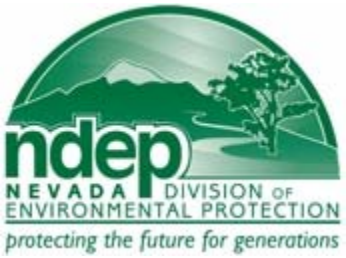
CLASS I APPLICATION REVIEW

FOR:

White Pine Energy Associates, LLC
White Pine Energy Station
Near McGill, Nevada

Class I Operating Permit to Construct AP4911-1502
(FIN # A0586)



BY

STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR POLLUTION CONTROL

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Staff Engineer

December 28, 2006

1.0 INTRODUCTION

White Pine Energy Associates, LLC, (WPEA) submitted a Class I Operating Permit to Construct Application to the Nevada Division of Environmental Protection - Bureau of Air Pollution Control (BAPC) on December 21, 2005. White Pine Energy Associates is wholly owned by WPEA Associates, L.P., which is managed by WPEA Development, LLC. WPEA is proposing to construct and operate a new, base-load coal-fired power generation facility, approximately 30 miles north of Ely, in White Pine County, Nevada. The proposed facility will have a 1,590 Megawatt (MW) nominal generating capacity and will be fueled by sub-bituminous coal. The facility will consist of:

- Three, 530 MW nominal, super-critical, pulverized coal-fired boilers; each with a multiple shell condensing steam turbine generator
- One, distillate fuel-fired auxiliary boiler
- Coal unloading and handling facilities
- Active and Inactive coal storage piles
- Fly ash handling and storage facilities
- Lime unloading, storage and handling facilities
- Paved and unpaved roadways
- Emergency diesel engine driven emergency generator and firewater pump
- Three, multi-cell, natural draft (dry) cooling towers
- One, 330,000 gallon #2 Distillate fuel oil storage tank
- Diesel fuel storage tanks

The WPEA facility is to be constructed on a site that consists of approximately 1,280 acres of Bureau of Land Management (BLM) land located about 30 miles north of the town of Ely, Nevada. The boiler units will be located approximately at UTM 691.243 Km East by 4,399.588 Km North, Zone 11 (Sections 31 and 32, Township 22 North, Range 64 East, and Sections 5 and 6, Township 21 North, Range 64 East in Hydrographic Area 179 – Steptoe Valley). The Standard Industrial Classification (SIC) number for the facility is 4911 (Electric Services), since the primary product is electric power for sale.

2.0 DESCRIPTION OF PROCESS

2.1 STEAM BOILERS

The WPEA facility will operate three, 530 MW nominal supercritical pulverized coal-fired (PC) steam boilers for primary power generation, with a rated heat input of 5,216 Million Btu per hour (MMBtu/hr) each. During normal operations, the boilers will fire pulverized sub-bituminous coal to generate steam. The steam is used to drive condensing steam-turbine generators, which produce electrical power. The boilers are also permitted to burn ultra low sulfur distillate fuel alone, or in combination with coal, during startup or shutdown periods. The boilers will be permitted to operate up to 8,760 hours per year, each. The emissions control equipment for each boiler, during normal operations, will consist of low NO_x burners, over-fire air and selective catalytic reduction (SCR) for NO_x emissions control, spray dryer absorber (dry scrubber) for SO_2 emissions control, fabric filter baghouse for particulate matter control and halogenated activated carbon for mercury emissions control. This set of control equipment will also serve to control hazardous air pollutants and acid gases (H_2SO_4, HCL, HF). The boilers are subject to the requirements of New Source Performance Standard (NSPS) Subpart Da, *Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978*. The boilers are subject to the requirements of New Source Performance Standard (NSPS) Subpart HHHH, *Emission Guidelines and Compliance Times for Coal-Fired Electric Steam Generating Units*.

2.2 AUXILIARY BOILER

The WPEA facility will include an auxiliary boiler to be used during startup of the PC boilers and during periods when a PC boiler is off line. Operation of the auxiliary boiler will be limited to 500 hours per year, its fuel source limited to ultra low sulfur distillate fuel with a maximum heat input rate of 367 MMBtu/hr. The auxiliary boiler will have low NO_x burners, flue gas recirculation and combustion control optimization to limit emissions. The auxiliary boiler is subject to the requirements of both the New Source Performance Standard (NSPS) Subpart Db, *Standards of Performance for Industrial – Commercial – Institutional Steam Generating Units* and the National Emission Standards for Hazardous Air Pollutants (NESHAP) Subpart DDDDD, for Industrial, Commercial, and Institutional Boilers and Process Heaters.

2.3 RAILCAR UNLOADING STATION

Railcars will be brought into a partially enclosed railcar unloading structure. The railcars will be connected with a rotary coupling so they can be tipped to dump the coal. The coal will be dumped into an underground hopper. From the underground hopper, the coal will be transferred to a short conveyor by drop operation. From the short conveyor, the coal will be transferred to stackout conveyor #1. A dust suppression spray will be used to control dust emissions from the railcar unloader. The dust suppression spray will also reduce emissions throughout the downstream conveying process. A maximum of 8,359,116 tons per year of coal will be unloaded at a maximum unloading rate of 4,000 tons per hour. Coal operations from the conveyance and transfer systems are subject to NSPS Subpart Y, *Standards of Performance for Coal Preparation Plants*.

2.4 EMERGENCY COAL PILE

The Emergency Coal Pile and reclaim will be in use during maintenance or repair of the Active Pile Reclaim. During those times, the Emergency Coal Pile will have an approximate exposed surface area of 0.70 acres, assuming a cone-shaped pile with an approximate base diameter of 173 feet and a pile height of 65 feet. Fugitive dust emissions will be controlled by dust suppression water sprays. Coal operations from the conveyance and transfer systems are subject to NSPS Subpart Y, *Standards of Performance for Coal Preparation Plants*.

2.5 EMERGENCY PILE RECLAIM

Coal will be transferred from the Emergency Coal Pile to the emergency conveyor via a drop operation under the Emergency Coal Pile. The emergency conveyor will transport the coal to the Transfer House. The drop onto the emergency conveyor will take place in an enclosed area under the Emergency Coal Pile. The Emergency Pile Reclaim will be enclosed and all emissions will exhaust through a fabric filter. A maximum of 8,359,116 tons per year of coal will be transferred at a maximum rate of 2,000 tons per hour. Coal operations from the conveyance and transfer systems are subject to NSPS Subpart Y, *Standards of Performance for Coal Preparation Plants*.

2.6 STACK-OUT TRANSFER POINT #2

The coal will be dropped from stack-out conveyor #2 onto Active Pile #1 or Active Pile #2 via a stack-out tube or radial stacking tube at Stack-out Transfer Point #2. A maximum of 8,359,116 tons per year of coal will be transferred at a maximum rate of 4,000 tons per hour. Transfer to a storage pile is ***NOT*** subject to NSPS Subpart Y, *Standards of Performance for Coal Preparation Plants*.

2.6 ACTIVE PILES #1 & #2

Active Piles #1 & #2 will both approximate the shape of a cone with an approximate base diameter of 244 feet and a pile height of 92 feet. Fugitive dust emissions from both Active Pile #1 & #2 will be controlled by dust suppression water sprays.

2.7 ACTIVE PILE RECLAIM

Coal will be transferred from the Active Piles to the active pile conveyor via a drop operation under the Active Piles. From the active pile conveyor, the coal will be dropped onto reclaim conveyor #1. The drop onto the active pile conveyor, the active pile conveyor itself and the drop onto reclaim conveyor #1 will take place in an enclosed area under the Active Piles. Emissions from the Active Pile Reclaim will exhaust through a fabric filter. A maximum of 8,359,116 tons per year of coal will be transferred at a maximum rate of 4,000 tons per hour. Coal operations from the conveyance and transfer systems are subject to NSPS Subpart Y, *Standards of Performance for Coal Preparation Plants*.

2.8 TRANSFER TOWER

The Transfer Tower will receive coal from stack-out conveyor #1 (from Railcar Unloading), reclaim conveyor #1 (from Active Piles) and the emergency conveyor (from Emergency Coal Pile) for transfer onto stack-out conveyor #2 (for transfer to the Active Piles) and reclaim conveyor #2 (for transfer to the Tripper Deck). The Transfer Tower may also contain a crusher for crushing any large pieces of coal. The Transfer Tower will be enclosed and emissions from all transfers will exhaust through a fabric filter. A maximum of 16,718,232 tons per year of coal will be transferred at a maximum rate of 10,000 tons per hour. Coal operations from the crushing and conveying are subject to NSPS Subpart Y, *Standards of Performance for Coal Preparation Plants*.

2.9 TRIPPER DECK

The Tripper Deck conveyor will receive coal from reclaim conveyor #2 and transport it to the storage silos. The Tripper Deck conveyor, silos and two transfer points will be enclosed and the enclosure will exhaust through a fabric filter. A maximum of 8,359,116 tons per year of coal will be transferred at a maximum rate of 4,000 tons per hour. Coal operations from the conveying and storage are subject to NSPS Subpart Y, *Standards of Performance for Coal Preparation Plants*.

2.10 INACTIVE PILE

The Inactive Pile will be approximately rectangular in shape. The approximate dimensions of the pile will be 1,685 feet by 1,035 feet at the base with a pile height of 30 feet and a side slope of 2:1. Approximately 4.3% of the pile may be disturbed once per week. To account for this, approximately 4.3% of the pile surface area is assumed to be affected by pile maintenance and is calculated as an active stockpile. The remaining 95.7%, the Inactive Portion, is assumed to be affected by wind erosion and emissions are calculated as industrial wind erosion. Loading onto the pile is included in the active stockpile emission factor. Fugitive dust emissions will be controlled by dust suppression spray water and surface crusting agents as necessary.

2.11 BOTTOM ASH TRANSFER POINT #1

The term “bottom ash” is used to refer collectively to the boiler bottom ash and pyrite rejects. This waste stream is modeled as a separate waste stream for disposal in the On-Site Disposal Facility.
Bottom ash from the boiler is collected by a submerged chain conveyor and dropped onto the bottom ash conveyor at Bottom Ash Transfer Point #1. The Facility may have a grinder for reducing the size of any large pieces of bottom ash, otherwise the bottom ash will be dropped from the submerged chain conveyors onto the bottom ash conveyor for transport to the Bottom Ash Bunker. If a grinder is used, a building will be used to enclose the grinder and two transfer points. Since AP-42, Section 11.24 lists emissions from wet grinding as negligible, the emissions from the grinding operation and two enclosed transfer points are not calculated. Instead, emissions are conservatively calculated for the single exposed transfer point. The bottom ash will have a high surface moisture content thereby, minimizing fugitive emissions. A maximum of 94,610 tons per year of bottom ash will be transferred at a maximum rate of 40 tons per hour.

2.12 BOTTOM ASH BUNKER

Bottom ash will be dropped from the bottom ash conveyor into the Bottom Ash Bunker. The Bottom Ash Bunker will be partially enclosed. A maximum of 94,610 tons per year of bottom ash will be loaded into the Bottom Ash Bunker at a maximum rate of 40 tons per hour.

2.13 BOTTOM ASH TRANSFER POINT #2

The bottom ash will be loaded from the Bottom Ash Bunker into bottom ash trucks for transport to the On-Site Disposal Facility. The bottom ash will have a high surface moisture content thereby, minimizing fugitive emissions. A maximum of 94,610 tons per year of bottom ash will be loaded at a maximum rate of 150 tons per hour.

2.14 BOTTOM ASH TRANSFER POINT #3

The bottom ash will be dropped from the bottom ash trucks into the On-Site Disposal Facility. The bottom ash will have a high surface moisture content thereby, minimizing fugitive emissions. A maximum of 94,610 tons per year of bottom ash will be transferred at a maximum rate of 150 tons per hour.

2.15 FLY ASH SILOS

The term “fly ash” is used to refer collectively to the ash removed from the boiler economizer and air heater hoppers and the fly ash and scrubber waste from the fabric filter. The fly ash may be transported off-site via rail and/or truck, or may be disposed of on-site. If disposed of on-site, there will be more transfer points and more of a possibility of particulate matter emissions. To be conservative, emissions related to on-site disposal are calculated for this technical support document.

For on-site disposal, the fly ash will be mixed with water prior to disposal. The mixing station may be located near the power island, or next to the On-Site Disposal Facility.

The fly ash will be transferred pneumatically from the boiler economizer and air heater hoppers and from the boiler baghouse to one or more Fly Ash Silo(s). As a worst case estimate, the transfer of portions of the fly ash to multiple silos is modeled as one transfer of all fly ash to one silo (a separate modeling evaluation showed maximum impacts occur from a single silo, instead of three individual silos). From the Fly Ash Silo(s), the fly ash will be pneumatically transferred to either the loading facility or a mixing chamber. Each silo vent will exhaust through a vent filter. A maximum of 576,951 tons per year of fly ash will be transferred at a maximum rate of 200 tons per hour.

2.16 FLY ASH MIXING STATION

A pneumatic conveyor will transport the fly ash from the Fly Ash Silo(s) into a mixing station next to the boiler fabric filter. In the mixing station, the fly ash will be mixed with approximately 30% water to create a wet, dough-like product. The mixing station will exhaust through a fabric filter. A maximum of 576,951 tons per year of fly ash will be transferred at a maximum rate of 200 tons per hour.

2.17 FLY ASH TRANSFER POINT #1

Fly ash will be dropped from the Fly Ash Mixing Station into fly ash trucks for transport to the On-Site Disposal Facility. As stated above, the fly ash will be in a wet, dough-like form thereby minimizing fugitive emissions. A maximum of 822,567 tons per year of wetted fly ash will be transferred at a maximum rate of 285 tons per hour.

2.18 FLY ASH TRANSFER POINT #2

Fly ash will be transferred from the fly ash trucks to the On-Site Disposal Facility by drop operation. As stated above, the fly ash will be in a wet, dough-like form thereby minimizing fugitive emissions. A maximum of 822,567 tons per year of wetted fly ash will be transferred at a maximum rate of 285 tons per hour.

2.19 ON-SITE DISPOSAL FACILITY

The wet, dough-like fly ash mixture and bottom ash will be deposited into the On-Site Disposal Facility for permanent disposal. The fly ash mixture will solidify to a concrete-like substance within several hours, thereby greatly reducing the potential for fugitive emissions. The On-Site Disposal Facility will consist of earth moving activities and wind erosion. Wind erosion will occur on the piles of cover material, top soil and the working cell of the disposal facility, and is estimated at 10 acres. Once disposal in a cell has been completed, the area will be reclaimed to natural vegetation. Wetted material, water sprays and surface crusting agents will be used to control fugitive emissions.

2.20 CARBON SILO

Halogenated Activated Carbon will be delivered to the Facility in pneumatic trucks. Trucks will blow the carbon into the Carbon Silo. From the Carbon Silo, the carbon will be pumped to the injection grid in the flue gas stream. The Carbon Silo will exhaust through a vent filter. A maximum of 2,976 tons per year of carbon will be transferred at a maximum rate of 1,000 tons per hour.

2.21 LIME RAILCAR UNLOADING STATION

Lime will be delivered to the Facility in pneumatic trucks or railcars. If the lime is delivered by railcar, there will be more transfer points and more possibility of particulate matter emissions. To be conservative, railcar delivery is modeled.

Railcars will be brought into a partially enclosed railcar unloading structure. The railcars will have doors on the bottom which will open to dump the lime, or the cars will be connected with a rotary coupling so they can be tipped to dump the lime. The lime will be dumped into an underground hopper. From the underground hopper, the lime will be transferred to a short conveyor and then onto the lime conveyor. The drop from the hopper, the short conveyor and two transfer points will all occur in an enclosed area under the Lime Railcar Unloading Station. Emissions from the enclosed area will vent through a fabric filter. A maximum of 100,114 tons per year of lime will be unloaded at a maximum rate of 1,000 tons per hour.

2.22 LIME SILO

Lime will be transferred from the lime conveyor to the Lime Silo. From the Lime Silo, the lime will be gravity-fed to a mixing station. At the enclosed mixing station, a slurry will be created. The Lime Silo will exhaust through a vent filter. A maximum of 100,114 tons per year of lime will be transferred at a maximum rate of 1,000 tons per hour.

2.23 EMERGENCY DIESEL ENGINE DRIVEN GENERATOR

An emergency diesel engine driven generator, rated at 1,500 kW power output, will be installed at the Facility to provide electrical power for safe plant shutdown and critical load operation in the event of loss of the electrical grid. Pursuant to NAC 445B.288(2)(h), the emergency diesel engine driven generator would be deemed an insignificant activity and therefore, exempt from permitting. However, pursuant to NAC 445B.288(2), if the emission unit is subject to another specific applicable requirement (i.e., 40 CFR Part 60, 61 or 63), it is not considered an insignificant activity and is not exempt from obtaining an operating permit.
NSPS federal requirement 40 CFR Part 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE) had an effective final date of September 11, 2006 and applies to a CI ICE whose construction, modification or reconstruction commenced after July 11, 2005. Also, stationary CI ICE that are NOT fire pumps and manufactured after 2007 or later are subject to the final rule.
Pursuant to NAC 445B.288(2), the emergency diesel engine driven generator is subject to permitting and also the requirements of NSPS 40 CFR Part 60, Subpart IIII.

2.24 EMERGENCY DIESEL ENGINE DRIVEN FIREWATER PUMP

The Facility will have an Emergency Diesel Engine Driven Firewater pump rated at 450 Hp output. Operation of the emergency diesel engine driven firewater pump will be limited to maintenance testing and emergency use.
NSPS federal requirement 40 CFR Part 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE) had an effective final date of September 11, 2006 and applies to a stationary fire pump CI ICE manufactured AFTER July 1, 2006.
Pursuant to NAC 445B.288(2), the emergency diesel engine driven firewater pump is subject to permitting and also the requirements of NSPS 40 CFR Part 60, Subpart IIII.

2.25 DISTILLATE FUEL STORAGE TANK (330,000 GALLON; ABOVE GROUND)

The Facility will have a 330,000-gallon, vertical, fixed roof storage tank for low sulfur distillate fuel for use in the auxiliary boiler and the PC boilers during start-up operations. The tank will be equipped with a fixed roof and conservation vent valves. A maximum of 12 turnovers per year is expected for the distillate fuel storage tank.
The distillate fuel storage tank will be bermed to contain approximately 125% of the contents of the tank. The berm will be impervious to water and oil. Spill prevention control and countermeasures will be covered in the Facility's Spill Prevention, Control and Countermeasure (SPCC) Plan that will be prepared in accordance with 40 CFR Section 112.
The 330,000 gallon distillate fuel storage tank will store material with a maximum vapor pressure less than 3.5 kPa and therefore, is ***NOT*** subject to the recordkeeping requirements of NSPS Subpart Kb, *Standards of Performance for Volatile Organic Liquid Storage Vessels*.

2.26 DIESEL FUEL STORAGE TANK (20,000 GALLON; ABOVE GROUND)

The Facility will have a 20,000-gallon, vertical, fixed roof storage tank for diesel fuel for use in plant vehicles. A fuel dispensing station will be located adjacent to the diesel fuel storage tank. The tank will be equipped with conservation vent valves. A maximum of 26 turnovers per year is expected for the diesel fuel storage tank. Pursuant to NAC 445B.288, the 20,000 gallon, diesel fuel storage tank has been deemed an insignificant activity and therefore, not subject to permitting requirements.

2.27 DIESEL FUEL STORAGE TANK; EMERGENCY GENERATOR (2,000 GALLON; ABOVE GROUND)

The Facility will have a 2,000-gallon, diesel fuel horizontal storage tank for use in the Emergency Diesel Engine Driven Generator. The tank will be equipped with conservation vent valves. A maximum of 25 turnovers per year is expected for the emergency generator diesel fuel storage tank. Pursuant to NAC 445B.288, the 2,000 gallon, diesel fuel storage tank has been deemed an insignificant activity and therefore, not subject to permitting requirements.

2.28 DIESEL FUEL STORAGE TANK; EMERGENCY FIREWATER PUMP (500 GALLON; ABOVE GROUND)

The Facility will have a 500-gallon diesel fuel horizontal storage tank for use in the Emergency Diesel Driven Firewater Pump. The tank will be equipped with conservation vent valves. A maximum of 5 turnovers per year is expected for the emergency generator diesel fuel storage tank. Pursuant to NAC 445B.288, the 500 gallon, diesel fuel storage tank has been deemed an insignificant activity and therefore, not subject to permitting requirements.

2.29 GASOLINE STORAGE TANK (500 GALLON; ABOVE GROUND)

The Facility may have a 500-gallon, unleaded gasoline horizontal storage tank for use in plant maintenance and administrative vehicles. The tank will be equipped with conservation vent valves. A maximum of 9 turnovers per year is expected for the gasoline storage tank. Pursuant to NAC 445B.288, the 500 gallon, gasoline fuel storage tank has been deemed an insignificant activity and therefore, not subject to permitting requirements.

3.0 APPLICABLE REQUIREMENTS

Applicable requirements are those regulatory requirements that apply to a stationary source or to emissions units contained within the stationary source. In Nevada's program, the regulations governing the emissions of air pollutants from which the applicable requirements originate, are derived from four categories of regulations. These four categories consist of the requirements contained in the Nevada Revised Statutes (NRS), the Nevada Administrative Code (NAC), the Applicable State Implementation Plan (ASIP), and the Code of Federal Regulations (CFR, contained in various Parts within Title 40).

3.1 GENERALLY APPLICABLE REQUIREMENTS

Of the four categories of regulations governing emissions of air pollutants, there are many generally applicable requirements that apply to stationary sources and emission units located at a stationary source. A comprehensive summary of all the generally applicable permit requirements is contained in Sections I through V of the proposed operating permit to construct provided in Attachment 4.

3.2 SPECIFIC APPLICABLE REQUIREMENTS

The remainder of this section of the review will focus on specific applicable requirements associated with each emission unit or process at the WPEA facility. A list of the emission units, as identified in the application and a summary of the specific applicable requirements is contained in Table 3.2.1.

TABLE 3.2.1 - List of Emission Units and Associated Specific Applicable Standards

EU #	Unit Description	Applicable Standards					
		NAC (445B)	SIP (Article)	NSPS (40 CFR Part 60)	NESHAPS (40 CFR Parts 61, 63)	PSD (40 CFR Part 52)	Acid Rain (40 CFR Parts 72-78)
S2.001, S2.002 & S2.003	Pulverized Coal Utility Boilers	.3405, .305, .22017, .2202, .2203, .22047	SIP 445.721 & .731 8.2.1.1, 8.2.1.2	Subpart Da; Subpart HHHH (CAMR)	**CAMR removes Coal-fired Utility Boilers from (CAA 112(c) list)** **Not Applicable to MACT or NESHAPS**	52.21	72.6, 73 et seq., 75 et. seq., 77 et. Seq and 78 et. Seq.
S2.004	Auxiliary Boiler	.3405, .305, .22017, .2202, .2203, .22047,	SIP 445.721 & .731 8.2.1.1	Subpart Db	**Subpart DDDDD**	52.21	72.6, 73 et seq., 75 et. seq., 77 et. Seq and 78 et. Seq.
PF1.001 – PF1.003	Coal Handling; Railcar Unloading	.3405, .305, .22017, .22033	SIP 445.721 & .732	Subpart Y	N/A	52.21	N/A
S2.005 & S2.006	Coal Handling; Emergency Coal Pile Reclaim	.3405, .305, .22017, .22033	SIP 445.721 & .732	Subpart Y	N/A	52.21	N/A
PF1.004	Coal Handling; Stack-out Transfer #2	.3405, .305, .22017, .22033	SIP 445.721 & .732	N/A	N/A	52.21	N/A

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		NAC (445B)	SIP (Article)	NSPS (40 CFR Part 60)	NESHAPS (40 CFR Parts 61, 63)	PSD (40 CFR Part 52)	Acid Rain (40 CFR Parts 72-78)
S2.007 – S2.009	Coal Handling; Active Pile Reclaim	.3405, .305, .22017, .22033	SIP 445.721 & .732	Subpart Y	N/A	52.21	N/A
S2.010 – S2.017	Coal Handling; Transfer Tower	.3405, .305, .22017, .22033	SIP 445.721 & .732	Subpart Y	N/A	52.21	N/A
S2.018 – S2.020	Coal Handling; Tripper Deck Operations	.3405, .305, .22017, .22033	SIP 445.721 & .732	Subpart Y	N/A	52.21	N/A
PF1.005 & PF1.006	Bottom Ash Handling	.3405, .305, .22017, .22033	SIP 445.721 & .732	N/A	N/A	52.21	N/A
PF1.007– PF1.009	Bottom Ash Unloading; Truck Transfer	.3405, .305, .22017, .22033	SIP 445.721 & .732	N/A	N/A	52.21	N/A
S2.021 – S2.023	Fly Ash Silos	.3405, .305, .22017, .22033	SIP 445.721 & .732	N/A	N/A	52.21	N/A
S2.024 – S2.027	Fly Ash Mixing Station	.3405, .305, .22017, .22033	SIP 445.721 & .732	N/A	N/A	52.21	N/A
S2.027b	Railcar/Truck Loading (Optional)	.3405, .305, .22017, .22033	SIP 445.721 & .732	N/A	N/A	52.21	N/A
PF1.010 & PF1.011	Fly Ash Handling	.3405, .305, .22017, .22033	SIP 445.721 & .732	N/A	N/A	52.21	N/A
S2.028	Carbon Silo	.3405, .305, .22017, .22033	SIP 445.721 & .732	N/A	N/A	52.21	N/A
S2.029 – S2.031	Lime Railcar Unloading	.3405, .305, .22017, .22033	SIP 445.721	N/A	N/A	52.21	N/A
S2.032	Lime Silo	.3405, .305, .22017, .22033	SIP 445.721 & .732	N/A	N/A	52.21	N/A
S2.033	Emergency Diesel Generator	.3405, .305, .22017	SIP 445.721	**Subpart IIII (CI ICE)**	**Subpart ZZZZ** (Initial Notification)	52.21	N/A
S2.034	Emergency Diesel Firewater Pump	.3405, .305, .22017	SIP 445.721	**Subpart IIII (CI ICE)**	**Subpart ZZZZ? (NO, < 500 hp)**	52.21	N/A
S2.035	Fuel Storage	.3405, .305, .22017	SIP 445.721	N/A	N/A	52.21	N/A

3.2.1 NEVADA REVISED STATUTES

The Nevada Revised Statutes (NRS) is the statutory authority for the adoption and implementation of administrative regulations. The statutes relating to the control of air pollution are contained in NRS 445B.100 through 445B.640. The NRS specifies that the State Environmental Commission is the governing body given the power to adopt administrative regulations. Because the NRS is the enabling statutory authority, very few specific requirements are contained in the statutes. Rather, the NRS provides, generally, broad authority for the adoption and implementation of air pollution control regulations.

3.2.2 NEVADA ADMINISTRATIVE CODE

The Nevada Administrative Codes (NAC) are administrative regulations that contain specific requirements relating to the control of air pollution. The State Environmental Commission adopts these regulations. The NAC requires that, where state regulations are more stringent in comparison to Federal regulations, the State regulations are applicable. The NAC sets forth, by rule, maximum emission standards for visible emissions (opacity), PM10 and sulfur emitting processes. Other requirements are established for incinerators, storage tanks, odors and maximum concentrations of regulated air pollutants in the ambient air. Other NAC regulations specify the requirements for applying for and method of processing applications for operating permits. All of the equipment considered in this application must meet, at a minimum, the applicable standards and requirements set forth in the NAC. Specifically, the emission standards contained in NAC 445B.22027 through .22033 for particulate matter, 445B.2204 through .22047 for sulfur emissions, 445B.22017 for opacity, and 445B.310 for the ambient air quality standards must not be exceeded.

3.2.3 NEVADA APPLICABLE SIP (ASIP)

The Applicable State Implementation Plan (ASIP) is a document that is prepared by a State or Local air regulatory agency and required to be submitted to the U.S. EPA for approval. Title I of the Clean Air Act is the statutory authority for the U.S. EPA regulations that require a State to submit a SIP. The contents of the SIP are intended to show how a State, through the implementation and enforcement of the regulations contained in the SIP, will either show how attainment of the ambient air quality standards (NAAQS) will be achieved or how a State will continue to maintain compliance with the NAAQS. Nevada's most recent ASIP, which was approved by U.S. EPA, is based on State regulations codified in 1982 and has been amended from time to time through August 2006. In general, the regulations contained in the ASIP closely parallel the current NAC regulations. However, because the ASIP is based on older air quality regulations (at this time), compliance with all of the current NAC regulatory requirements does not necessarily ensure compliance with the ASIP requirements. All of the equipment considered in this application must meet, at a minimum, the standards set forth in the ASIP. Specifically, the emission standards contained in ASIP 445.731 for particulate matter, ASIP Article 8.2 for sulfur emissions, SIP 445.721 for opacity, and 12.1 for the ambient air quality standards must not be exceeded.

3.2.4 CODE OF FEDERAL REGULATIONS (CFR)

The Code of Federal Regulations (CFR) are regulations adopted by the U.S. EPA and published in the Federal Register pursuant to the authority of the granted by Congress in the Clean Air Act. The CFR addresses multiple aspects, including but not limited to, permitting requirements, performance standards, testing methods, and monitoring requirements.

3.2.4.1 New Source Performance Standards (NSPS)

The U.S. EPA has promulgated maximum emission standards and/or monitoring/recordkeeping methods for selected source categories. These standards are contained in Title 40 of the CFR, Part 60, and are known as the New Source Performance Standards (NSPS). The PC Utility Boilers are subject to Subpart Da and HHHH (CAMR), the Auxiliary Boiler is subject to Subpart Db, both the emergency diesel generator and the emergency diesel fire pump are subject to Subpart IIII, various coal handling processes are subject to Subpart Y, and the 330,000 gallon storage tank, because of the low vapor pressure of the liquid stored, is exempt from the requirements of Subpart Kb.

3.2.4.2 National Emission Standards for Hazardous Air Pollutants (NESHAP)

The federal NESHAP requirements are found in two parts of the 40 CFR: Part 61 and Part 63.

Part 61, which predates the Clean Air Act Amendments of 1990, includes specific standards, reporting and recordkeeping requirements, and test methods for the initial eight hazardous air pollutants: asbestos, benzene, beryllium, coke oven emissions, inorganic arsenic, mercury, radionuclides, and vinyl chloride. The regulations covering these eight hazardous air pollutants focused on health-based considerations. NESHAPs were established for certain operations that commonly emit the eight hazardous air pollutants.

Other substances were included for consideration due to the serious health effects, including cancer, that may occur from ambient air exposure to those substances. However, no specific restrictions were placed on facilities that used or released these compounds.

Under the Clean Air Act Amendments of 1990, Congress greatly expanded the Air Toxics program, creating a list of 189 substances to be regulated as hazardous air pollutants. Rather than regulating individual pollutants by establishing health-based standards, the new Air Toxics program granted EPA the authority to regulate specific industrial major source categories with NESHAPs based on maximum achievable control technology (MACT) for each source category. Thus, a number of NESHAPs have been established to regulate specific categories of stationary sources that emit (or have the potential to emit) one or more hazardous air pollutants.

The standards in 40 CFR Part 63 are independent of the NESHAPs contained in 40 CFR Part 61 which remain in effect until they are amended, if appropriate, and added to this part. More information on NESHAPs can be found at the EPA Unified Air Toxics Website.

NESHAPs may cover both major sources and area sources in a given source category. Major sources are defined as those facilities emitting, or having the potential to emit, 10 tons per year or more of one Hazardous Air Pollutant (HAP) or 25 tons per year or more of multiple HAPs. Major sources are required to comply with MACT standards. Area sources are defined as those facilities that are not major sources.

WPEA's OPTC application has identified two individual HAPs as having the potential to emit greater than the 10 tons per year, i.e. Hydrogen Fluoride (HF) and Hydrochloric Acid (HCL). Major source status for HAPs for the proposed WPEA facility will subject WPEA to any applicable NESHAP/MACT source standards.

3.2.4.2 National Emission Standards for Hazardous Air Pollutants (NESHAP) (cont.)

In October (10/28/05), EPA published two reconsideration notices in the Federal Register related to the Agency's Clean Air Mercury Rule (CAMR), which was signed on March 15, 2005. The first notice dealt with the rule itself, which will regulate Hg emissions from new and existing electric generating units (EGUs). Issues that the Agency stated in its intent to re-consider include:

- Phase I (2010) statewide Hg emission budgets and the unit-level allocations on which the budgets were based.
- Definition of "designated pollutant" under 40 CFR 60.21
- EPA's sub-categorization of EGUs that burn sub-bituminous coal
- Statistical analysis used to set NSPS emission limits
- Hg content in coal used to establish NSPS emission limits
- Definition of covered units as including municipal waste combustors
- Definition of covered units as including some industrial boilers.

The second notice dealt with the Agency's revision of its December 2000 regulatory finding on the emissions of hazardous air pollutants from electric utility generating units and the removal of coal- and oil-fired electric generating units from the Clean Air Acts Amendments (CAA) Section 112(c) list. This decision was published in the Federal Register on March 29, 2005.

On August 30, 2006, the BAPC queried EPA, Region IX the following question: Would the removal of coal-and oil-fired electric generating units from the Section 112(c) applicability list result in WPEA **NOT** being a Major Source for HAPs and thereby effectively negating WPEA being subject to NESHAP/MACT regulations for other categories for other emission units located at the facility?

Region IX responded on August 31, 2006 as follows: "The Revision Rule has no effect on MACT applicability at other emission units that may be collocated at the facility. Nothing about the de-listing of the source category (-vs- the de-listing of a particular pollutant) affects the inclusion of the utility boiler HAP emissions in determining whether a source is major for HAPs".

The utility boiler HAP PTE counts towards facility-wide HAP PTE and other category MACT regulations apply to other applicable emission units. The auxiliary boiler is subject to 40 CFR 63, Subpart DDDDD and emission standards for PM, CO and HCL apply. The emergency diesel generator is subject to 40 CFR, Subpart ZZZZ (initial notification requirements only).

3.2.4.3 Prevention Of Significant Deterioration Regulations (PSD)

Implementation of the federal PSD regulations is delegated to the State of Nevada by U.S.

EPA and these regulations are contained at 40 CFR Part 52.21. Therefore, BAPC implements the federal PSD regulations directly. These regulations specify federally required permitting procedures for each "major stationary source". The PSD regulations define a "stationary source" as "*any building, structure, facility, or installation which emits or may emit any air pollutant subject to regulation under the Act.*" A "building structure facility or installation" is defined as "*all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control) except the activities of any vessel. Pollutant-emitting activities shall be considered as part of the same industrial grouping if they belong to the same 'Major Group' (i.e., which have the same first two digit code) as described in the Standard Industrial Classification Manual, 1972, as amended by the 1977 Supplement.*"

"Major" is defined as the potential to emit of a stationary source, which equals or exceeds a specified threshold (in tons per year) of any air pollutant regulated under the Clean Air Act (40 CFR 52.21(b)(1)). The first threshold is for a stationary source that emits or has the potential to emit 100 tons per year or more of any regulated NSR pollutant and is defined as one of 28 specific categories of sources (see 40 CFR 52.21(b)(1)(i)(a)). The other applicability threshold is for any other stationary source that emits or has the potential to emit 250 tons per year of any regulated NSR pollutant (see 40 CFR 52.21(b)(1)(i)(b)). As mentioned above, the SIC code for this facility is 4911. Therefore, the major SIC grouping is 49, which is identified as "Electric, Gas, and Sanitary Services" in the SIC manual. Major stationary source status is classified at the 100 tons per year emission threshold for any pollutant regulated NSR pollutant as WPEA is identified as one of the 28 source categories. As identified in Section 4.0 of this review, the WPEA facility has the potential to emit greater than the 100 tons per year threshold for several NSR regulated pollutants and, as such, is classified as a major stationary source for PSD purposes.

3.2.4.3 Prevention Of Significant Deterioration Regulations (PSD) (Cont.)

Pursuant to the 1990 DRAFT New Source Review Workshop Manual, a PSD review is

triggered in certain instances when emissions associated with a new major source or emissions increases resulting from a major modification are "significant."

"Significant" emissions thresholds are defined two ways. The first is in terms of emission rates (tons/year).

40 CFR 52.21 lists the pollutants for which significant emissions rates have been established.

(1) For a new source which is major for at least one regulated attainment or noncriteria pollutant, (i.e., is subject to PSD review), all pollutants for which the area is not classified as nonattainment and which are emitted in amounts equal to or greater than those specified in 40 CFR 52.21 (> significant threshold) are also subject to PSD review.

3.2.4.4 Acid Rain

The Clean Air Act Amendments of 1990 (Title IV) established a requirement to reduce the emissions of pollutants contributing to acid rain (SO_2 and NO_x). It also established a

market-based emissions trading program for SO_2. U.S. EPA is responsible for developing regulations and implementing the requirements of the acid rain provisions of the Clean Air Act Amendments. As a result, U.S. EPA adopted acid rain related regulations at 40 CFR Parts 72 through 78.

The overall goal of the Acid Rain Program is to achieve environmental and public health benefits through reductions in emissions of SO_2 and NO_x. To achieve this goal, the program employs both traditional and innovative, market-based approaches for controlling air pollution. Title IV of the Clean Air Act sets as its primary goal the reduction of annual SO_2 emissions by 10 million tons below 1980 levels. To achieve these reductions, the law requires a two-phase tightening of the restrictions placed on fossil fuel-fired Power plants.

Phase I began in 1995 and affects 263 units at 110 mostly coal-burning electric utility plants located in 21 eastern and Midwestern states. An additional 182 units joined Phase I of the program as substitution or compensating units, bringing the total of Phase I affected units to 445. Emissions data indicate that 1995 SO_2 emissions at these units nationwide were reduced by almost 40% below their required level.

Phase II, began in the year 2000, tightens the annual emissions limits imposed on these large, higher emitting plants and also sets restrictions on smaller, cleaner plants fired by coal, oil, and gas, encompassing over 2,000 units in all. The program affects existing utility units serving generators with an output capacity of greater than 25 megawatts and all new utility units.

The NO_x program embodies many of the same principles of the SO_2 trading program in its design: a results-orientation, flexibility in the method to achieve emission reductions, and program integrity through measurement of the emissions. However, it does not "cap" NO_x emissions as the SO_2 program does, nor does it utilize an allowance trading system. The Act calls for a 2 million ton reduction in NO_x emissions by the year 2000. A significant portion of this reduction will be achieved by coal-fired utility boilers that will be required to install low NO_x burner technologies and to meet new emissions standards.

WPEA's PC Utility Boilers are subject to the provisions of the Acid Rain Program. WPEA will be submitting an Acid Rain Permit Application to the USEPA within the appropriate time frames.

4.0 EMISSIONS INVENTORY

4.1 EMISSIONS

See the following tables for a detailed list of the all facility's permitted emission limits. A PSD

review is triggered in certain instances when emissions associated with a new major source or emissions increases resulting from a major modification are "significant". For a new source proposed to be located in an "attainment area" which is major for at least one regulated NSR pollutant, all pollutants for which the area is not classified as "non-attainment" and which are emitted in amounts equal to or greater than the "de-minimus threshold level", are also subject to PSD review. Table 4.1 below is a facility-wide potential emission summary and a comparison to the Significant Emission Rates from the *New Source Review Workshop Manual*, (USEPA, 1990 Draft). Table 4.2 shows potential emission rates from each unit. From these Tables it is evident that WPEA will be designated a major stationary source for PM, PM_{10}, NO_x, SO_2, CO, VOC's, Pb, sulfuric acid mist and HF.

BAPC's calculations generally agree with WPEA's calculated potential to emit. BAPC is not including estimates of emissions for wind erosion from the coal pile(s) or the ash disposal area in the Tables below, however BAPC has reviewed and agrees with WPEA's emission estimates for these areas.

Hazardous Air Pollutants (HAPs) generated at the facility include HCl, HF, Manganese (Mn) and Formaldehyde. The PC Boilers emit HCl and HF as the primary HAP components.

Table 4.1 – Facility Wide Potential to Emit (Ton/Year)

Pollutant	Potential to Emit (Ton/Year)	PSD Significant Emission Rate (ton/yr) 40 CFR 52.21(b)(23)(i)
PM	**2,704.0**	25.0
PM_{10}	**2,687.0**	15.0
SO_2	**6,071.0**	40.0
CO	**10,287.0**	100.0
NO_x	**4,812.0**	40.0
VOC	**248.0**	40.0
Pb	**0.79**	0.6
H_2SO_4 Mist	**233.0**	7.0
HF	**46.0**	3.0 (total Fluoride)

Table 4.2 – Potential to Emit by Permit System

Emission Unit #	PM		PM_{10}		SO_2		CO		NO_x		VOC		Pb		H_2SO_4		HF		HCl		HAPs	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	Total (lb/hr)	Total (ton/yr)
S2.001	198	N/A	198	N/A	462	N/A	782	N/A	365	N/A	18.8	N/A	0.092	N/A	17.7	N/A	5.04	N/A	10.8	N/A	19.0	61.0
S2.002	198	N/A	198	N/A	462	N/A	782	N/A	365	N/A	18.8	N/A	0.092	N/A	18.0	N/A	5.04	N/A	11.0	N/A	19.0	61.0
S2.003	198	N/A	198	N/A	462	N/A	782	N/A	365	N/A	18.8	N/A	0.092	N/A	18.0	N/A	5.04	N/A	11.0	N/A	19.0	61.0
S2.004	18.4	N/A	18.4	N/A	0.57	N/A	14.7	N/A	36.7	N/A	1.10	N/A	–	–	0.022	N/A	–	–	–	–	0.13	0.033
System 5	1.46 total	1.53 total	0.51 total	0.53 total																		
PF1.001					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
PF1.002					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
PF1.003					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
System 6	0.28	N/A	0.28	N/A																		
S2.005					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S2.006					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
System 7	2.71	2.83	0.95	0.99																		
PF1.004					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
System 8	0.57	N/A	0.57	N/A																		
S2.007					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S2.008					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S2.009					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
System 9	0.57	N/A	0.57	N/A																		
S2.010					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S2.011					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S2.012					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S2.013					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S2.014					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S2.015					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S2.016					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S2.017					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Emission Unit #	PM		PM_{10}		SO_2		CO		NO_x		VOC		Pb		H_2SO_4		HF		HCl		HAPs	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	Total (lb/hr)	Total (ton/yr)
System 10	2.85	N/A	2.85	N/A																		
S2.018					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S2.019					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S2.020					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
System 11	0.024 total	0.03 total	0.009 total	0.01 total																		
PF1.005					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
PF1.006					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
System 12	1.45 total	5.99 total	0.36 total	1.45 total																		
PF1.007					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
PF1.008					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
PF1.009					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
System 13	1.20	N/A	1.20	N/A																		
S2.021					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S2.022					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S2.023					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
System 14a	0.57	N/A	0.57	N/A																		
S2.024					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S2.025					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S2.026					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S2.027					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
System 14b	0.57	N/A	0.57	N/A																		
S2.027b					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
System 15	0.098 total	0.14 total	0.03 total	0.05 total																		
PF1.010					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
PF1.011					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
System 16	0.60	N/A	0.60	N/A																		
S2.028					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Emission Unit #	PM		PM_{10}		SO_2		CO		NO_x		VOC		Pb		H_2SO_4		HF		HCl		HAPs	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	Total (lb/hr)	Total (ton/yr)
System 17	3.62	N/A	3.62	N/A																		
S2.029					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S2.030					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S2.031					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
System 18	1.20	N/A	1.20	N/A																		
S2.032					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
System 19																						
S2.033	0.66	0.17	0.66	0.17	0.024	0.006	11.6	2.89	21.0	5.29	1.55	0.39	–	–	0.001	0.0002	–	–	–	–	–	–
System 20																						
S2.034	0.15	0.01	0.15	0.01	0.005	0.0004	2.57	0.19	2.97	0.22	1.10	0.083	–	–	0.0002	0.00001	–	–	–	–	–	–
System 21																						
S2.035	–	–	–	–	–	–	–	–	–	–	N/A	0.06	–	–	–	–	–	–	–	–	–	–

5.0 PREVENTION OF SIGNIFICANT DETERIORATION DETERMINATION

As discussed above, 40 CFR Part 52.21 specifies that Prevention of Significant Deterioration (PSD) review is required for any new major stationary source or any major modification. A major stationary source is defined as any pollutant emitting activities, which belong to the same two digit Source Industry Classification (SIC), and:

1. emits 100 tons/yr or more of a regulated air contaminate as 1 of the 28 listed categories of sources listed in 40 CFR 52.21; or

2. emits 250 tons/yr or more of a regulated air contaminant and belong to any other category sources.

The WPEA facility is classified as 1 of the 28 listed categories of sources and the total potential to emit of a single NSR regulated pollutant exceeds 100 tons/yr. Therefore, the facility is a PSD major stationary source. It should be noted that the baseline date for the hydrographic area (HA - 179), Steptoe Valley, in which this facility is proposing to locate, has been previously triggered for the following pollutants as part of the Minor Source Baseline Date regulations under the Federal PSD program:

- North Steptoe Valley – 11/28/1984 for SO_2; 6/4/1979 for PM_{10};
- Middle Steptoe Valley – 6/4/1979 for PM_{10}.

Any modification of the facility that increases the emissions above the applicable significant emission threshold will require a new PSD/NSR review of the source. As such, additional emissions from this facility will consume increment (please see the discussion in Section 6).

5.0 PREVENTION OF SIGNIFICANT DETERIORATION DETERMINATION (Continued)

WPEA is required to submit a Best Achievable Control Technology (BACT) Analysis as part of their PSD application. WPEA has evaluated BACT, using the top-down approach, for each of the pollutants identified in Section 4, above, as being above the significance threshold. A top-down BACT analysis consists of the following:

- Identification of the available control technologies;
- Elimination of the technically infeasible control options;
- Ranking of the remaining control technologies in order from the most effective to the least effective;
- Evaluation of the most effective control option for economic, energy and environmental impacts, and if it is not eliminated on these impacts, acceptance of the technology as BACT; if not, evaluate the next most effective control option in the ranking; and
- Selection of the most effective control option not eliminated for economic or environmental impacts.

WPEA's BACT analysis is included as Attachment 2 of this review. BAPC concurs with WPEA's analysis. The following is a summary of each pollutant and selected BACT for each unit requiring a BACT analysis.

5.1 Pulverized Coal-fired Utility Boilers (combusting coal)

5.1.1 NO_x BACT Analysis

WPEA has selected Selective Catalytic Reduction (SCR) in series with Low NOx Burners (LNB) with Over Fire Air (OFA) as the BACT technology for controlling NO_x emissions from the boilers. WPEA is proposing an emission limit of 0.7 lb/MMBtu on a 24-hour rolling average for each boiler. This technology and emission limit is consistent with BACT selected in other projects on the RBLC database and EPA Region 4's PC Boiler Tables.

5.1.2 CO BACT Analysis

WPEA has selected combustion controls as the BACT technology for controlling CO emissions from the boilers. WPEA is proposing an emission limit of 0.15 lb/MMBtu on a 24-hour rolling average for each boiler. This technology and emission limit is consistent with BACT selected in other projects on the RBLC database and EPA Region 4's PC Boiler Tables.

5.1.3 SO_2 BACT Analysis

WPEA has selected dry scrubbing in combination with low sulfur coal as the BACT technology for controlling SO_2 emissions from the boilers. WPEA is proposing an emission limit of 0.09 lb/MMBtu on a 24-hour rolling average for each boiler while combusting coal with a sulfur content greater than or equal to 0.45 percent and an emission limit of 0.065 lb/MMBtu on a 24-hour rolling average for each boiler while combusting coal with a sulfur content of less than 0.45 percent. This technology and emission limit is consistent with BACT selected in other similar projects on the RBLC database and EPA Region 4's PC Boiler Tables. Additionally, Region 9 has questioned the effectiveness of the dry spray technology over the use of wet scrubbers. The BAPC evaluated WPEA's BACT analysis, technologies recently approved as BACT on the RBLC database, and EPA's publication *"Controlling SO_2 Emissions: An Analysis of Technologies,"* (EPA/600/SR-00/093, November 2000). The over-riding factor for ***not*** choosing the top technology (i.e., wet scrubber) is the negative environmental impacts. The BAPC would not have agreed on the choice of dry scrubbing based on the incremental cost alone.

5.1.4 PM/PM_{10} BACT Analysis

WPEA has selected Fabric Filter Dust Collection as the BACT technology for controlling particulate emissions from the boilers. WPEA is proposing an emission limit of 0.015 lb/MMBtu filterable PM and PM_{10}, on a 3-hour rolling average for each boiler. This technology and emission limit is consistent with BACT selected in other projects on the RBCL Clearinghouse database and EPA Region 4's PC Boiler Tables.

5.1 Pulverized Coal-fired Utility Boilers (combusting coal) (Continued)

5.1.5 H_2SO_4 mist and HF BACT Analyses

WPEA has selected a dry scrubber as the BACT technology for controlling emissions of H_2SO_4 mist and HF from the boilers. WPEA is proposing an emission limit of 3.4×10^{-3} lb/MMBtu, on a 3-hour rolling average and 9.7×10^{-4} lb/MMBtu for H_2SO_4 mist and HF, on a 3-hour rolling average, respectively. This technology and emission limits are consistent with BACT selected in other projects on the RBCL Clearinghouse database and EPA Region 4's PC Boiler Tables.

5.1.6 VOC BACT Analysis

WPEA has selected good combustion control (well designed and operated boilers) as the BACT technology for controlling VOC emissions from the boilers. WPEA is proposing an emission limit of 3.6×10^{-3} lb/MMBtu on a 3-hour rolling average for each boiler. This technology and emission limit is consistent with BACT selected in other projects on the RBLC database and EPA Region 4's PC Boiler Tables.

5.1.2 Pb BACT Analysis

WPEA has selected Fabric Filter Dust Collection as the BACT technology for controlling Pb emissions from the boilers. WPEA is proposing an emission limit of 1.8×10^{-5} lb/MMBtu on a 3-hour rolling average for each boiler. This technology and emission limit is consistent with BACT selected in other projects on the RBLC database and EPA Region 4's PC Boiler Tables.

5.2 Pulverized Coal-fired Utility Boilers (startup/shutdown conditions)

Table 5.2.1 BACT Limits during startup and shutdown

POLLUTANT	24-HOUR AVERAGE EMISSION LIMIT (lb/MMBtu)
SO_2	1.2
NO_x	0.45
CO	0.45
VOC	0.01
HF	0.019
H_2SO_4 Mist	0.05

5.3 Distillate fuel-fired Auxiliary Boiler

5.3.1 NO_x BACT Analysis

WPEA has selected LNB and Flue Gas Recirculation (FGR) as the BACT technology for controlling NO_x emissions from the boiler. WPEA is proposing an emission limit of 0.1 lb/MMBtu on a 3-hour rolling average. This technology and emission limit is consistent with BACT selected in other similar projects on the RBLC database.

5.3.2 CO BACT Analysis

WPEA has selected combustion controls as the BACT technology for controlling CO emissions from the boiler. WPEA is proposing an emission limit of 0.04 lb/MMBtu on a 3-hour rolling average. This technology and emission limit is consistent with BACT selected in other similar projects on the RBLC database.

5.3.3 SO_2 and H_2SO_4 mist BACT Analysis

WPEA has selected firing ultra low sulfur distillate fuel (≤0.0015% by weight) as the BACT technology for controlling SO_2 and H_2SO_4 mist emissions from the boiler. WPEA is proposing emission limits of 1.6×10^{-3} lb/MMBtu for SO_2 on a 3-hour rolling average and 6.0×10^{-5} lb/MMBtu for H_2SO_4 mist on a 3-hour rolling average, respectively. This technology and emission limits are consistent with BACT selected in other similar projects on the RBLC database.

5.3.4 PM/PM_{10} BACT Analysis

WPEA has selected ultra low sulfur distillate fuel as the BACT technology for controlling PM and PM_{10} emissions from the boiler. WPEA is proposing an emission limit of 0.05 lb/MMBtu for TOTAL PM and PM_{10} on a 3-hour rolling average and 0.01 lb/MMBtu for FILTERABLE PM and PM_{10} on a 3-hour rolling average, respectively. This technology and emission limits are consistent with BACT selected in other similar projects on the RBLC database.

5.3.5 VOC BACT Analysis

WPEA has selected combustion controls as the BACT technology for controlling VOC emissions from the boiler. WPEA is proposing an emission limit of 0.003 lb/MMBtu on a 3-hour rolling average. This technology and emission limit is consistent with BACT selected in other similar projects on the RBLC database.

5.4 Distillate fuel-fired Diesel Emergency Engines (Generator and Fire Pump)

5.4.1 NO_x BACT Analysis

WPEA has selected combustion controls as the BACT technology for controlling NO_x emissions from both the generator and fire pump. WPEA is proposing an emission limit of 1.37 lb/MMBtu for the generator on a 3-hour rolling average and 0.94 lb/MMBtu for the fire pump on a 3-hour rolling average. This technology and emission limits are consistent with BACT selected in other similar projects on the RBLC database.

5.4.2 CO BACT Analysis

WPEA has selected combustion controls as the BACT technology for controlling CO emissions from both the generator and fire pump. WPEA is proposing an emission limit of 0.75 lb/MMBtu for the generator on a 3-hour rolling average and 0.82 lb/MMBtu for the fire pump on a 3-hour rolling average. This technology and emission limits are consistent with BACT selected in other similar projects on the RBLC database.

5.4.3 SO_2 and H_2SO_4 mist BACT Analysis

WPEA has selected firing ultra low sulfur distillate fuel (≤0.0015% by weight) as the BACT technology for controlling SO_2 and H_2SO_4 mist emissions from both the generator and fire pump. WPEA is proposing emission limits of 1.6×10^{-3} lb/MMBtu and 6×10^{-5} lb/MMBtu for both SO_2 and H_2SO_4 mist on a 3-hour rolling average, for the generator and the fire pump respectively. This technology and emission limits are consistent with BACT selected in other similar projects on the RBLC database.

5.4.4 PM/PM_{10} BACT Analysis

WPEA has selected combustion controls and proper maintenance as the BACT technology for controlling PM and PM_{10} emissions from both the generator and fire pump. WPEA is proposing an emission limit of 0.04 lb/MMBtu for the generator on a 3-hour rolling average and 0.05 lb/MMBtu for the fire pump on a 3-hour rolling average. This technology and emission limits are consistent with BACT selected in other similar projects on the RBLC database.

5.4.5 VOC BACT Analysis

WPEA has selected combustion controls as the BACT technology for controlling VOC emissions from both the generator and fire pump. WPEA is proposing an emission limit of 0.10 lb/MMBtu for the generator on a 3-hour rolling average and 0.35 lb/MMBtu for the fire pump on a 3-hour rolling average. This technology and emission limits are consistent with BACT selected in other similar projects on the RBLC database.

5.5 Ash, Lime and Carbon Storage: Non-Fugitive, Non-Combustion Systems

PM/PM_{10} BACT Analysis

WPEA has selected bin vent filters as the BACT technology for controlling PM and PM_{10} emissions from the ash, lime and carbon silos. WPEA is proposing an emission limit of 0.02 grain/dscf. This technology and emission limit is consistent with BACT selected in other projects.

5.6 Un-paved Roads

PM/PM_{10} BACT Analysis

WPEA has selected gravel and/or chemical suppressant as the BACT technology for controlling PM and PM_{10} emissions from the facility's unpaved roads. This technology is consistent with BACT selected in other projects.

5.7 Coal Handling Systems

PM/PM_{10} BACT Analysis

WPEA has selected fabric filtration as the BACT technology for controlling PM_{10} emissions from the transfer tower and tripper deck. WPEA is proposing an emission limit of 0.01 grain/dscf. This technology and emission limit is consistent with BACT selected in other projects on the RBLC database. Surface sealants (crusting agents) will be in use on the inactive coal piles to reduce fugitive emissions. Water sprays will be in use on the active and emergency coal piles to reduce fugitive emissions.

BACT Emission Limits/Technology Requirement Summary

System		NO_x	CO	SO_2	PM/PM_{10}	H_2SO_4	HF
PC Boilers (Combusting Coal)	Technology	SCR, LNB & OFA	Combustion Controls	Dry Spray Scrubber	Fabric Filter Dust Collection (FFDC)	Dry Spray Scrubber & FFDC	Dry Spray Scrubber & FFDC
	Limit	0.07 lb/MMBtu	0.15 lb/MMBtu	0.09 lb/MMBtu	0.015 lb/MMBtu	3.4×10^{-3} lb/MMBtu	9.7×10^{-4} lb/MMBtu
	Averaging Period	24-hour rolling	24-hour rolling	24-hour rolling	3-hour rolling	3-hour rolling	3-hour rolling
Distillate fuel-fired Auxiliary Boiler	Technology	LNB & FGR	Combustion Controls	Ultra Low Sulfur Distillate Fuel	Ultra Low Sulfur Distillate Fuel	Ultra Low Sulfur Distillate Fuel	–
	Limit	0.10 lb/MMBtu	0.04 lb/MMBtu	1.6×10^{-3} lb/MMBtu	0.05 lb/MMBtu	6.0×10^{-5} lb/MMBtu	–
	Averaging Period	3-hour rolling	3-hour rolling	3-hour rolling	3-hour rolling	3-hour rolling	–
Distillate fuel-fired Emergency Engines (Generator, Fire Pump)	Technology	Combustion Controls	Combustion Controls	Ultra Low Sulfur Distillate Fuel	Combustion Controls & Proper Maintenance	Ultra Low Sulfur Distillate Fuel	–
	Limit	1.37, 0.94 lb/MMBtu	0.75, 0.82 lb/MMBtu	1.6×10^{-3} lb/MMBtu (Both)	0.04, 0.05 lb/MMBtu	6.0×10^{-5} lb/MMBtu (Both)	–
	Averaging Period	3-hour rolling	3-hour rolling	3-hour rolling	3-hour rolling	3-hour rolling	–
Ash, Lime & Carbon Silos	Technology	Bin Vents	–	–	–	–	–
	Limit	0.02 gr/dscf	–	–	–	–	–
Coal Handling	Technology	Fabric Filtration	–	–	–	–	–
	Limit	0.01 gr/dscf	–	–	–	–	–
Haul Roads/ Surface Disturbance	Technology	Gravel & Surface Sealants	–	–	–	–	–

6.0 AMBIENT AIR QUALITY IMPACT

The facility was required to provide an environmental analysis as part of the Class I permitting process to demonstrate that emissions from the proposed source would not cause or contribute to air pollution in violation of any NAAQS or PSD Increment.

6.1 Dispersion Model

Air dispersion modeling was used to evaluate air quality impacts from the proposed facility. The dispersion model used for the analysis was the latest version of AERMOD (04300). EPA regulatory default options (direction-specific building downwash and actual receptor elevation) were used for all model runs. Modeling was also conducted in accordance with the applicable provisions of the NAC 445B.308-311.

6.2 Meteorological Data

WPEA has collected 1-year of on-site meteorological surface data, in accordance with the Bureau of Air Quality Planning requirements. The on-site data begins January 6, 2005 and ends January 5, 2006. The upper air data used in the air quality impact analysis was collected from 1-year of data collected from an on-site sonic detection and ranging (SODAR) system.

6.3 Receptor Grid

In order to thoroughly evaluate the air quality impacts surrounding the proposed plant site, a dense receptor grid based on rectangular UTM coordinates was used as follows:

- Fenceline Perimeter – 25-meter spacing,
- Near-field – 100-meter spacing,
- Intermediate-field – 500-meter spacing,
- Far-field – 1000 meter spacing

In addition, maximum impacts within intermediate and far-field grids were further refined with 100-meter fine grids to determine the maximum concentration and UTM location.

The Facility property boundary was used as the fence-line in the modeling. WPEA will install a continuous fence on the property boundary to prevent unauthorized access by the general public.

For the refined modeling study with other emission sources located nearby, the receptor grid was extended out 1-kilometer beyond the Significant Impact Area (SIA) for the pollutant undergoing evaluation.

6.0 AMBIENT AIR QUALITY IMPACT (Continued)

6.4 Modeling Methodology

In accordance with EPA's policy described in the New Source Review Workshop Manual, a two-step dispersion modeling procedure was used. The two steps are usually referred to as: (1) the preliminary analysis, and (2) the full, or cumulative, impact analysis.

6.4.1 Preliminary Analysis

In the preliminary analysis, the potential emissions from the proposed source are modeled without including emissions from other sources. If the preliminary analysis demonstrates that the source's emissions impacts are at, or below, a defined set of impact levels, referred to as the Significant Impact Levels (SIL), the source is not required to conduct a full impact analysis. The SIL's are shown in Table 6.1 below.

TABLE 6.1 – Significant Impact Levels (Class 2 areas) (UNITS OF $\mu g/m^3$)

POLLUTANT	ANNUAL	24-HOUR	8-HOUR	3-HOUR	1-HOUR
SO_2	1	5	-	25	-
TSP	1	5	-	-	-
PM_{10}	1	5	-	-	-
NO_2	1	-	-	-	-
CO	-	-	500	-	2,000
OZONE	-	-	-	-	(a)

NOTE: This Table DOES NOT APPLY to Class 1 Areas. If a Proposed Source is located within 10 km of a Class 1 Area, an impact of 1 $\mu g/m^3$ on a 24-hour basis for a pollutant is Significant. (However, the WPEA facility is not located within 10 km of a Class 1 area.)

(a) Any NET EMISSIONS INCREASE of 100 TPY of VOC subject to PSD would be required to perform a modeling analysis.

6.0 AMBIENT AIR QUALITY IMPACT (Continued)

6.4.2 Full Impact Analysis

If the preliminary analysis demonstrates that the source's impact on air quality exceeds the significant impact level for one or more pollutants, a full impact analysis is conducted for those pollutants. The full impact analysis is conducted for an area referred to as the impact area. The impact area is a circular area selected so as to encompass all locations where the air quality impact from the proposed source exceeds the significant impact level. The radius of the circular impact area is called the radius of impact.

The full impact analysis requires the modeling of the proposed source in conjunction with other sources of emissions. However, the other sources to be included in the model for the purpose of evaluating the proposed source's impact in relation to the NAAQS may differ from those sources to be included for the purpose of evaluating PSD increment consumption.

When performing a full impact analysis for the purpose of comparing the impact on air quality to the NAAQS, existing nearby sources that cause a significant concentration within the impact area are included. Nearby sources are defined as those that are located within the impact area or a circular area extending 50-kilometers beyond the impact area.

The modeling conducted for a full impact analysis for NAAQS evaluation also requires the inclusion of ambient air quality data. The requirement to collect ambient air quality data can be waived if the impacts from the proposed source are below significant monitoring concentrations, also referred to as "de minimus" monitoring levels. The significant monitoring levels are shown in Table 6.2 below.

TABLE 6.2 – Significant Monitoring Levels (UNITS OF $\mu g/m^3$)

POLLUTANT	IMPACT	AVERAGING TIME
CO	575.0	8-hour
NO_x	14.0	Annual
PM_{10}	10.0	24-hour
SO_2	13.0	24-hour
VOC (as ozone)	--	--
Pb	0.1	Quarterly
Fluoride	25.0	24-hour

6.0 AMBIENT AIR QUALITY IMPACT (Continued)

6.4.2 Full Impact Analysis (Continued)

In addition, under certain conditions, the ambient air quality data requirement can be satisfied by the use of existing air quality data for the proposed source location or a representative regional site. In these cases, the location, quality and date of the data is considered.

Pursuant to the BAPC monitoring guidelines, the requirements for ambient air quality data for this application will be satisfied by the use of existing air quality data for ozone, and waiving the requirement based upon modeled impacts for CO, Pb and Fluoride, and on-site monitoring for NO_x PM_{10} and SO_2. WPEA has collected 1-year of on-site ambient air quality data for NO_x PM_{10} and SO_2 which is used in the foregoing full impact analysis.

When performing a full impact analysis for the purpose of comparing the impact on air quality to the PSD increments, increment-consuming sources located within the impact area and a circular extending 50 kilometers beyond the impact area are included. Unlike the full impact analysis for NAAQS evaluation, ambient air quality data is not included in the full impact analysis for PSD increment consumption.

The full impact analysis indicated higher SO_2 emissions concentrations which cause was discovered to be from Nevada Slag, a nearby source previously permitted by the BAPC.

6.0 AMBIENT AIR QUALITY IMPACT (Continued)

6.5 Results of the Ambient Air Quality Impact Analysis

The first step in the air quality impact analysis was the completion of a preliminary analysis to determine if the emissions from the proposed facility would cause significant impacts to air quality with respect to any criteria pollutant.

The results of the preliminary modeling analysis indicate that the air quality impacts from the WPEA facility exceeded the Class 2 significant impact levels for NO_2, SO_2 and PM_{10}, therefore, a full impact analysis was subsequently performed for these pollutants. Table 6.3 below exhibits the results of the preliminary modeling analysis.

TABLE 6.3 – Results of the Preliminary Modeling Analysis

Pollutant	Averaging Period	Significant Impact Level (µg/m^3) (Class 2 areas)	Maximum Modeled Concentration (1-year of On-Site Met Data) (µg/m^3)
CO	8-hour	500.0	88.8
CO	1-hour	2,000.0	433
NO_2	Annual	1.0	1.4[1,4]
SO_2	Annual	1.0	2.0[1]
SO_2	24-hour	5.0	17.4
SO_2	3-hour	25.0	88.7
PM_{10}	Annual	1.0	7.4[1]
PM_{10}	24-hour	5.0	24.8[2]
Pb	Quarterly	N/A	0.0009[3]

LEGEND:

[1] Annual Impacts from 1-year of collected on-site data at the WPEA Facility

[2] High 2nd High Value

[3] Maximum Monthly Impact

[4] The Annual NO_2 impact was multiplied by the national default NO_x / NO_2 ratio of 0.75 (as recommended in 40 CFR, Appendix W)

6.0 AMBIENT AIR QUALITY IMPACT (Continued)

6.5 Results of the Ambient Air Quality Impact Analysis (Continued)

Since the predicted impact on air quality from the proposed WPEA facility exceeded the Significant Impact Levels (SILs) for NO_2, SO_2 and PM_{10}, a full impact analysis was conducted for these three pollutants. The full impact analysis is conducted for an area referred to as the impact area. Table 6.4 below summarizes the radius of impact (ROI) for the NO_x, SO_2 and PM_{10} modeling runs as determined from the preliminary analysis.

TABLE 6.4 – Radius of Impact for NO_x, SO_2 and PM_{10}

Pollutant	Averaging Period	Radius of Impact (ROI) (1-year of On-Site Met data) (km)
NO_2	Annual	4.7
SO_2	Annual	42.2
SO_2	24-hour	67.1
SO_2	3-hour	44.1
PM_{10}	Annual	12.1
PM_{10}	24-hour	12.1

The annual significant impact areas used to determine which Hydrographic Areas (HA's) are significantly impacted by the proposed facility were determined when the 1-year of on-site Met data was modeled. Only annual impacts are used to determine if the minor source baseline date for an area has been triggered. [1]

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[1] Per 40 CFR 52.21(15)(i), Baseline area means any intrastate area (and every part thereof) designated as attainment or unclassifiable under Section 107(d)(1)(D) or (E) of the Clean Air Act in which the major source or major modification establishing the minor source baseline date would construct or would have an air quality impact equal to or greater than 1 μg/m^3 (**annual average**) of the pollutant for which the minor source baseline date is established.

6.0 AMBIENT AIR QUALITY IMPACT (Continued)

6.5 Results of the Ambient Air Quality Impact Analysis (Continued)

The proposed WPEA facility will be located on the border of HA 179-northern and HA 179-middle. Because the minor source baseline date for these areas has already been triggered for SO_2 (11/28/1984, HA 179-northern: NOTE: HA 179 is split for SO_2 only. Any other pollutant affects the entire basin) and PM_{10} (6/4/1979, HA 179-northern, middle and southern), the facility will not change the designation for this area with regards to these pollutants.

The hydrographic areas (HA's) predicted to be significantly impacted by the proposed WPEA facility are depicted in the following table:

POLLUTANT	AVERAGING PERIOD	HA NUMBER	HA NAME
SO_2	Annual	179-northern	North Steptoe Valley
SO_2	Annual	179-central	Central Steptoe Valley
SO_2	24-hour	178B-southern	South Butte Valley
SO_2	24-hour	179-northern	North Steptoe Valley
SO_2	24-hour	179-central	Central Steptoe Valley
SO_2	24-hour	184	Spring Valley
SO_2	3-hour	178B-southern	South Butte Valley
SO_2	3-hour	179-northern	North Steptoe Valley
SO_2	3-hour	179-central	Central Steptoe Valley
SO_2	3-hour	184	Spring Valley
SO_2	3-hour	185	Tippett Valley
PM_{10}	Annual	179-northern	North Steptoe Valley
PM_{10}	Annual	179-central	Central Steptoe Valley
PM_{10}	24-hour	179-northern	North Steptoe Valley
PM_{10}	24-hour	179-central	Central Steptoe Valley
NO_2	Annual	179-northern	North Steptoe Valley
NO_2	Annual	179-central	Central Steptoe Valley
NO_2	Annual	179-southern	South Steptoe Valley

All averaging periods are shown, however, only the annual significant impacts are used to determine which of the HA's are significantly impacted by the proposed WPEA facility for minor source baseline date purposes.

In any other adjacent hydrographic basins, there were no annual air quality impacts exceeding 1.0 μ/m^3.

6.0 AMBIENT AIR QUALITY IMPACT (Continued)

6.5 Results of the Ambient Air Quality Impact Analysis (Continued)

Prior to the submittal and subsequent determination of completeness of this PSD application for WPEA, the minor source baseline date for NO_x had not yet been triggered for any of the three sections of HA 179. Therefore, the proposed WPEA facility, due to its construction location and predicted modeling impacts, will trigger the minor source baseline date for the following areas and pollutants:

- SO_2 – HA 179-middle (NOTE: HA 179 is split for SO_2 only. Any other pollutant affects the entire basin).
- NO_x – HA 179-northern, middle and southern
- PM_{10} – HA 179-northern, middle and southern (**PREVIOUSLY TRIGGERED**)

6.0 AMBIENT AIR QUALITY IMPACT (Continued)

6.6 Full Impact Analysis – NAAQS Evaluation

A full impact analysis was conducted for the purpose of comparing the impact on air quality from the proposed WPEA facility to the NAAQS. A source emissions inventory for the area out to 138 km of the proposed project was received from the states of Nevada and Utah.

As stated earlier, a full impact analysis requires the inclusion of ambient air quality data. Table 6.5 below presents the comparison of the proposed WPEA facility's modeled air quality impacts, as determined from the preliminary analysis, with the significant monitoring levels.

TABLE 6.5 – Comparison of modeled impacts to Significant Monitoring Levels

Pollutant	Averaging Time	Significant Monitoring Level ($\mu g/m^3$)	Maximum Modeled Concentration (1-year of On-Site Met data) ($\mu g/m^3$)
CO	8-hour	575	88.8
NO_2	Annual	14	1.4
PM_{10}	24-hour	10	24.8
SO_2	24-hour	13	17.4
Pb	Quarterly	0.1	0.0009[1]
Fluoride	24-hour	0.25	0.19

[1] Maximum Monthly Impact

6.0 AMBIENT AIR QUALITY IMPACT (Continued)

6.6 Full Impact Analysis – NAAQS Evaluation (Continued)

WPEA has collected one year of on-site ambient air quality data for NO_2, SO_2 and PM_{10}. The background concentrations obtained from the on-site ambient monitoring are listed in Table 6.6 below. These values are used, where appropriate, for the NAAQS modeling analysis.

TABLE 6.6 – Summary of Measured Ambient Background Concentrations

POLLUTANT	AVERAGING PERIOD	BACKGROUND CONCENTRATION ($\mu g/m^3$)
NO_2	ANNUAL	1.9
SO_2	ANNUAL 24-hour 3-hour	2.7 8.0 42.6
PM_{10}	ANNUAL 24-hour	10 30

6.0 AMBIENT AIR QUALITY IMPACT (Continued)

6.6 Full Impact Analysis – NAAQS Evaluation (Continued)

As part of the full impact analysis, the measured maximum background concentrations are added to the modeled predicted post-project concentrations to demonstrate compliance with the NAAQS. Other emissions sources, located within the radius of impact plus 50 kilometers, were included. As stated earlier, a source emissions inventory for the area surrounding the proposed WPEA site was received from the states of Nevada and Utah. A complete listing of the other emissions sources included in the modeling analysis is included in Attachment 3 of this technical support document. The results of the full impact analysis for NAAQS evaluation, from the proposed WPEA facility, are summarized in Table 6.7 below.

TABLE 6.7 – Summary of Full Impact Analysis for NAAQS Evaluation

Pollutant	Averaging Period	NAAQS Standard ($\mu g/m^3$)	Full Air Quality Predicted Impact (Modeled + Background) (1-year of On-site Met data) ($\mu g/m^3$)
NO_2	Annual	100	3.3[1]
SO_2	Annual	80	9.2
SO_2	24-hour	365	81.0
SO_2	3-hour	1,300	305
PM_{10}	Annual	50	17.5
PM_{10}	24-hour	150	55.3

[1] The Annual NO_2 impact was multiplied by the national default NO_x / NO_2 ratio of 0.75 (as recommended in 40 CFR, Appendix W)

6.0 AMBIENT AIR QUALITY IMPACT (Continued)

6.7 Ambient Impact Analysis – NAAQS Evaluation (VOC, CO & Pb)

Pursuant to NAC 445B.311(1)(g): “An environmental evaluation, with is required for a new source, must contain a careful and detailed assessment of the environmental aspects of the proposed stationary source and must also contain…”A dispersion analysis of each regulated pollutant.””

WPEA has performed an ambient air quality analysis for not only NO_2, SO_2 and PM_{10}, but also submitted modeling results for VOC (ozone) and Pb to compare with the NAAQS. For the criteria pollutant CO, the results of the preliminary analysis are not significant, therefore, per the NSR Manual, the WPEA facility would not cause or contribute to any violation of the NAAQS for this pollutant.
Table 6.8 below summarizes the results for the ambient analysis performed for these three additional criteria pollutants.

TABLE 6.8 – Summary of Impact Analysis for NAAQS Evaluation (CO, VOC & Pb)

Pollutant	Averaging Period	NAAQS Standard [(µg/m^3) for CO & Pb] (ppm for VOC)	Full Air Quality Predicted Impact (1-year of On-site Met data) (µg/m^3) & ppm
VOC (ozone)	1-hour	0.12 ppm	negligible
CO	1-hour (any elevation)	40,500	433.0
CO	8-hour (< 5,000 ft ASL)*	10,500	88.5
Pb	Quarterly	1.5	0.0009

6.0 AMBIENT AIR QUALITY IMPACT (Continued)

6.8 Full Impact Analysis – PSD Increment Consumption Evaluation

A second full impact analysis was conducted for the purpose of comparing the impact on air quality, from the proposed WPEA facility, to the PSD Increments. Other increment consuming sources were included in the analysis.

The results of the full impact analysis for PSD Increment Consumption evaluation are summarized in Table 6.9 below.

Pursuant to 40 CFR § 52.21(c): Ambient Air Increments – In areas designated as Class I, II or III, increases in pollutant concentration over the baseline concentration shall be limited to the following…"For any period, other than an annual period, the applicable maximum allowable increase may be exceeded during one such period per year at any one location." So, for averaging periods other than annual, the High, 2'nd-High modeling concentration results may be used for comparison to the Class II PSD Increment standards.

TABLE 6.9 – Summary of the Full Impact Analysis for PSD Increment Consumption

Pollutant	Averaging Period	PSD Increment Standard (Class II area) ($\mu g/m^3$)	Full Air Quality Impact (1-year of On-Site Met data) ($\mu g/m^3$)[1]
NO_2	Annual	25	1.4
SO_2	Annual	20	6.5
SO_2	24-hour	91	73
SO_2	3-hour	512	262
PM_{10}	Annual	17	7.5
PM_{10}	24-hour	30	25.3[2]

[1] Full Air Quality Impact concentration based on potential emissions from WPEA as well as potential emissions from other nearby sources.

[2] Pursuant to 40 CFR 52.21(c): **For any period <u>other than an annual</u> period, the applicable maximum allowable increase may be exceeded during one such period per year at any one location, (i.e., the highest, second-high value of PM_{10} is listed for comparison with the PM_{10} Increment Standard).**

6.9 Air Quality Analysis – Corroborating Assessment

In addition to the air quality analysis contained in Appendix 8 of the application, WPEA included an air quality analysis based on five years of surface meteorological data from the National Weather Service meteorological monitoring station located in Ely, Nevada and upper air in Elko, Nevada. (Note: EPA's 40 CFR Pt. 51, Appendix W modeling guidance specifies the use of five years of NWS meteorological data or one year of site-specific data. Because the primary modeling analysis required by NDEP was based on site-specific meteorological data, one year of data was required for that analysis.) This additional analysis, included in Appendix 14 of WPEA's air permit application, was not required by NDEP and does not displace the primary analysis based on onsite meteorological data. Nonetheless, it does provide a corroborating assessment of air quality impacts associated with the WPES. Like the primary air quality analysis, the air quality analysis contained in Appendix 14 shows compliance with all air quality standards and increments.

7.0 ADDITIONAL AIR QUALITY IMPACTS

The PSD regulations also require that an applicant provide an analysis of the impacts on the air quality related values (AQRV's) associated with the project. The AQRV's are the perceived environmental attributes of an area such as visibility, flora and fauna, and water and soils in both Class I and Class II areas. The additional impacts analysis attempts to determine the effects of pollution-caused changes to these values. In addition, the AQRV's for a Class I area are defined by the applicable Federal Land Manager (FLM, e.g., (USDA Forest Service and the National Park Service)) for that area and can vary between Class I areas. Each FLM is allowed to comment on what constitutes an adverse impact in a Class I area. If a FLM determines, based on any information available, that a new or modified source will adversely impact the AQRV's in a Class I area, after a case-by-case evaluation, the FLM may recommend that the reviewing agency deny issuance of the permit. In some cases this may result even if the modeling indicates that no applicable Class I increments will be exceeded.

WPEA provided a refined CALPUFF modeling for the assessment of all AQRV's at the Jarbidge Wilderness Area as well as Zion National Park, the only Class I areas within 300 kilometers of the proposed plant site. WPEA evaluated visibility, PSD increment, and acidic deposition. The basic procedures used in the WPEA Class I area AQ and AQRV impact assessment followed the guidance from the Federal Land Managers Workgroup (FLAG, 2000), Interagency Workgroup on Air Quality Modeling Phase II (IWAQM, 1998) and EPA's latest revised April 15, 2003 Air Quality Modeling Guidance (EPA, 2003a) with updates developed since their publishing.

BAPC performs an evaluation of the AQRV's to ensure that the PSD Class I increments are being met, and that there does not appear to be an issue with any other AQRV. BAPC has ensured that the FLM has received copies of the Operating Permit to Construct Application and any associated correspondence. The FLM will receive a copy of the Director's review, Draft Permit, and public notice. Prior to making its final permit determination, NDEP will consider any comments from the FLMs, along with information provided by WPEA. If the FLM stipulates any mitigation plans are required, the BAPC will address their concerns and add the plans to the DRAFT OPTC.

8.0 CONCLUSIONS / RECOMMENDATIONS

Based on the above review of the Operating Permit to Construct application and Best Available Control Technology analysis, White Pine Energy Associates' LLC., request for a Class I Operating Permit to Construct for the WPEA facility does not violate any applicable requirements. The Operating Permit to Construct Application was deemed complete, pursuant to NAC 445B.3364(2), when the preliminary determination to issue the Class I Operating Permit to Construct was made on December 28, 2006 (Attachment 3). As a result, I recommend that the conditions specified in the Draft Operating Permit to Construct be submitted to the public for review, in accordance with NAC 445B.3364(5).

Attachment (1) Facility and Vicinity Map
Attachment (2) BACT Analysis
Attachment (3) Preliminary Determination to Issue the Draft Permit / Application Completeness Letter
Attachment (4) Emission Calculations
Attachment (5) Nearby Source Inventory
Attachment (6) Draft Operating Permit to Construct

Rod A. Moore
Staff Engineer, Permitting Branch

Date

Matthew A. DeBurle
Supervisor, Permitting Branch

Date

Attachment 1

Facility (and Vicinity) Map

Attachment 2

BACT Analysis

Attachment 3

Preliminary Determination to Issue the Draft Permit / Application Completeness Letter

Attachment 4

Nearby Source Inventory

Attachment 5

Emission Calculations

Attachment 6

Draft Permit