc., Portage Route Chapter. C128

Response: The first sentence in the last paragraph on p. 4-82 of the DEIS reads: "This NHL's integrity is based predominantly on the visual landscape qualities that are very similar to that which existed during the early 19th century when the Corps of Discovery traveled through the area." In the FEIS, the word 'very' before 'similar' has been deleted. Following this sentence, the sentences below have been added:

"While portions of the visual landscape qualities of the Great Falls Portage NHL are indeed similar to those which existed at the time of the Lewis and Clark expedition, other portions are not. In the vicinity of the NHL the visual landscape is quite changed, including damming of the Great Falls of the Missouri, development of the City of Great Falls, development of Malmstrom Air Force Base, development of numerous farmsteads and accompanying facilities, and installation of numerous transmission lines across the Missouri River."

RUS and DEQ believe that the existing analysis is balanced in its treatment of visual and cultural impacts. The FEIS discusses and shows how the visual impact and

views have changed because of the proposed shift to the east of the HGS footprint to move it outside of the NHL.

All mitigation measures that relate to cultural resources have been included under Section 4.9.5 as well as their other location(s) under recreation and visual resources.

The FEIS includes a description of the Section 106 consultation process, including the parties involved, potential mitigation measures, the schedule, and the forthcoming steps to conclude the process.

17. *Page 4-85, fourth paragraph under Mitigation Measures, fourth and fifth line and fifth paragraph under Mitigation Measures, first line. Please add language that indicates the areas have been disturbed by previous agricultural and industrial activities. C128*

Response: Section 3.7.2 in Chapter 3 already discusses agricultural and industrial activities that occurred in the area. We believe it is unnecessary to include this information under mitigation measures.

18. *The Lewis and Clark National Historic Trail administration has reviewed the DEIS. They find the proposed construction of a coal-fired generation plant and four wind turbines within the boundaries of the Great Falls Portage National Historic Landmark to be an unacceptable impingement on the protection of this National Historic Landmark under the National Trails System and National Historic Preservation Acts. C28*

Why was the Salem site even allowed to encroach within the actual portage route boundaries and what 'scoping' was accomplished to that end with landowners, historical groups and with the USDA and Department of Interior? How could SME planners ever consider placing any portion with or near the Great Falls Portage National Historic Landmark and how does that reflect upon initial site selection screening criteria and consideration of viewshed? C80

A total of 545 acres of the landscape would be irreversibly and irretrievably lost for the proposed construction (Pg 4-135). This would be distributed along the wind turbine array, two 100-ft. wide transmission line corridors, 1.7-mile fresh and waste water line corridor (which would intersect a known campsite along the portage trail), raw water corridor and more than two miles of roads, all of which would impact a major portion of the eastern NHL area. Such a major disruption of the landscape would threaten the eligibility for national landmark status by destroying the integrity of the site. This would be an irreplaceable loss to the national heritage of our country for the construction of a facility with an expected lifespan of 40 years. No other site along the Lewis and Clark National Historic Trail representing the hardships of the Expedition is so accessible to citizens of any ability. Construction of the Highwood Generating Station at the Salem location is a major significantly adverse impact (Pg. 4-85) that cannot be reasonably mitigated.   C28

The preferred alternative for the new plant lies in a setting that will without question result in irreversible and unmitigatable impacts to the integrity of the NHL. As the project is currently proposed, we believe it would require that the Great Falls Portage site be delisted from the NHL program. Despite the severity of these impacts, we do not find within the draft EIS a broad array of alternatives from which to draw feasible solutions, locations or designs for a project with less impact. We looked hard but did not find explanation of the criteria by which some two dozen other sites were reviewed and eliminated from consideration. C97

With regard specifically to mitigation suggested for the Highwood site, we see no consideration of avoidance measures or relocation of the facility and infrastructure away from the NHL. The mitigation measures suggested by your agency would greatly benefit from utilizing landscape architects or other skilled professionals to create a more suitable site plan that would minimize impacts to the greatest degree possible. This plan will result in heavy industrialization of an area which has until now remained relatively open and undeveloped. Suggested mitigation such as painting buildings green and planting trees would not begin to offset the impact of a major industrial facility with all of its components: power plant with 400-foot-high stack, four wind turbines, rail lines, transmission lines, access roads, and the perpetual activity of coal trains and power generation once operational. C97

We note that modern influences have begun to encroach upon the NHL, with Malmstrom Air Force Base the most visible within the viewshed. However, the NHL retains its integrity for virtually all aspects of integrity that guide NHL designation, and this plant is proposed to be built within the NHL boundaries, not somewhere nearby. C97

Listed as an NHL in 1966, the Great Falls Portage site was among the earliest NHL listings designated in our state. Within the state of Montana today there are just 24 National Historic Landmarks, within the United States there are just 2,500. They are places where history unfolded that is significant not only to Montanans but to our country. Places this important should be preserved for all Americans and for all generations. A location within a National Historic Landmark should be a place of last resort for construction of major industrial facilities. Montana is a big, big state. We cannot believe that this is the only feasible place to site a facility of this kind. C97

The National Trust for Historic Preservation is deeply concerned about the proposed Highwood Generating Station near Great Falls, Montana and its potential effects on the Great Falls Portage National Historic Landmark (NHL). The National Trust is particularly concerned that the Highwood Generating Station is proposed to be constructed inside the boundary of a National Historic Landmark, nationally significant for its association with Lewis and Clark. C101

Construction of the Proposed Action will include the power plant with a 400 foot stack, four wind turbines, a 5 mile rail spur, 14 miles of transmission lines, substation, water intake, water pipelines and access roads. DEIS at ES-5. The DEIS correctly identifies the construction of this facility as having an adverse effect on the Great Falls Portage

National Historic Landmark, since per the Proposed Action, the facility will be constructed within the NHL boundary and its visual intrusion will severely diminish the site's integrity of setting, feeling and association. C101

Of major concern is why the DEIS contains only two alternative sites, each with substantial impediments that render the selection of either one as the preferred alternative very problematic. The Proposed Action has a significant adverse effect on a National Historic Landmark and the Industrial Park site seems unlikely to be selected due to its proximity to the City of Great Falls and its inability to provide a site for wind turbines. We strongly believe that identification of another, more suitable site elsewhere in the state of Montana area warrants further investigation and find it surprising that only three other sites were identified and all were dismissed - Nelson Creek, Hysham or Decker. C101

Under Section 106 of the NHPA, USDA's obligation is to "ensure that the Section 106 process is initiated early in the undertaking's planning, so that a broad range of alternatives may be considered during the planning process." 36 C.F.R. § 800.1(c). Here, it appears that consulting parties were identified and Section 106 initiated in June of 2006. This was several years after site assessment and alternative evaluation had concluded and other potential sites had already been dismissed for cost and concerns about environmental permitting issues, but without consideration of the project's likely significant adverse effect on the Great Falls Portage National Historic Landmark. C101

USDA must resolve adverse effects by developing and evaluating "alternatives or modifications to the undertaking that could avoid, minimize or mitigate adverse effects of historic properties." 36 C.F.R. § 800.6 (a). If the Proposed Action is selected, USDA will have foreclosed all opportunity to avoid the NHL and the only options remaining are to attempt to minimize or mitigate the effects. Locating the facility and its related infrastructure differently on the site might minimize effects, but additional analysis of that issue does not appear in the DEIS. We recommend that a landscape architect or expert with similar skills be consulted to assess how the facility could be sited differently. The list of proposed mitigation possibilities does not offer many feasible options because due to the scale of the project, screening with vegetation (not a current landscape feature) and paint color are unlikely to accomplish meaningful results. C101

We feel that locating the facility on a different site away from the NHL is the only approach that will satisfactorily avoid the adverse effects this project will have on cultural resources. If that approach is not selected, then we believe that substantial additional work on project location and proposed mitigation for the Proposed Action will be required both for inclusion in the final EIS and as part of the continuation of the Section 106 consultation process. C101

How have you addressed the visual and noise impact of this plant with loss of real estate values, closeness to Lewis and Clark historic site, and the overall image of the City of Great Falls? I believe the language should state that this plant WILL have and adverse impact on the historical site. C105

The EIS Cultural Resource Inventory clearly outlines that development of the station at the Salem Site would have negative impacts on recreation, and cultural and visual resources. Designation of a property as a National Historic Landmark means that the property is recognized as being of national significance and possesses exceptional value or quality in illustrating and interpreting the heritage of the United States. When a property is altered so that it has lost its ability to convey its national significance, withdrawal of the landmark designation will be considered. If a property ceases to meet the criteria for designation – the qualities for which it was originally designated have been lost or destroyed – withdrawal of the landmark designation is justified by the Department of the Interior. C144

We are deeply concerned that development of the Highwood Generating Station will threaten this area's Landmark status. A primary factor used to determine the Great Falls Portage's eligibility for National Register listing is the undeveloped nature of the viewshed within the defined corridor. According to the National Register for Historic Places nomination form, "the Landmark retains historic integrity because, other than scattered modern developments, the portage [route] can be seen largely as Lewis and Clark observed it." The Landmark currently is listed on the National Register and remains essentially unchanged from when it was nominated for listing. C144

We urge you to look closely at the impacts on this landmark and take steps to ensure that its national designation is not withdrawn. Once lost, it will be gone forever. If steps can be taken to preserve our national heritage resources, then they must be taken. C144

Proposed mitigation measures under consideration do not adequately address the known impacts on this site. We [Lewis and Clark Trail Heritage Foundation] would like to be included as a consulting party in consultation of proposed mitigation measures. C144

Response: These comments touch on several themes:

- **Presence of the HGS within the NHL boundary;**
- **The site screening and site selection processes resulted in too narrow an array of alternatives, especially within the Great Falls area;**
- **Potential loss of NHL status for the Great Falls portage;**
- **The EIS did not adequately address ways to avoid, minimize, or mitigate impacts related to the NHL;**
- **Industrialization of the NHL;**
- **Visual impacts and the use of a landscape architect to assist with developing mitigations;**
- **NHL importance to the U.S. and Montana; and**
- **Timing of the Section 106 consultation process.**

In the DEIS the majority of the HGS was located within the NHL. During the Section 106 consultation process, SME agreed to move the plant outside of the NHL boundary in an effort to reduce impacts. Only a small portion of the rail loop, a small portion of the transmission lines, a small portion of the entrance road, and the

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wind turbines would remain within the NHL. The power plant itself, associated buildings, the monofill and the majority of the rail loop have been shifted to the east just outside of the NHL.

Additional information on the site screening and site selection process for the Great Falls area has been added to the FEIS. This information offers a more explicit rationale for the elimination of other Great Falls sites. It also explains how SME determined the Salem and Industrial Park sites were the preferred and alternate locations, respectively. The rationale for dismissal of other locations outside of the Great Falls area has also been expanded.

RUS has no intention to propose delisting of the NHL or any portion of it. It should be noted, as discussed elsewhere in these responses, that the northern end of the trail in Great Falls has already experienced, and continues to experience, significant development. If the primary consulting parties agree and sign the draft MOA included in the appendices of the FEIS, which contains numerous avoidance, minimization and mitigation measures to offset impacts to the NHL, delisting is not likely to occur.

The DEIS does list possible mitigation measures in Sections 4.8.5, 4.9.5 and 4.10.5. The FEIS lists mitigation measures to which SME has committed. Avoidance is addressed in part by moving the HGS off the NHL and discussing the site selection criteria and process for the Great Falls area sites. The remaining mitigations address both minimizing and mitigating impacts.

The HGS does bring an industrial facility in to a rural, agrarian setting near this portion of the NHL. However, the upper portage terminus, White Bear Island, is fully developed and is still part of the NHL. Moreover, the lower portage camp and initial portions of the portage route from Belt Creek to the staging area would remain undeveloped.

Visual impacts are an unavoidable consequence of the proposed action, but would be reduced somewhat by SME's redesign that shifts the site off the NHL along with other on site mitigations. The magnitude of the visual impact does vary depending upon the viewpoint within the NHL. A landscape architect would be useful in identifying mitigations to reduce visual impacts. SME has retained the services of a local landscape architect for that purpose.

The Great Falls Portage National Historic Landmark is important to Montana and the United States as it documents a key event in the Lewis and Clark Expedition. The portage around the Great Falls took approximately a month to move boats, supplies, and the Corps of Discovery on their westward trip. The designated staging area contains several displays describing the events that transpired and that the public can view to learn more about the portage. Although there are unavoidable impacts to the NHL, several mitigations would enhance the education efforts to

further explain to the public the events which took place during the Lewis and Clark Expedition including this portage route.

The Section 106 process was begun in accordance with the requirements of NEPA once the final alternative site locations were identified. Notice was sent to federal and non-federal consulting parties in June 2006 as well as appearing in the *Federal Register* at the time of the publication of the draft EIS and earlier at the time of the federal scoping meeting. A consulting parties meeting was held in October 2006 with more than 20 agencies and organizations represented. A number of mitigations were discussed and changes to the DEIS which would be incorporated into the FEIS were identified. The group visited the Industrial Park site, the Salem site, the designated staging area, and the Lewis and Clark Interpretive Center. The meeting succeeded in clarifying a number of issues and moved the process forward. Since this meeting, SME and the agencies have identified and developed mitigations. A draft MOA between the primary consulting parties is attached in the appendices of this EIS, which contains numerous mitigations to offset the impacts to the NHL.

19. *Please do not allow the coal-fired plant to be built at the Salem Road location. The Portage National Historic Landmark is a treasure that we should not squander. No amount of mitigation will be able to preserve the quality of the experience one may now have when standing on the site of where the Lewis and Clark Expedition camped, hearing the buzz of the insects in the heat, and breathing the fresh air. One can be an expedition member, imagining the toil of loading supplies and canoes and beginning the trek across the prairies and hills. One can experience the awe of the immense spaces which, coming from the east, must have been almost overwhelming. To be able to so connect with our past, using all our senses, is a rare opportunity. C152*

    Response: Thank you for your comment.

20. *The Little Shell Chippewa Tribe has reviewed the draft EIS pertaining to the proposed HGS which is to be located across the river form the proposed Tribal Capital and Visitor Center at Morony State Park….The Little Shell Chippewa Tribe has discussed the mitigation measures at the proposed plant, especially those relating to air quality and potential impact on the historic preservation of the Tribal Capital/Morony Park site….It is our desire that an annual contribution toward preserving and maintaining Tribal Capital/Morony Park area be provided by SME to the Little Chippewa Tribe. C182*

    Response: SME has indicated that it would entertain a request from the Tribe for support and evaluate a contribution in the context of its contributions to other related activities.

21. *The proposed Highwood Power Plant will be located across the Missouri River from a significant site of the Lewis and Clark Expedition. Placing this plant in this location will severely impact the continued tourist draw that this city has upon Americans from around the country. The tourism dollar will dwindle for Great Falls if this plant is built. C248*

Response: The DEIS finds that the Proposed Action does result in a significant adverse impact on the Great Falls Portage National Historic Landmark (NHL). However, the NHL itself receives very little visitation – as opposed to the Lewis and Clark Interpretive Center on the Missouri River in Great Falls – and therefore the city is unlikely see any diminution of its current heritage "tourism dollar."

VIS-1100 VISUAL RESOURCES

1. *In addition to the natural beauty of the landscape is a sense of pride in the history of our region. Another area of concern is the location of the coal plant within the Lewis and Clark National Historic Landmark, where it creates a class IV (of IV) visual and auditory eyesore that seriously detracts from the pristine nature of this historic area at the base of the scenic Highwood Mountains. This type of view shed will become increasingly valuable with increased population growth. C20*

   Response: Thank you for your comment. Visual mitigations in any final Memorandum of Agreement will be implemented that will minimize these impacts.

2. *Use of the Bureau of Land Management VRM method for evaluating the impact on visual resources is inappropriate for lands administered under the NPS which has higher standards for the conserving of natural and cultural resources for future generations. Under NPS standards, the goal is to avoid any further impairment, regardless of the base state of the resource. The Great Falls Portage NHL integrity is based predominantly on the visual landscape qualities of open grasslands presenting no barriers to wind and weather. The viewshed of the NHL has already been degraded by the presence of Malmstrom Air Force Base and the City of Great Falls to the west. Further degradation by construction within and adjacent to the NHL is a major significant adverse impact. C28*

   Response: The BLM VRM methodology utilized resulted in a determination that, had the NPS visual impact analysis system or standards been used, would have resulted in the same determination. Both systems would have determined that the HGS would have a major significant adverse impact; therefore, the lead agencies have determined there is no reason to perform an additional visual analysis.

3. *Other than discussing the minimization of lights on wind turbines to reduce their attraction to birds, the effect of lighting for the proposed construction is not addressed in the DEIS. Under NPS policy, actions that decrease the natural dark skies are considered adverse. It is reasonable to assume that the level of lighting required for safe operation of the generation plant would adversely affect the night sky within the Great Falls NHL. C28*

   Response: The effect of lighting has been addressed in the FEIS as an adverse impact. One of the mitigations identified in the Memorandum of Agreement is to utilize of directional lighting that will focus light downward to reduce glare to the night sky.

4. *What kind of trees does SME propose to install near their plant to mitigate the HGS-Salem plant's 'visual' footprint on the beautiful Highwood Mountain landscape? C80*

Response: In consultation with the various agencies, the use of trees has not been identified as an appropriate mitigation. SME would plant native grasses and shrubs in landscaping around the plant buildings.

5. *Page 4-92, second paragraph, second line. The reference to "Figure 4-16" is incorrect. The correct reference is "Figure 4-15". C128*

   Response: This correction has been made in the FEIS

6. *As for the viewshed, one need only ask the rangers at the Ulm Pishkin State Park about the effect of the wind turbines on Gore Hill on the ambiance at the buffalo jump. Those turbines are nearly ten miles away. I would not advocate the removal of those turbines on that argument. It merely illustrates that Montana views are vast, unfortunately so are the viewsheds. A coal stack, plus turbines, at a mile and a half are not an annoyance, they are destructive. C152*

   Response: Thank you for your comment. Visual mitigations are included in the draft Memorandum of Agreement.

TRA-1200 TRANSPORTATION

1. *I would like to know how much it's going to cost the railroad to withstand that many coal trains coming here. C9*

   The SME proposal calls for shipments of coal from southeastern Montana using an expensive captive rail service that relies on diesel fuel for the locomotives; when queried about the expense of shipping coal so far from the mine and where the bulk of the electricity is to be used, SME executives indicated they might purchase their own 110 car coal train (to run on the competitor's rail lines). Is the cost of a coal train factored into the $515 million price tag for the coal plant? C20, C80

   Coal trains are hard on rails; who is going to be responsible for maintaining the rails? Because coal trains are so long and have lesser priority than commodity trains, who is going to lengthen the sidings (so trains can pass one another)? Where is the funding coming from to build the miles of heavy duty steel rails around the new coal plant (at approximately $1 million per mile)? C20

   Response: Maintenance on the railroad is a cost of doing business and is outside of the scope of this EIS. The cost of purchasing two sets of 110 coal car transportation units (220 coal cars) is included in SME's budget. The cost of the rails in the rail loop and spur, which do not need to be heavy duty due to the low speed limits, is included in the estimated cost of the project.

2. *I could find no discussion of the potential impact of rail transportation on operation of the proposed plant and the cost of electricity to consumers. Several coal generating plants in the country have recently been unable to produce at full capacity because rail transportation is inadequate to deliver the amount of coal required from the Powder River Basin. Is this a short-term problem or is it one that will worsen as more coal generating plants are built? Having worked for a railroad at one time, I understand that rail systems have a maximum capacity to move trains beyond which building more locomotives and cars will not help; there's only one set of tracks. C317*

   Response: The rail leaving the Powder River Basin to the south and east is a heavily loaded rail system. The noted difficulties experienced by utilities in other parts of the country are due to the limitations of this segment of rail. The current expansion of the railroad lines leaving the Powder River Basin testifies to the importance of resolving the near and short-term effect of this issue. The rail line from Billings to Great Falls does not appear to currently experience congestion problems, and it would seem unlikely that two coal trains per week would result in a need for modifications to that portion of the rail system. Because the railroads own the track and train engines, and schedule the crews for operations and maintenance, BNSF can develop a schedule that will support the needed deliveries from Southeast Montana to Great Falls. BNSF is the entity that will ultimately decide on a need for additional sidings to address congestion issues.

3. *The EIS should evaluate effects of any proposed road improvements, new road construction, and general right-of-way (ROW) construction activities on the area. The evaluation should include increased access, travel management and enforcement aspects, as well as impact to the flora and fauna of the area. C36*

   Response: The transportation section has been expanded to address MDT's comments and requirement including these issues. Impacts to flora and fauna of the area are addressed in Section 4.6.2.

4. *Throughout the document: The document refers to Highwood Road as "S-228", "SR 228", and "State Route 228". It should be referred to as "Secondary Highway 228" or "S-228". The document should also mention that this road is on the Secondary Highway System. C94*

   Response: These changes have been made in the FEIS.

5. *Throughout the document: Burlington Northern Santa Fe Railway changed its name to BNSF Railway in 2005. This name change should be reflected throughout the document. C94*

   Response: These changes have been made in the FEIS.

6. *Page 3-95, Second paragraph: US 87 should be described as a "paved, undivided, two-lane principal arterial on the National Highway System". C94*

   Response: This change has been made in the FEIS.

7. *Page 3-97, Figure 3-54: This map is out of date. See http://www.mdt.mt.gov/travinfo/docs/railmap.pdf for current map. C94*

   Response: This map has been updated in the FEIS.

8. *As stated in Section 1.3 on page 1-6, MEPA requires DEQ to list and describe the responsibilities of federal, state, and local agencies that have jurisdiction over aspects of the Proposed Action. MDT is not listed among these agencies, but needs to be. MDT will have several responsibilities relating to traffic impacts and encroachment of rail access from the highway if the HGS is constructed. Also, permitting will be required from MDT and should be described. C94*

   Response: This description has been added to the FEIS.

9. *Neither of the websites listed on page 1-22 & 1-23 for viewing the scoping report appear to exist (or, they are at least inaccessible with the listed website addresses). The scoping report was located on the DEQ website, but MDT's comments were not included with other agency letters received. Include MDT's comments in the scoping report. C94*

Response: The websites have been re-verified for accessibility. MDT's scoping comments are included in the RUS scoping report. MDT indicated at that time that it had no comments but would comment on the DEIS.

10. *MDT requires the highest level of railroad crossing safety be provided in the development of all projects. MDT strongly recommends a grade separated crossing and further recommends that S-228 be designed to go over the top of the BNRR spur. This route is used by overheight loads because of height restricted RR overpasses on the other routes into Belt. Does Southern Montana Electric Generation and Transmission Cooperative, Inc. (SME) plan to include the funding for the grade separated rail crossing of S-228 in the project to address traffic impacts and public safety? C94*

    Impacts associated with the construction of a grade separated rail crossing on S-228, such as traffic (especially movement of large farm machinery), cost, maintenance, and visual impacts need to be addressed. The Salem alternative has the most cultural/visual impacts of the discussed alternatives, and the grade separation and bridge may add to those impacts. C94

    There are potentially significant Right of Way issues for the proposed project that should be addressed in the DEIS. If S-228 is upgraded and a bridge is built, Southern Montana Electric Generation and Transmission Cooperative, Inc. (SME) would be responsible for the purchase of the necessary Right of Way in the name of MDT. Also, federal and state Right of Way acquisition regulations need to be followed. C94

    Response: A grade separated bridge for the S-228 crossing over the BNRR spur has been added as a mitigation to the Salem site. SME would be responsible for acquiring the necessary Right of Way as described. Additional impact analysis has been included in Chapter 4 of the FEIS.

11. *In the Transportation sections (Sections 3.9 & 4.11) of Chapters 3 & 4 respectively, the DEIS should state that the 2005 ADT on the 4-lane section of US 87/89 is 4528. C94*

    Response: This description has been added to the FEIS.

12. *The DEIS (page ES-10) indicates that for the Salem Site "The overall rating for impacts on traffic congestion from the Proposed Action would be non-significant and adverse." On page 4-96, the DEIS indicates "a peak of approximately 550 vehicles per hour could be entering and exiting the construction site for a short duration." MDT considers this number of additional vehicles to be "significant". The impact study needs to evaluate this increase in traffic. C94*

    We anticipate that a majority of traffic will travel to the Salem Site from Great Falls on US 87/89, turning left at S–228. An evaluation of the increase in traffic of approximately 550 vehicles per hour on the operations of this intersection will be required, in addition to a mitigation plan addressing safety issues, which are a concern. Also, the LOS of the intersection of S-228 and US 87/89 needs to be examined. C94

When discussing the Salem Site location, the intersection of 10th Ave South and 57th Street will have an increase in traffic comparable to the S-228 and US 87/89 intersection mentioned above. The impact to the function of this intersection and planned mitigation needs to be stated. C94

Response: The FEIS has reevaluated and modified the impact determination. The 550 vehicles/hour figure is estimated only for the morning and afternoon commuting times, but the ADT nonetheless does increase significantly, and is projected to remain for the duration of the construction period. We agree that it would be appropriate to assume a decreased LOS during peak traffic times, possibly a LOS 'D'. These traffic increases and corresponding decreases in LOS have been more fully factored into the overall impact determination for traffic.

13. *Secondary 228 was constructed in 1957 with a 24 to 26 foot-wide typical section and has vertical and horizontal alignments that do not meet today's Safety and Design standards. The increased traffic and weight of the vehicles that will be using this road require that the DEIS address the damage that is likely to result to this roadway and indicate how the increase in traffic will impact driver safety. C94*

    The DEIS needs to state whether there are plans to make improvements to S-228 to accommodate the increased traffic and load. If no improvements are proposed, it is possible that load and/or speed limits would have to be placed on S-228. Load and/or speed limits will impact loads to the HGS and will severely impact local farmers with agricultural interests who use S-228 for access. Concerns which should be addressed include: the economic impact of reduced loads and/or lower speeds; the current road condition; determining whether vertical and horizontal safety concerns need to be evaluated and mitigated. C94

    The intersection of Salem Road and S-228 will have a high amount of turning traffic volumes. During and after construction of the HGS, the entering and exiting vehicles will likely include many trucks, with slower speeds and longer acceleration distances. Secondary 228 needs to have a Left Turn Lane, a Right Turn Lane and an acceleration lane constructed before HGS construction begins. Details on how the improvements will be completed and funded should be addressed. C94

    Response: The FEIS better acknowledges the potential safety impacts of increased traffic, and has added additional detail in Section 4.11.5 regarding proposed mitigation for road usage, repair, and/or improvement. It should be noted that some of these considerations, e.g., road upgrading, will be influenced by the outcome of county and city (Great Falls) decisions on zoning, possible annexation, etc., as these actions may include requirements for infrastructure improvements.

14. *Page 4- 97 notes "The potential for increased accidents is addressed in Section 4.15.2.1" however, accidents are not addressed in this section. This statement needs to be corrected to reflect the location of this information. C94*

Response: This correction has been made.

15. *The Industrial Park site would use the Malting Barley Railroad spur for access. This would result in lengthy delays on the NE Bypass near 38th street because of long trains. Currently most of the trains through Great Falls move at a slow speed and several crossings would be impacted simultaneously because of the length and slow speed of HGS trains. This will seriously impact public safety when emergency vehicles are held up. C94*

    Response: It has not yet been determined if the Industrial Park site would use the IMC spur or if a new spur would be built. This decision should take into consideration safety impacts due to the potential for blocked road crossings.

16. *The DEIS should recognize MDT's planned road widening project on US 87 north of Great Falls when discussing the Industrial Park site. C94*

    Response: This information is included in the FEIS.

17. *Page 4-95, third paragraph, third line. Delete the last portion of the sentence which states "…though an undetermined number may stay on the site in RVs or campers….". There are no plans to have facilities to accommodate these activities on the Salem or Industrial Park sites. C128*

    Response: This change has been made in the FEIS.

18. *Page 4-99, first paragraph, second line. Delete the portion of the sentence which states "…the existing rail spur to the IMC malt plant….". C128*

    Response: The first two sentences of this paragraph have been modified to read: "<u>For this alternative, SME would likely extend the existing rail spur to the IMC malt plant to accommodate the arrangement at the Industrial Park site. No specific route for the possible construction of a rail spur extension to the Industrial Park site from the existing spur to the IMC plant has been identified."</u>

19. *Page 4-99, second paragraph, last full line. Correct the portion of the sentence dealing with coal deliveries by rail which states "…at street crossing, but* ***two trains per week would****….". Boldface added for emphasis. C128*

    Response: This correction has been made.

20. *We [Federal Aviation Administration] have no comments on the documents from an environmental perspective….However, we remind you that you will need to consider whether or not the project will require formal notice and review from an airspace utilization standpoint. The requirements for this notice may be found in Federal Aviation Regulations (FAR) Part 77, Objects Affecting Navigable Airspace. This regulation is contained under Subchapter E, Airspace of Title 14 of the Code of Federal Regulations.*

WE would like to remind you that if any part of the projects exceeds notification criteria under FAR Part 77, notice should be filed at least 30 days prior to the proposed construction date. C180

Response: Section 4.11.2.2 of the DEIS addresses the FAA's notification requirements on projects that utilize the nation's airspace. The language above supplied by FAA has been added to this section in the FEIS to further clarify SME's obligations.

FLU-1300 FARMLAND AND LAND USE

1. *More requirements are necessary than the DEIS stated SME agreement "to fill out Form AD 1066." Means of compliance need to be defined. The current DEIS admits to emission levels that are known adversely to affect farm production. In particular, the coal plant will significantly harm organic farm production and private gardens. Under FPPA, development of other (renewable) energy sources is the appropriate alternative action that would not adversely affect farmland. [Appendix C-7] We are what we eat and the proposed coal plant will basically be poisoning the people and life of this region. C8*

   Saying that the area farmland is not prime farmland is clearly wrong. C78

   If built the plant should be north of Great Falls – would not be on the good farmland near Salem – the U.S. is losing much farmland due to various developments. We do not have an endless supply of good farmland. C266

   My concern is that the land, the land that we live on and farm, what will be the deterioration of that over the course of 50 to 60 years of these emissions. Again, with computer modeling, I think it can be determined, be estimated how much mercury can we expect to accumulate during that time and will that be enough to decrease the value of the land. I think the land does decrease in value because of this. Shouldn't those owners of the emissions be liable for that decrease or that loss of value, including the City of Great Falls, if they're involved in this. C110

   Response: The Natural Resources Conservation Service (NRCS), in administering the Farmland Protection Policy Act, uses a land evaluation and site assessment (LESA) system to establish a farmland conversion impact rating score on proposed sites of Federally funded and assisted projects. This score is used as an indicator for the project sponsor to consider alternative sites if the potential adverse impacts on the farmland exceed the recommended allowable level. The assessment is completed on the form AD-1006, Farmland Conversion Impact Rating. The AD-1006 assesses both soil and non-soil related criteria. The evaluation of farmlands at both project sites did not result in a determination of prime/unique agricultural lands or lands of statewide importance, based on the required numeric scores and review/ concurrence by the NRCS. The intent of the FPPA is to avoid unnecessary conversion of farmlands, rather than any potential contamination of farmlands.

   Contamination by either air emissions or water discharges is regulated by other laws and policies. The modeling conducted for the DEQ air quality permit process, as well as additional groundwater modeling in regard to the ash disposal site, resulted in the determination that emissions would be in compliance with state limits, and that there would be no impact from groundwater transport of contaminants. Particularly in regard to mercury emissions, the transport and fate of this substance is determined largely on a global scale. It is our understanding that the establishment and certification of organic farms depends primarily on the

absence of chemical pesticides and soil amendments rather than any effect of airborne contaminants.

2. *Is the R.U.S. going to require legal documents showing the actual purchase of the land needed for the plant, the annexation of the property by the City and agreements between the City and the Cascade County? C14*

   Response: RUS requires any documents necessary to process loan applications and make lending decisions according to its policies.

3. *What are the jurisdictional, legal, and property tax issues that must be dealt with, since the City of Great Falls and Cascade County appear to be 'salivating' over the prospects, yet the County and State of Montana continue to tolerate protested taxes from another utility, PPL, to the amount of 13 million dollars? C80*

   What provisions will be emplaced to discourage SME and ECP from EVER protesting its taxes, as PPL has now shown they can protest with impunity? C80

   Response: Taxation issues such as these are addressed by the appropriate city, county or state authorities, and are outside the scope of this EIS.

4. *To what level is the City Planning/Zoning Board involved with annexing the site, and how will the public be provided the opportunity to comment on any proposed annexation? C80*

   What is the accurate process for land annexation, since the checklist on page 4-103 is in error, since the Great Falls City-County Planning Board was DISSOLVED, thereby rendering the Jan 2000 date inaccurate? C80

   Response: The Great Falls Planning Department's annexation procedures are at this site: http://www.ci.great-falls.mt.us/people_offices/planning/procanexsub.htm. The correct information has been added to the FEIS. Public involvement policies are determined by Great Falls officials.

5. *Page 4-101, last bulleted sentence under Construction. Correct the number of wind turbines in the sentence which states "…The installation of four nearly 400- ft….". Italics added for emphasis. C128*

   Response: This correction has been made.

6. *Page 4-102, last paragraph. This paragraph makes incorrect assumptions about what would happen if the Salem Site was not annexed. It indicates that the Site would be ineligible to hook up to the City of Great Falls municipal water and sewer systems. This result may be accomplished by other means with the approval of the City. The wastewater could still be discharged to the City and the potable water could be brought from the City. C128*

Page 4-103, second paragraph, second sentence. There are other mechanisms for delivering city services to HGS which are currently under review. Therefore, this statement that SME "would apply for annexation prior to construction" should be deleted since such decision is under review. C128

Response: The text has been modified accordingly to reflect this information.

WAS-1400 WASTE MANAGEMENT

1. *SME has yet to "demonstrate that no leachate will migrate offsite or to aquifers." Such claims by industry in the past have proven unreliable. How is SME's claim different? C8*

   The idea of burying toxic ash on site creates serous concerns. C266

   Is the R.U.S. requiring documentation and the assurance that the water aquifers under the ash in the storage areas will stay in as pristine a condition as they are now? C14

   Solid waste, the ash from a coal-fired power plant contains five percent hazardous substances including arsenic, cadmium, chromium, lead and mercury. Over 120 sites across the country have contaminated surface and groundwater due to improper disposal of ash and coal-fired power plants. At least three Superfund sites were created by improper disposal of this ash. And I think these are the things that we're going to be looking after in our grandchildren and our great grandchildren are going to be paying for this when we're gone, long gone from here. C18

   Studies have not as yet been completed to demonstrate that contaminants from the stored fly ash and bottom ash (225 tons per day) from burning 1,177 tons of coal per year will not find its way back into the Missouri River and or the underground aquifer. Despite claims of the effectiveness of the natural clay liners for the encapsulated waste, the possibility of fractures and leakage exists and with the location of the plant so close to the Missouri River, even a small risk of groundwater/aquifer contamination must be taken seriously. Will these prudent studies be completed before the permit is issued? C20

   In the section of the waste deposit in the form of ash one can reach the conclusion that this amount is a threat to public health and even more so when it is combined with air emissions. Chapter 4, p. 4-112, mentions that "Studies conducted by the University of North Dakota indicate that most heavy metals….are low enough that they would not adversely affect drinking water quality." It is not mentioned who did the study, where it was done, and by whom it was funded. C29

   *The use of scientific information on p. 2-41, **2.1.7.5 Hauling Ash to the High Plains Landfill** is at best sketchy scientific evidence if not distortion. The alternative method of disposing the ash material would require approximately 10-12 trucks per day for the transport. At least, SME admits that there is little scientific foundation. It states:*

   > *"Given that SME and DEQ **believe** that the bedrock beneath the beneath the proposed facility and the compacted clay liner would minimize downward migration of contaminated water into the ground water….." In a so-called scientific document, the word "believe" does not belong in its content for it is easy to conclude that there is a downward migration of contaminated ground water is a reality. The question is: how much? C20*

Response: Despite a lack of legal requirements to do so, SME has agreed to have DEQ issue a solid waste license for the disposal of ash at HGS. SME has met with DEQ and has developed a plan that calls for responsible disposal of ash produced at HGS as described in the DEIS and FEIS. SME has voluntarily accepted the responsibility to continuously monitor the groundwater in the vicinity of the disposal site.

In the "No Migration Demonstration" submitted to the DEQ as part of the Solid Waste Management System License Application by SME, data were presented to the DEQ on the test results for the hydraulic conductivity of the ash and the soils, the concentrations of the metals in the ash and in leachate produced from the ash. Based on these numbers, a numeric model was run using a worst case scenario. Even using these conservative conditions, solute concentrations are below the limit of detection at a point 60 feet below the ground surface for 65 years. The glacial tills beneath the site are estimated at 110 feet thick. Then it is another 140 feet through a confining shale layer to the uppermost water in the Kootenai Formation. For modeling purposes, the top of the Kootenai was used as the top of the aquifer, adding another conservative parameter. To be conservative, the model did not include a compacted clay liner.

Since the fly ash produced at the proposed plant would be in a dry form rather than a wet slurry like some other plants, the hydraulic loading on the natural clay liner would be minimized. The ash would have a hydraulic conductivity of about 0.0158 feet per day and the glacial till clay was assigned a value of 0.00023 feet per day, an order of magnitude faster than the lab determined permeability. The metal content of the ash leachate (TCLP) is less than 0.5 parts per million for all metals except barium, so the concentration of 2.0 parts per million, a little above the highest barium concentration of 1.6 ppm, was utilized in the model as an additional conservative estimate. The TCLP limit for barium is 100 ppm. The highest mercury concentration was determined by modeling to be 0.0024 parts per million and the TCLP limit is 0.2 parts per million for mercury. The total metal concentrations in the ash are less than half of one percent.

In short, the model demonstrates that the monofill would meet the requirements that the groundwater at the point of compliance not be contaminated for the life of the landfill units and the post closure care period. (See ARM50.723(3).)

2. *The DEIS does not address how it will comply with the Montana Hazardous Waste Act to protect the public safety and welfare. Where and how will hazardous materials be transported off-site to meet MWA requirements? Such means need to be spelled out in the FEIS. C8*

   Response: This was addressed in the DEIS in Section 4.13.2.2, Waste Management, Operation, Other Wastes. The HGS would comply with all Montana requirements for the management of hazardous wastes.

3. *The fly ash storage has not been fully addressed. Will the R.U.S. make public all the documents showing the cost of each storage site needed for the 225 daily tons of solid waste from combusted coal? C14*

   Response: The costs for the use of the on-site disposal at the Salem location is estimated by DEQ to be approximately $1,875 per day, exclusive of hauling costs. This is based on a cell construction cost of $2.50 per yard of capacity and a placement cost of $2.50 per yard for material with a density of 1,200 lbs/cubic yard. Typical costs for disposal at an independent landfill as would be required at the Industrial Park site would be about twice this, but these contracts are normally proprietary information. In addition, hauling costs at the Industrial Park would be higher because of the increased haul distance and the need to use smaller highway capable trucks instead of larger construction style equipment.

4. *Since there are currently no Montana laws governing toxic solid waste from coal plants, how can there be any enforcement actions if there is groundwater or aquifer contamination? C14*

   Response: Groundwater quality is protected under the Montana Water Quality Act. Enforcement would be through that statute. SME has voluntarily applied for a solid waste license and any surface water or groundwater quality violations would be processed under that license as well.

5. *How many trucks will be needed to continuously deliver limestone and haul the ash? What type of road will be used; will gravel roads be paved to reduce dust? Is Cascade County responsible for the roads being used by the coal plant during different seasonal conditions and around the clock usage? C14*

   Response: The Salem site requirements follow – Approximately four trucks per day would be needed to haul the limestone if it did not also come by rail. Six loads of ash would be hauled to the landfill on a daily average. The internal roads would be maintained by SME and would need to be watered to control fugitive dust. Other dust suppression treatment such as magnesium chloride may also be used, if needed. Cascade County would be responsible for maintaining Salem Road unless other arrangements were made with SME.

6. *The Salem site at which ash will be deposited drains into the pre-Ice Age river bed of the Missouri river. It follows a path along the Highwood Mountains and travels north entering the Missouri a few miles down river from Fort Benton. The above stated High Plains Landfill drains into the Missouri a few miles from Great Falls. It does not take a rocket scientist to know that contaminated water from the "clean" burning coal plant will enter the river. This imposes a health hazard for communities down river and, more serious, the DRAFT EIS fails to examine adequately the flow of mercury contaminated ground water and its impact upon the environment. C29*

Response: The geology of the site is addressed in Sections 3.1.1 and 3.2.6. Industrial waste water would not be discharged into the Missouri River from the HGS but sent to the Great Falls municipal waste water treatment plant for treatment prior to discharge. The discharged water must comply with the treatment plant's MPDES permit limits that are protective of surface water uses and quality. Groundwater issues are discussed above in 1-1400. Storm water runoff within the plant area would be collected in on-site ponds and not allowed to discharge into drainages leading to the Missouri River.

7. *What landfills have been identified with county approval for the Industrial Park site option? C80*

Response: The Montana Waste Systems landfill near the industrial site is the most cost efficient option for operations at the Industrial Park site. The landfill is near the Industrial Park and is licensed by the DEQ as a Class II Landfill and is allowed to take the ash according to Montana Solid Waste rules.

8. *The EIS seems to discount the problems associated with ash disposal. Near Colstrip water is seeping through the ash and has contaminated several wells of neighbors near the ash pits. Wells are becoming highly saline and may not be usable for stock. The EIS needs to take into account the ash seepage that may occur with this plant. It could reach the waters of the Giant Spring. C104*

Response: Colstrip uses a wet slurry method of ash handling which poses completely different issues associated with this method of disposal. The dry ash handling methods of the proposed plant would not have these disposal issues. See comment 1400-1 above for more information regarding groundwater infiltration at the Salem site.

9. *Page 4-110, last paragraph, third line. Revise the portion of the sentence which states "…dewatered to a **thick slurry** consistency…". Boldface added for emphasis. C128*

Response: This statement has been modified to read as follows: "… This material would be dewatered to a ~~filter cake~~ thick slurry consistency …"

10. *Page 4-111, last paragraph, second line. Revise the portion of the sentence which states "…appropriate, filter **slurry** would be conveyed…". Boldface added for emphasis. C128*

Response: This statement has been modified to read as follows: "… Ash and, if appropriate, filter ~~cake~~ slurry would be conveyed …"

11. *Page 4-112, first paragraph, ninth line. Revise the portion of the sentence which states "…moisture **through out** the growing season…". Boldface added for emphasis. C128*

Response: This statement has been modified to read as follows: "…This storage and capillary action allows the plants to use the moisture ~~thru ought~~ throughout the growing season …"

12. *Page 4-113, second full paragraph. Add the following to this paragraph in front of the last sentence. New text is in boldface."…could contaminate nearby water resources.* ***The boiler blow down wastes and cooling tower blow down waste will be discharged into the waste water stream which will be pumped to the City of Great Falls wastewater treatment facility. As noted above, the demineralizer regenerate waste will be used to reduce dusting by utilizing the slurry material in the bed ash and fly ash pug mills when loading the ash haul trucks. Finally, the boiler chemical cleaning waste will be captured in special containers to be tested for metal content. The level of metal concentration will determine the disposal method. If allowable, the slurry will be admitted into the wastewater stream and discharged to the City of Great Falls wastewater treatment facility.*** *A dedicated, zero outflow evaporation pond…" C128*

Response: The paragraph has been modified accordingly.

13. *W e decided we better do something about solid waste or fly ash disposal. And it's not regulated in the State of Montana. But we decided to voluntarily ask the Montana Department of Environmental Quality for a license to work on that issue. And we did that because there were some local concerns here about it. We feel that we've been very active. C159*

Response: Thank you for your comment.

HHS-1500 HUMAN HEALTH AND SAFETY

1. *Based on comparison of modeling results in the prevailing direction downwind with ambient air standards, Southern Montana Electric has shown that the impacts to residents downwind are not a public health concern. C11*

   Response: Thank you for your comment.

2. *There is no review of possible impacts to human mental health by the positioning of a dirty coal plant just outside the city. Could this be contrasted with the positive regenerative influence of a wind farm within view? On a very basic level, one type of development symbolizes the pursuit by moneyed interests of short term profits, while the other sends a clear signal of hope and concern for future generations. C10*

   The EIS has done an extremely poor job at characterizing the true adverse effects of this pollution on public health and the environment. C17, C168

   The EIS must include all health information, and not rely on regulatory assumptions of safety. There is a prevalent assumption among permitting agencies that if the modeled ambient pollution levels do not exceed the NAAQS/MAAQS, then the pollution is not harmful to public health. Numerous scientific studies have shown this assumption to be false. The NAAQS/MAAQS are not updated in a fashion that can keep up with scientific advances on the effects of pollution on public health. Thus, although permitting agencies might feel hamstrung in their ability to regulate emissions stricter than what would violate the NAAQS, the EIS process is under no such restriction. It is the EIS process that allows the public to understand the true impacts a facility will have on the surrounding environment. This EIS is lacking in fully revealing the public health implications of this project. The scientific studies mentioned in these comments should be reviewed and incorporated into the next EIS document. C154

   We believe its important to be on record, that in 2006, significant scientific evidence is available to the USDA and the DEQ which clearly indicate that coal-fired power generation with a circulating fluidized bed technology generates emissions of both criteria and toxic air pollutants that are detrimental to public health. Coal-fired power across the country is responsible for increased death rates, increased rates of disease and developmental effects in children. This EIS should be absolutely clear, that these sorts of public health effects could result from the Highwood Generating Station, even with the best technology we have. C154

   These plants spew poison. Your health and that of your loved ones is not as important as their profits. C38, C51, C62

   I am opposed to anything that increases heavy metal pollution and threatens public health. Per the draft air quality permit, the proposed plant is projected to emit 40 pounds of mercury per year and 366 tons per year of particulate matter (containing other heavy *metals such as arsenic, beryllium, cadmium, manganese and lead). And that's only part of the pollution. C56*

As designed, the project would needlessly threaten public health and environmental quality by emitting thousands of tons of regulated air pollutants each year. C54, C61, C63, C85, C87, C108, C116, C137, C202, C209, C210, C212, C213, C214, C215, C216, C217, C218, C219, C220, C221, C222, C223, C224, C225, C226, C227, C228, C229, C230, C231, C232, C233, C234, C235, C236, C237, C238, C239, C240, C241, C242, C243, C244, C245, C246, C247, C252, C253, C274, C278, C282, C285, C286, C287, C295, C300, C310, C312, C319, C330

A new coal plant in the Great Falls area would contribute lowering the health of humans and other life surrounding the city of Great Falls. C122

As an employee of the City County Health Department, I was dismayed to read (ES-11) that "Overall health and safety impacts of the plant would be adverse but non-significant." There are so many scientific studies that prove coal plants are significant contributors to poor health. Based on the figures, there is no way the HGS can be a clean coal plant! C167

The technology the plant will utilize is outdated and will jeopardize the rights of future parents and children and Montana and beyond to live healthy and productive lives. C170

As a practicing physician and new mother, I have many concerns regarding the generation of air and water contaminants affecting the health of our citizens and families….I moved to Montana 12 years ago to escape the very situation that SME's proposed plant threatens to create here. C174

I am writing for my concerns on the coal burning plant. I think this will be a risk to my future and millions of others because it can affect our health, not only is it going to destroy our environment but everyone and every thing that lives in it by putting them at risk to health problems mentally and physically. I hope & wish we do not get another polluting plant in this state. Thanks for your time and your consideration. C197

My grandchildren I'm raising…have smoke allergies….As for my spouse and I, we have lung problems, CPOD, emphysema, and pneumonia constantly. We are on oxygen twenty-four hours a day. We take medication for our asthma, allergies, lung and other medicines. As for myself, I'm on fifteen different medicines….My father worked at the coal mining company in 1951-1953 until I was six months old. To this day he has lung problems….These are the reasons I'm against the power plant. C199.

I am a person with asthma, so my body is quite sensitive especially to chemicals. In the past I had to give up my job in cleaning medical equipment on a daily basis in the hospital. I was constantly breathing the fumes, and eventually ended up very ill and having to take time off of work. C204

Think of our lungs, think of the tons of particles settling on the wheat fields of the Golden Triangle and adding heavy metals to your pasta, cereal, and bread. C279

When they had above ground nuclear testing the winds brought the radioactive fallout, which settled over Montana, and now we have abnormally high rates of cancer in central and eastern Montana. I was told this by a doctor who treated my father for cancer. These same winds will bring the mercury and other pollutants produced by the Highwood coal plant. C299

Response: The U.S. Environmental Protection Agency (EPA) is the lead federal agency charged with protecting public health from environmental pollutants, and as such sets applicable standards in the framework of political, regulatory, budgetary, and administrative factors and constraints. States are charged with setting enforceable emissions limits, through permit processes among others, to implement the broad national standards set by the EPA. The EIS, in Section 3.3 and Table 3-3, recognizes the various human health effects due to air pollutants. The NAAQS and MAAQS do not imply that non-exceedance equates with 'no harm' to human health. However, both state and federal standards have been set with a margin of safety to protect human health and the environment. Human health is adversely affected by air pollution, among a multitude of other environmental factors. Air quality standards, which are regularly (albeit slowly, given the framework just described) updated to be more stringent, to match and encourage improved pollution control technology and other market- or policy-based mechanisms to limit emissions. The EIS process is 'restricted' in that it is not intended, or allowed, to establish law, policy, or regulation, but rather to assess environmental impacts in part by examining a proposed action in light of existing law, policy, regulation, and scientific information.

3. *I've heard people speak that, well, we've been living in pollution for years, and none of us have died. Well, there's a thing called threshold poisoning. And after Chernobyl, they looked at it, the people that refused to leave Chernobyl. And there were some families that their dogs lived, their cows, everything. But there were other people, probably 10, 20,30,000 died. So that's the way it is when you have threshold poisoning. It's random. You might have a lucky family. You might live for generations. Other families can be desolated and wiped out. And whole families seem to be weaker. So just because somebody has lived by a power plant doesn't mean that it's safe. C51*

   Response: Thank you for your comment.

4. *What will the State of Montana do to monitor the health and safety of citizens downwind of the HGS-Salem site, particularly residents of Fort Benton and Big Sandy, as the EPA examined the old mining site in the town of Neihert to assess health and safety of those residents? C80*

Response: Computer modeling conducted as part of the Montana air quality permitting process has demonstrated that all potential downwind impacts from pollutants emitted by the proposed project are in compliance with the applicable requirements of law including, but not limited to, compliance with the health-based NAAQS and MAAQS. In accordance with DEQ policy related to ambient monitoring, because pollutant emissions from the proposed project are relatively minor, the Supplemental PD for MAQP #3423-00 does not require ambient monitoring of the criteria pollutants or HAPS. The primary NAAQS and MAAQS provide a margin of safety to protect human health.

5. *What legal actions could the City of Great Falls AND Cascade County be exposed to and liable for if any health and safety problems that could be linked to the operation of either plant site? C80*

   Response: The potential for such legal actions is outside the scope of this EIS.

6. *Historically, I've served as the CFO of companies as an entrepreneur. And one of the companies I co-founded is a company that's called InfoMed, and we provide health and communication based pulmonary diagnostic services. We at one time had the largest pulmonary diagnostic database in the world. And one of the things I learned, you know, in working and co-founding the company and watching it grow and developments I learned a little bit about chronic obstructive pulmonary disease. And I can tell you that it is very directly associated with particulate effluents from plants such as the one we're planning to build. C112*

   Response: Thank you for your comment.

7. *Page 4-120, paragraph under Mitigation, third line. Delete the portion of the sentence which states "…cleaning coal before it is combusted would reduce the contaminants released into air emissions following the combustion process….". Coal cleaning is not an option for the project. C128*

   Response: This correction has been made.

8. *Right now, pregnant women, women of child-bearing age, and children are told not to eat shark, tile fish, king mackerel, or swordfish, and to limit consumption of tuna (a staple in most women's diets) because they are so contaminated with mercury. In Montana, 54% of the lakes and rivers tested have resulted in mercury levels considered over the safe limit by the FDA. These same populations are told to avoid eating walleye and lake trout over 15 inches in length. Our waters are polluted because industry has been allowed to output so many toxins into the environment. The proposed Highwood plant looks no different. C137*

   Response: In compliance with recently implemented, and more stringent, state and federal regulation on mercury emissions, the HGS would emit lower levels of

mercury than currently operating coal-fired power plants, and these levels would continue to decrease as lower limits phase in over succeeding years.

9. *Americans living near coal-fired power plants are exposed to more radiation than those living near up-to-standard nuclear power plants. C169*

   Response: Section 4.14.2.2 of the DEIS addresses the issue of radiation exposure to near-by residents from uranium and thorium emissions of coal-fired power plants. Like many naturally occurring materials, coal contains traces of radioactive uranium and thorium: an average of about 1 part per million (ppm) of uranium and 3 ppm of thorium. By comparison, the average brick contains about 8 ppm uranium and 11 ppm of thorium. EPA cites a figure of 0.03 millrem/yr radiation exposure within 50 miles of a coal plant. Given the overall average background exposure of 360 millirem/yr for the average person, this EPA figure would suggest that living near a coal plant is not likely to increase a person's radiation exposure by more than a very small amount. Therefore, while a nearby resident's exposure to radiation may well be greater in the presence of a coal-fired plant than a well-functioning nuclear power plant in the U.S., the implications for health appear to be negligible.

SOC-1600 SOCIOECONOMICS

1. *The DEIS is too limited in scope and does not talk about the huge issue of perception. This CFB plant will be considered a "dirty plant." Children are at risk; therefore families will move away or not choose to live here. The aura of an outdated coal-fired, dirty, inefficient generating plant will be a big turn-off to other main industry regardless of how well officials tout it. Would Great Falls perceived identity be sealed if we did? Are we in danger of becoming an Appalachia of Montana with lower property values and outdated coal plant? C4, C8, C20, C24, C111, C134*

   The attraction of 65 well-paying jobs, plus the hundreds of temporary construction jobs for years is very appealing, but what is the long-term consequences socioeconomic effects if tourists and prospective residents and businesses bypass Great Falls due to the 'negative' perception of a smoke-filled 'Big Sky' and 'scarred' landscape, and has that been impact been quantified? C80

   How can a moderate socioeconomic benefit and virtually 'outweigh' all the other adverse and potentially significant impacts regarding water, air, human health and safety, cultural and visual resources, not to mention the 'stigma' Great Falls and Montana will incur when we 'degrade' our reputation, and lust for the Big 'dirty' Sky, and will we be the 'Last, Best Place' to 'Live, Right, Here' at the Great Falls Chamber of Commerce touts? C80

   A CFB plant will stifle economic development in the region (this has been proven in other locales). Many Great Falls residents live in this area by choice, many at lower salaries than they could easily earn elsewhere. They value the quality of life our clean environment offers. <u>A significant number of them would not choose to live and work in a community affected by a CFB coal plant</u>. C8, C20, C111, C134, C150

   I also question why the poorer, less prosperous area of Great Falls and Cascade County is being asked to add visual, noise, mercury and carbon dioxide pollution to it's environment when most of the power will be going to growing economically robust areas hundreds of miles away. I think this will add to the economic problems of our area, not help as the EIS states. C45

   I think I speak for a lot of people when I say that this plant looks much like a boondoggle. I don't think it's even economically makes sense. And if we're going to talk about economic development, economic development has to make economic sense. I think the potential for economic harm from this particular proposal could do a lot of substantial damage. C74

   By granting this permit in this form, the DEQ becomes an agent (and responsible) for bad economic development and environmental degradation this type of coal plant would have on this region. C78

The people behind this plant would tell you that the jobs brought by the plant would boost our state's economic standing, its true. More jobs, means more money. Money which will be needed badly by the families whose children develop asthma from the exhaust of fumes. Our fishing and hunting revenue would drop because the fish were no longer safe to eat due to increased mercury. The wildlife in general would drop due to the increase in pollutants in the water and food. 46 pounds of poison per year. Mercury attacks our nervous system. Our BRAINS, our ability to think, remember, communicate. I, for one enjoy remembering my name….After all is said and done what this comes down to is money. Do we want small amounts of money and a little extra electricity now and Billions of dollars spent cleaning up later. Or do we find another way to power our lives that would not condemn our children and grandchildren to picking up after us and our selfishness. C208

Economic development for Great Falls is not so important that we put our residents' lives at risk. C284

I have serious concerns about a reduction in quality of life in Fort Benton and communities downstream. C315

Response: The DEIS did not include the type of social impact analysis that might have gauged resident's perceptions about or attitudes toward the proposed plant. Many comments have been received that express some opinion toward the plant in terms of its 'cleanliness', the efficiency of the proposed combustion technology, and its potential effects on health and safety. These opinions, as expected, cover a wide spectrum, from total opposition to total support. In considering SME's loan application, RUS must consider the proposed design and combustion technology in light of the current industry standards. Although CFB combustion has been in use for some time, it remains among the cleanest current methodologies in terms of emissions and combustion efficiency, and also one of the most reliable. Other technologies such as IGCC are on the verge of full commercial viability, but at this time, or in the near future, do not present the level of certainty required on the part of SME and RUS. The EIS has fully analyzed the potential health risks due to the proposed plant. The Great Falls area already has an industrial base and history that has apparently not deterred many residents from moving to the city or remaining there.

The EIS evaluated a range of impact areas, and concluded that, with some exceptions, by and large the proposed HGS would not significantly impact the environment and quality of life in the Great Falls area. In the various public meetings that have been conducted for the proposed project, and in summarizing the comments received, the possibility of <u>large</u> numbers of residents re-locating due to the HGS has not been raised as an issue of concern.

The economic benefits of the power that would be generated by the HGS would be disbursed over a wide area in Montana. Current state law regarding power supply in the Great Falls area, and any changes thereof, would have a large influence on

potential local economic benefits. Environmental justice was considered in the EIS, and it was determined that there would not be any disproportionate impacts on low-income or minority populations in the area.

2. *What particular financial risks might the citizens and taxpayers of Great Falls assume, since the city's $125 million share of HGS will be financed by bonds? The city commissioners have all assured us that these are revenue bonds that will be repaid from income generated by the plant. Furthermore, the commissioners have all been told, and I believe them, that all of the financial risks rest with the revenue bond purchasers and that the bonds will only be sold to sophisticated investors who understand the risks of junk bonds. And that it is what revenue bonds are. However, I have a draft letter from the bonding attorneys stating that, quote, "The bonds are valid and binding obligations of the city." This sounds like obligation bonds to me, something very different. How can the city obligate the taxpayers to this kind of indebtedness without a public vote? C8, C20*

   Response: The financing issues of Great Falls were evaluated to the extent necessary by RUS in reviewing SME's loan application. These issues, particularly the nature and approval of any bond issues, are governed by the City, and are outside the scope of the EIS.

3. *The DEIS neither accurately nor sufficiently addresses Montana Environmental Policy Agency (MEPA) requirements to consider:*
   1. *potential growth-inducing or growth-inhibiting impacts, particularly the latter*
   2. *economic and environmental benefits and costs of the Proposed Action*
   3. *the relationship between local short-term uses of man's environment and the effect on maintenance and enhancement of the long-term productivity of the environment C8*

   Response: The EIS addresses the fact that construction and operation of the HGS would provide both temporary and permanent jobs in the Great Falls/Cascade County area, both direct and indirect. Off-site mitigations for impacts to the Great Falls Portage NHL would provide socioeconomic and educational benefits to the local community. The relationship between local short-term uses of man's environment and the effect on maintenance and enhancement of the long-term productivity of the environment is covered in Section 4.19 of the DEIS.

4. *Will the profits from selling the electricity go to the State of Montana? How will it relieve our taxes? C32*

   Response: As a cooperative, SME is a non-profit organization. Benefits from sales of electricity should go to its customers in the form of lower rates, incentives, improved reliability, and better service.

5. *Alternative sources for electricity require workers too, generating jobs. C33, C111*

I would like to say to organized labor that as a lifetime member of my own union, I want you all to recognize that building an IGCC plant or wind power is going to take labor and provide jobs just like the plant that they're planning to build. C132

Response: Thank you for your comments.

6. *As for the need for jobs to keep our young people in the state, have them to go into environmental engineering. I would venture to say that with all the environmental disasters already in the state, since whenever seem to learn, we could employ thousands. C38*

   Why do we push economic growth so much? I always remember why everybody complains why do our kids, after they graduate, have to leave Montana? Because we don't have the jobs. Why can't we bring them back? Because we don't have the jobs. As we build economic development, there is a very big enthusiasm among Great Falls residents, greater than I've ever seen it before, to build jobs in Great Falls, because if we do that, the jobs will pay more money. We'll be able to bring our children back, and we'll be able to have our children not leave. That's why. C115

   Response: Thank you for your comments.

7. *As indicated on page 3-106, coal fields near Great Falls were mined for use in industry, so would that ever be considered again to provide coal to either CFB coal plant site, if the cost of rail transportation (and carbon taxes) were to present local coal as more economical for SME? C80*

   Response: SME conducted a detailed review of these reserves as a potential fuel supply, and concluded that the coal reserves in the Great Falls area are not currently a viable fuel supply option. It is uncertain if these reserves would ever become a viable fuel option. If such an option were to be considered, a process of preparation of a proposal, dialogue with appropriate government agencies and other stakeholders, and likely an environmental impact assessment, would be conducted.

8. *What amount of money is being offered to LANDOWNERS for either site, particularly when it will be PUBLIC funds provided via the USDA RUS and ECP, and who will actually 'own the property deed,' SME or ECP? C80*

   Response: SME would be the owner of the HGS property. The purchase price would be available from county records.

9. *A second source of risk arises from the plant's dependence on large quantities of coal, which represent a significant portion of the plant's annual operating costs. Consequently, any financial projections (such as the expected cost of energy to the consumer) are heavily dependent on the assumed cost of buying and transporting coal. Backers of the plant predict it will supply electricity at an attractive price of less than $50 per*

megawatt-hour, but have given no indication how sensitive this price is to changing market conditions. Because the proposed plant is not located at the "mine mouth," it will be profoundly affected by any variability in the transport cost of coal. With 1.1 million tons of coal being shipped each year from southeast Montana via diesel locomotive, those costs could be substantial. C95, C134

The costs for generation from this coal plant will not be stable. The costs for coal can and will go up, and the cost for diesel fuel is certainly volatile. The customers will not be paying so much for the coal as for the freight to get it from the Decker area to Great Falls. I also suspect that your estimated costs per kilowatt- hour will be higher than you estimate and will go significantly higher in the future. If SME had opted for combination wind and hydro, those costs would have been subject to much less long-term inflation. C106

Response: SME has considered these factors and contingencies in its calculations. The financial analysis conducted by SME considered the market history and future projections of coal and other materials that would be required for the HGS. In addition to providing the financial data submitted as part of its loan application, SME officials meet on approximately a quarterly basis with RUS to discuss current status and provide any updated financial data as necessary. The analysis by necessity must include the cost of transporting these materials; this factored in variable transportation costs (i.e., fuel price escalation) associated with coal deliveries from southeastern Montana.

The consideration of "carbon risk" is highly speculative; though many industry and policy experts consider the imposition of a "carbon tax" or similar mechanism as potentially useful/probable, none to our knowledge have ventured as to if, when, or by whom such a tool would be implemented. The need for diversification of energy portfolios is gaining growing recognition, at the current time primarily at the state level in terms of actual "renewable portfolio standards" (including in Montana). SME has indicated it would use the wind energy component of the HGS to provide practical operational data to assist in expanding this element in the future.

The inclusion of hydropower as a renewable energy component is becoming more limited due to the unlikely possibility of any new hydropower construction, and the increasing demand among existing and new customers for existing hydropower resources. A significant number of energy, environmental and economic policy analysts, while obviously recognizing the need to take urgent steps to limit greenhouse gas emissions, also acknowledge that coal will remain a main component of the nation's electricity generation for some time to come.

10. *In light of the increasing cost of energy and other commodities, the expected cost to the consumer of $46 per megawatt-hour is even less plausible. As early as February 12, 2005 a Great Falls Tribune article stated that the construction cost of the plant would be $515 million (up from $470 million). According to the U.S. Department of Energy website, the price of gasoline at the pump at that time was $1.91 per gallon. In contrast,*

the price for gasoline at the pump in July 2006 was listed as $2.98. That is a 56% increase. Yet there has been no corresponding increase in the estimated construction cost. DOE's estimate for the February 2005 cost of diesel was $2.02 per gallon. That price is now $3.02 per gallon, a 49% increase. How can the DEIS rely on a number that was generated 18 months ago when important factors affecting the cost of construction have changed so dramatically? C95, C134

In light of these variables, the "expected cost" should not only be readjusted, but should also include error bars that indicate the possible range of costs around that number, due to carbon risk, fuel-price risk, and other factors. NorthWestern and many other utilities employ a comparatively sophisticated modeling process that produces a "risk adjusted expected cost," a figure which more meaningfully conveys the cost of competing portfolios. Wind, solar, and other renewable energy sources carry no carbon risk and no fuel costs. C95, C134

As every investor knows there is considerable risk that comes from "putting all your eggs in one basket." SME's overdependence on a single fuel type (coal) and a single power plant (Highwood) amplifies the risks described above. Responsible portfolio planning emphasizes both fuel and resource diversity, a principle which is central to the PSC procurement rules that direct NorthWestern's planning process and which is also acknowledged on page 1-15. And yet the only other sources of electricity that SME currently anticipates using are the 20 MW WAPA contract and a 6 MW wind project. In other words, the Highwood project would account for over 90% of the energy portfolio of SME -- hardly a "balanced and diversified supply portfolio." If something were to go wrong with the plant, SME would be almost entirely at the whim of the notoriously volatile spot-market. C95, C134

Response: The future cost of diesel fuel to transport construction materials and later, coal, to the HGS would vary and may well increase over the long-term. SME is aware of this possibility and has included it in its analyses of future costs and revenues.

Coal-fired power plants, and CFB boilers are considered quite reliable by industry standards, which is a major factor in SME's selection of this technology. Thus, SME does not expect to be entirely at the whim of the spot-market. Wind and solar also carry some carbon risk and fuel costs (though less than fossil fuels) related to manufacture and delivery of their components.

11. *The Great Falls Development Authority, which represents many investor businesses in Great Falls, is in support of the proposed plant. Our organization raised two-and-a-half million dollars four years ago. Some of it came from the city, some of it came from the county, some of it came from the airport authority. But most of it came from individual businesses to spur the economic development in Great Falls, because it's been bad for many years. And so that shows you the kinds of support that we have for economic development. C115*

There are numerous coal fired plants being discussed, planned and built throughout the country and especially in the West. Montana workers deserve the opportunity these good paying jobs will bring. Montana's economy as a whole will benefit greatly from this project. C267

Don't be obstructionist, let Great Falls and the area grow. Think of the jobs that will be offered, the construction companies that will benefit and the taxes that will result and as an added benefit the taxes that the construction companies and workers will pay. Also Montana coal will be used. As I see it, it is a win-win situation. C270

We have been very successful in our life and thought that this was one thing that we could do that would benefit the community and the state. It is regrettable that such good farm ground is needed, but you can't build a plant like that on the rough ground and run a railroad to it. This plant will generate in taxes that will probably be in the neighborhood of 4000 times what we are paying in property taxes. C271

This plant will bring stable and good-paying jobs to Montana's economy. The natural resources used will be obtained here in Montana which will further help our economy. C275

As a member of Electric City Power Inc., I can see the potential benefits to local government, schools, medical facilities and businesses who will sign on to use Great Falls' portion of the power. The use of 65 megawatts of cost based electricity from the HGS will mean less taxes, medical costs and direct economic advantages. Securing an affordable dependable cost based price of electricity will enhance the recruitment of business to Great Falls and reinforce the competitiveness of existing business customers. C306

Response: Thank you for your comments.

12. *The tax revenues for Cascade County in Great Falls are huge. And the burden it would take off of us would be enormous. It allows us stable electrical costs into the future. Something that we cannot predict now. C115*

    I've lived near the coal-fired power plants at Colstrip my life. I've lived there four generations, started at Colstrip 3 and 4. I have not noticed any adverse effects. It has been a boon. I personally would have liked to have seen this power plant that is being proposed here down in my home county. And you know why, because of the tax benefits, the property tax benefits are huge. If you look around today, Rosebud County has the lowest property tax paid by any county in the state. Why? Because of Colstrip. And these people are going to have a very big boon in property tax relief when this plant goes into effect. C139

    I would like to bring up the long-term electricity rates that will be available because of this plant. I haven't heard much mention of that. I do believe that, because of the stability of this power production, the long-term rates will be very valuable in attracting

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new business to Great Falls. So economic development is a good, positive thing from that. C148

Response: Thank you for your comments. Tax revenues from HGS would include property taxes from the plant and income taxes from increases in direct and indirect employment.

13. *Although there isn't any real "economic impact statement" or "cultural and demographic impact statement" associated with this project, we need to know more about these things, and have these effects investigated by some impartial research group which is not in the pay of SME or the City of Great Falls. These issues are mentioned and largely passed over in the DEIS, which is contrary to the intent and purpose of most of the major environmental policy legislation of the past four decades. C134*

Response: Economic, cultural and demographic issues are addressed in all EISs to varying extents, including in this EIS (Section 4.15). The degree or level of detail to which these issues are analyzed depends on the nature and scope of the proposal and the degree to which these issues are expressed as a concern by agencies and the public.

14. *Montana's long-term economy lies in tourism, agriculture, and timber. Building another coal powered generating plant will harm these traditional Montana businesses. Global warming worsened by building the Highwood plant will affect the rancher and farmer when prolonged drought and severe summer temperatures reduce the high plains to desert. When the glaciers have melted in Glacier National Park and visibilities are reduced to five miles or less due to smog, will tourists still come to Montana? C248*

Response: The EIS cites concerns that climate change is likely to adversely affect Montana's environment and resources, and every source of greenhouse gases potentially contributes to this impact. However, such impacts are a function of global greenhouse gas emissions. The HGS, if built, would constitute on the order of 0.008 percent of the world's current CO_2 emissions. Thus, the influence of this one plant would be minor and it should not affect Montana's ability to attract tourists to its natural features.

EJP-1700 ENVIRONMENTAL JUSTICE/PROTECTION OF CHILDREN

1. *Documented cases of an increase in rates of autism and asthma occur with increased levels of emissions, including mercury and particles. The preponderance of evidence supports the conclusion that emissions from this plant will harm children and fetuses. Long-term economic consequences will far out weigh any possible economic gains and, therefore, qualify as "disproportionately adverse risks." C8*

   As recently shown in the Steubenville Ohio study, mercury disproportionately settles locally. Federal Agencies are required to examine possible disproportionate impacts on children and on minority and low income populations. Children are clearly disproportionately affected by mercury pollution. C20

   As designed, the Highwood Project would needlessly threaten public health, especially the health of our citizens most at risk and least capable of protecting themselves--our children and the elderly. C81, C167, C168, C170

   In recent years much has been revealed about the relationship of mercury and autism. There now seems to be little doubt that mercury absorbed by a pregnant woman settles in the uterus and from that condition, the primary cause of autism occurs. (Reference – A highly regarded pathologist – Dr. Cheryl Reichert) Yes, I have observed autism first hand. My twin granddaughters both suffer from this affliction….I ask, is there any proponents that would want to shoulder the responsibility of even one child contracting this dreadful condition because the most up-to-date technology was not used in the building & operation of this proposed coal burning plant. C269

   Response: The emissions limitations imposed on the HGS in its air quality permit would prevent significant, adverse air pollution in the vicinity of the plant that would cause significant health problems such as autism and asthma. The Clean Air Mercury Rule and newly approved state mercury rules will reduce mercury emissions in Montana by approximately three-quarters over the next two decades. Not providing economically affordable electricity to rural populations would have its own disproportionately adverse effects, some of which could affect human health.

2. *Adverse effects on the indigenous people of Rocky Boy and other downstream reservations are not addressed in the DEIS, as evidenced, in part, by the stated concerns of numerous Native Americans. C8*

   The Rocky Boy Indian Reservation with a population of several thousand Native Americans is directly downwind and downstream from the proposed coal plant. Inhabitants of the Reservation have registered their strong opposition to the coal plant, as evidenced by their written testimony and by hundreds of signatures on the petitions opposing the coal plant. C20

   According to the Emissions Inventory, there will be 46 pounds (per year) of mercury that will enter the air, the air that which we breathe….Now! I love my baby brother he has *asthma, and I don't want him to suffer anymore than he is already. And I am very concerned for my future nieces and nephews! And the saying Big Sky will be lost. The future of Montana will be a waste! C185*

I worry for my elders who already have health problems. As it is now our tribe is working hard on trying to care for our elders. I worry because they are our culture. We still need time with them to preserve our traditional way of life. Why should we lose our elders to something we will never benefit from? It is a scary thought to me. I want to keep living my traditional ways with my grandparents, parents, friends and family. C189
I am opposed to this [coal plant] because I live in Rocky Boy Reservation and if this plant is built we are the ones going to get the emissions from the coal being burned. I know quite a few people with breathing problems. I would really hate to see them suffer from some one else's benefits. I am sure there are other people off of the reservation that can agree with me when I say that we do not deserve this kind of unthoughtfulness. C192

I am opposed to the coal plant because of the impact on health and the environment. My mother lives in Fort Belknap. She is afflicted with COPD which makes breathing [difficult] under normal circumstances. If the plant operates as scheduled the Rocky Boy and Ft. Belknap reservations will be in the direct path of the air pollution caused by the burning of coal. C193

I was shocked and shaken at the hazardous materials & pollutants that are released into the atmosphere. First of all, I live North of the proposed building site and the toxins will blow over and be deposited on my reservation which will contaminate the land, water and my children. I'm very opposed to the power project as I love my home land & water and my children and the health hazards cannot be measured in dollars. The future effects on our generations to come cannot yet be measured. C195

Here on the Rocky Boy Reservation, we have always called this "God's Country." When and if this coal plant is approved, here in "God's Country," we will be subjected to carbon dioxide, a killer. We will be subjected to gray skies. We will also be subjected to the smell of nothing pure. We have the cleanest air and the most beautiful smells in all of Montana, and that will come to a halt if the coal plant is approved since the winds generally blow towards the Rocky Boy Indian Reservation. C198

Our reservation is downwind from where they're planning to have this power plant, meaning that we'll get a good portion if not more of their harmful pollutants, that will go not only to our lakes and streams but onto our land and into our people. With that happening it contaminates most if not all of our wildlife and their habitat; it will get to our children and to countless generations to come. C201

As a young girl growing up on the Rocky Boy Reservation, going fishing to me was being able to bring it home to cook. Anyone who loves to eat fish knows what I am saying. Now, with all the pollution, it makes me sad that generations of children and after me have to worry about mercury and other toxins in their environment. It discomforts me *that my children and their children will be living with all the pollutants covering the reservation. Something must be done to stop this proposal. C207*

WHEREAS, according to wind row studies, the wind is blowing northeast 92% of the time and Rocky Boy's Reservation is northeast and down wind from the proposed coal-fired power plant from where the mercury will be emitted in to the air and falls back to the earth in rain or snow and accumulates in microorganisms that live in the water, as well as plants eaten by livestock and wild game, and….THEREFORE BE IT RESOLVED, that the Chippewa Cree Business Committee hereby oppose the coal-fired power plant to be located near Great Falls, Montana due to health concerns of the Rocky Boy's Indian Reservation. C277

The Fort Belknap Indian Community strongly objects to this coal-fired plant being built for five southern rural electric cooperatives and Electric City Power, Great Falls, MT. Why should three Native American Indian Reservation (Rocky Boy, Fort Peck, and Fort Belknap), on the Highline suffer the environmental impacts associated with coal-fired plants to our pristine air quality? C320

Response: Air quality modeling using state of the art computer models indicates that any changes in air quality in the vicinity of the Rocky Boy Reservation would be negligible. Therefore, there would likely be negligible impact to the reservation. In addition, there would be no to negligible impact on the Missouri River's water quality and quantity from the construction and operation of the HGS.

3. *In regards to children (only in the aspect of educational funding or neglect), would SME ever protest property taxes, denying school districts vital funds and indirectly effecting the quality of education for our children? C80*

Response: This comment is considered outside the scope of the EIS analysis. It is expected that SME would contribute significant tax dollars to the local economy through property taxes, payroll taxes and other fees and taxes associated with HGS. However, RUS and DEQ cannot know whether SME would ever protest any particular tax assessment.

4. *This plant is in Great Falls, and we wanted it in our area in southern Montana, but we did not have the water that it needed, because our tribe right now has an agreement. They have a water compact agreement with the State of Montana. So it would be difficult for this plant to get water from our tribe, because it would take years and years to negotiate. And Great Falls had their water coming from the Missouri, so they got the plant. And they're going to get the jobs, the economic development. Somebody had to get it, because we need this electricity at the lowest cost that we can get it for our Native Americans also. They're low income. C140*

We've heard testimony this evening that there's been no consideration given to traditional cultures or traditional cultural properties, no consideration given to American Indians. I would like to address that issue, if I could. Yellowstone Valley Electric serves a very *large area of the Crow Indian Reservation, this includes the town of Pryor, Montana. In fact, we serve about 1100 Native Americans in that area. These people are members of Yellowstone Valley Electric Cooperative. They've told us that many of them are fixed economic residences and they need low, stable, and reliable energy, cost-base rates. They will benefit from the power produced by this plant. And as members of Yellowstone Valley Electric they will be owners of this plant. C161*

Response: Thank you for your comments.

5. *What would you rather have a choice on…Infant Deaths or Money? I don't want to see my baby family members die because some people think its better to have money then a life. C183*

   Montana itself does not need to be harmed by metallic minerals and such. No person should have to suffer from money hungry people. Greed should not leave the environment into nothing but waste. C184

   There are many reasons why I don't want the coal plant built in Highwood. One is that I'm Native American and we as native people respect the earth. We treat it as we would our mother. And I don't think anyone in the right mind would be polluting their own family. Also the burning of coal is the most polluting way to generate electricity. C186

   The HGS is a disaster waiting to happen….Not only is it a dangerous and poorly thought out plan, but a biohazard that will affect the people, their health, the environment and surrounding communities. C187

   There is going to be a lot of people suffering from the [power plant]. The people that are going to have babies with deformities. I really feel bad for them. Like that could be any one of us me or you. Imagine I would just die if it happened to me. I think really that's the worst reason for building a plant around here or really anywhere for that matter. C188

   I am 19 years old and an enrolled member of the Chippewa-Cree Tribe….Growing up in North-Central Montana was a joy. Playing outside without a worry. Breathing the fresh air and swimming in the mountain creeks. I had a special childhood. My parents never had to worry about the environment affecting my health. From this I would like to say that I want my family to grow up the same way. I don't want to worry about my daughter is breathing when she is outside. C189

   This plant can do no good for the people or for the earth. It will slowly but brutally kill our environment and the human race….It is so sickening to hear what this plant can do to us. I can harm our poor defenseless babies who cannot defend themselves. A mother can do everything right when she is pregnant and it still would not matter because of something she ate or something in the air that came from this plant that damaged her child. Her child could have learning difficulties or even die from the pollutants. C190

It appalls me to think that these people would want to put up a power plant that is more harmful to us and the environment. Do they bother to think about the effects this plant will have on our children or our future children? C191

I am a middle age mother of three and I have grandchildren and one more on the way! And I don't want my pregnant daughter or unborn grandchild breathing in any mercury. I don't want my dad or grandson or anyone lese with asthma having to breathe the air with all the chemicals they will put in the air! There are a lot of reasons but those are the main two reasons. C196

After reading the article on the Highwood Power Project, I started to think about the effects it would have on us as Indian People. Indian people, including our tribe the Chippewa Cree Tribe, are already suffering from diabetes, heart disease, alcoholism, drug abuse, and fetal alcohol syndrome. Now, with this proposed coal plant, we will suffer more health problems. C198

I don't want to be screaming racism or being called a racist, but I can also paint that picture. Ever since Columbus came to this country the conquerors always did use disease to kill our people. I see the coal fired generating plant as another way to kill our people and make us further dependent on the government. C198

The pollutants coming out of plants get not only into our waters, but onto our land and into our people….we won't be able to teach our children and generations to come the tradition and fishing and hunting because our wildlife will be contaminated with this methyl mercury. We will no longer be able to eat our own wildlife as our ancestors once did….Being Native American it is our tradition to eat fish and dry meat and other miscellaneous foods that come from our wildlife. C201

I am a student at Stone Child College of Rocky Boy Reservation. I have grew up here in Rocky Boy my whole life. I do not want to see future generations robbed of blue skies and clean water, which I take for granted. C202

When I thought about how many things we do outside and how much we have to cut down on just so we can try our best on keeping healthy I love to go out and do things with my baby, like go for walks, play out side with her, and how I would have to go way out of my way just to go and have fun with her, I am not the only one that has to cut down on things, there are farmers that go out side everyday and there are guys that go hunting would have to stop because everything that is in the air, water, and wheat. They do not go hunt just for them self they give the meat to everyone that needs it. There are lots of people around here that don't got money for food and they depend on people giving them some meat. I can see why they would want to build a power plant, because they have family and they need food, but they make enough for them to have a good health plan, but there are lots of us that don't and we need that money so we can get our kids things and I know that the money that they will get most likely have to save so they can move out of here so they can have the healthy family that they want. I just need to know why they would want to make something that can destroy so many people and animals. C203

I am writing on behalf of my six children, along with other members of my family, who wish to oppose the building of any coal plant especially in our local area, the city of Great Falls. Mainly because this proposed Great Falls coal plant will affect the well being of my children's future, regarding future health concerns. Besides this coal plant will need to be operated with a lot of water we don't have. I'm also worried about the mercury pollution in Montana's lands, air and water. C268

Response: Thank you for your comments.

6. *Under the Montana Governor's American Indian Nation Council Guiding Principles: In formulating or implementing policies, agreements, cooperative grants, activities of any nature, or administrative rules that have direct Tribal implications, the following principles should be considered. 1. Establish and preserve harmonious Tribal/State relationships. 2. Strive for mutual understanding and respect for the sovereign Tribal and State governments. 3. Work cooperatively when the rights of one government to the other are unclear or would result in harm to either government's citizens.*

   Response: RUS formally initiated consultation with nine tribal organizations – Blackfeet Tribal Business Council, Crow Tribal Council, Chippewa-Cree Tribal Council, Fort Belknap Community Council, Fort Beck Tribal Executive Board, Little Shell Tribe of Chippewa Indians of Montana, Northern Cheyenne Tribal Council, and the Montana-Wyoming Tribal Leaders Council -- with a January 20, 2006 letter describing the proposed power plant. These letters were followed up by phone calls to each of these organizations. Language from the Montana Governor's American Indian Nation Council Guiding Principles has been added to Issue 14 on Environmental Justice and Protection of Children in Section 1.6.1 of the FEIS.

CUM-1800 CUMULATIVE IMPACTS

1. *Table 5-1 is a summary of direct and indirect impacts associated with the various options. This table appears to address only the plant site area and leaves out the plant's impact on the surrounding area. The 400-foot stack SME plans to build conveniently disperses the pollutants from the power plant far and wide. Table 5-1 is misleading because it does not address the entire dispersal area. The Soils, Topography, and Geology section should include irreversible adverse soil impact from mercury, lead, and other heavy metal releases. Potential acid rain harm to forests within the dispersal area should be documented. C50*

   Response: The impact analysis in Chapter 4 did not identify irreversible adverse soils impacts from mercury, lead and other heavy metals releases. Nor were acid rain impacts to forests identified. Therefore, they are not summarized on Table 5-1.

2. *The cumulative effects of the Great Falls' refinery's air discharges, the new malting plant, 10th Avenue South vehicular traffic, the west bank linseed oil plant, and Malmstrom coal plant (formerly they were burning oil) need to be considered in this application and in the DEIS in a comprehensive way with appropriate studies and actual test measurements so that we will know what is actually happening here. C78*

   Response: With all the major and minor emissions sources in the Great Falls area, the area is still in attainment with NAAQS and MAAQS. Ambient air quality samples from Great Falls and the surrounding area are compiled in Table 3-5 of the EIS. The data show that ambient air quality in the area, with the existing sources operating, is well below the NAAQS and MAAQS. SME submitted modeling to estimate the combined impacts of all existing and proposed emission sources. The sum of the modeled impacts and the existing ambient concentrations shows that predicted concentrations will be well below the NAAQS and MAAQS.

3. *What effect would a proposed transmission line from Canada to Great Falls have on the energy grid and SME? C80*

   Response: The Great Falls substation would have to be enlarged to handle the additional energy and there would have to be additional outgoing transmission lines.

4. *This DEIS must consider the cumulative effects that local deposition of mercury could have on Montana's already mercury impaired waterbodies and the public that relies on those waters for subsistence. C95, C134*

   Response: According to the analysis in Section 4.5.2.2.4, mercury emissions from the HGS would be primarily in the form of elemental mercury, which is readily transported long distances through the atmosphere. It is likely that there would be minimal local deposition of mercury from the HGS in Montana's water bodies, although there have been recent indications that local deposition of mercury from industrial sources, in general, may be a greater concern than once was thought. The

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primary source of mercury in these water bodies is believed to come from the global pool of atmospheric mercury with a significant contribution by overseas power plants. Pursuant to new federal and state mercury rules, mercury emissions from Montana power plants will be required to drop by three-quarters, although that probably will not equate to a similar drop in deposition given the likely source of most of our deposited mercury.

5. *How much additional carbon dioxide will be added by the two trains that come to Great Falls each week? This needs to be added to the cumulative affects from greenhouse gases. Another area that needs to be looked at is the cumulative effects of increased power costs. In addition to the costs associated with development of coal there are also costs to reclaim the lands disturbed by coal strip mining. This takes additional diesel fuel which in turn increases the carbon dioxide emitted. The cumulative affects need to consider coal mining and coal shipping as well as coal burning. C104*

   Response: Thank you for your comment. A statement to this effect has been added to the FEIS.

6. *Page 5-11, first paragraph, fourth and fifth lines. The DEIS states that "coal-fired power plants are now the remaining emitter of mercury in the U.S." Based on what analysis? There are many "remaining" sources of mercury emissions in the U.S., which include coal-fired power plants. C128*

   Response: This statement has been reworded to make it clearer. Coal-fired power plants constitute the main single source of mercury emissions in the U.S. See Figure 3-22 for clarification.

7. *Page 5-13, Proposed Coal-fired Power Plants Section. Please note that the Otter Creek Project is speculative and has not submitted an air quality permit application or otherwise formally announced its size, location, etc. Therefore including it in this list of proposed plants is not appropriate. Further, the reference to Rocky Mountain Power near Hardin has an incorrect megawatt rating – the air quality permit for RMP lists the unit at 113 MW. C128*

   Response: The Otter Creek Project fits the definition as "conceptualized" as stated in the subject paragraph. Including it is therefore appropriate. The megawatt rating for RMP has been corrected.

8. *With all the proposed power plants I'm concerned with cumulative pollution & water supply. C238*

   Response: Chapter 5 of the EIS looks at cumulative impacts for both air pollution and water supply. In addition, the air quality analysis in Chapter 4 looks at the local cumulative effects of the HGS and all other emissions sources in the Great Falls area. These analyses conclude that cumulative effects on both air quality and water quantity from the HGS would not be significant.

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