TECHNICAL REVIEW DOCUMENT
for
OPERATING PERMIT 96OPMF155

to be issued to:

Tri-State Generation & Transmission Association
Craig Station
Moffat County
Source ID 0810018

Cathy Rhodes
May, 2002
Revised January, 2005

I. PURPOSE:

This document will establish the basis for decisions made regarding the applicable requirements, emissions factors, monitoring plan and compliance status of emission units covered by the operating permit proposed for this site. It is designed for reference during the review of the proposed permit by the EPA, the public, and other interested parties. This narrative is intended only as an adjunct for the reviewer and has no legal standing. The conclusions made in this report are based on information provided in the original application submittal of February 23, 1996 and the revised application submittal of January 4, 1999, and additional information received on October 21, 1999 and August 31, 2001.

Any revisions made to the underlying construction permits associated with this facility in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or an additional or revised Construction Permit.

II. SOURCE DESCRIPTION:

This facility is located in Craig, Moffat County, Colorado. The area is classified as an attainment area for all pollutants. Wyoming is an affected state within 50 miles of the facility. There are two Federal Class I areas within 100 kilometers of the facility: Mount Zirkel National Wilderness Area and Flattops National Wilderness Area. Dinosaur National Monument, although not a Class I area, is within 100 kilometers of the facility, and has been designated by the State to have the same sulfur dioxide increment as Federal Class I areas.

The entire plant is categorized as a major stationary source for the Prevention of Significant Deterioration (PSD) provisions. The EPA issued a PSD permit for Unit 3 on March 26,

1980. Future modifications at this facility resulting in a significant net emissions increase (see Colorado Regulation No. 3, Part A, Section I.B.37 and 58) for any pollutant listed in Colorado Regulation No. 3, Part A, Section I.B.58 or a modification which is major by itself may result in the application of the PSD review requirements.

The Craig Station consists of three coal fired steam driven electric generating units (Units 1, 2, and 3). Total net electric generating capacity is 1264 MW. Natural gas, propane and fuel oil are used as secondary fuels for flame stabilization, startup and shutdown. All three units are subject to the provisions of Title IV, the Acid Rain Program, of the Clean Air Act. Units 1 & 2 PM emissions were controlled by ESPs and wet limestone scrubbers control SO_2 emissions. Under a January 10, 2001 Consent Order, the ESPs have been replaced with baghouses and the wet scrubbers were upgraded. A baghouse controls PM emissions, and a spray dry scrubber controls SO_2 emissions from Unit 3. All three units have low-NO_x burners to control NO_x emissions. Overfire air and related NO_x control upgrades are now in place for Unit 1 and Unit 2. This permit currently only covers Units 1 and 2 and associated equipment. This permit does not currently cover Unit 3 or its associated equipment (except for coal handling, which may at times also serve Units 1 and 2). Associated activities covered by the permit include two cooling towers, coal handling systems, ash handling systems, limestone handling system, and the staging/landfilling area, as well as numerous insignificant activities.

Unit 3 is currently operating under the provisions of an EPA-issued PSD permit (issued on March 26, 1980, revised January 12, 1981, and August 14, 1992) and State-issued Construction permits 12MF322(1-4) and 98MF0141. The draft version of this permit that went to Public Comment on May 17, 2001 as well as the Proposed version of the permit that went to EPA on September 13, 2004 covered all three boilers. Prior to the Public Comment period, EPA, the Division, and Tri-State had discussions regarding the interpretation of several conditions of the EPA PSD permit. Following Public Comment, discussions continued on two issues: Range Z and the applicability of the BACT limits during periods of startup, shutdown, and malfunction (s/s/m). The root of the issues lies with imprecise and confusing language that was put into the PSD permit when it was issued some 25 years ago. Some of the issues were not resolved, and EPA sent a formal objection letter to the Division on October 22, 2004, citing the remaining unresolved issues. Under the provisions of Regulation No. 3, Part C, § VI.H, the Division has 90 days in which to submit a revised permit to EPA after a formal objection letter is received. During the 90 day period, Tri-State indicated that they were planning on submitting an application to the Division for a major PSD modification to Unit 3 sometime in April 2005. State statutes and Federal regulations provide for the Air Pollution Control Division ("APCD") to issue PSD permits for major modifications made after September 2, 1986. Section 25-7-210 C.R.S. states:

> Sections 25-7-201 and 25-7-203 to 25-7-206 shall apply only to applications for proposed new major stationary sources and major modifications which are submitted on or after the date of approval by the United States

environmental protection agency of the program for prevention of significant deterioration embodied in the state implementation plan.

Thus the March application will result in a new PSD Construction permit for Unit 3 and associated activities. The new permit will replace the existing PSD permit, and will address the provisions upon which the EPA's objection was based.

Since a new PSD permit will be issued in the near future, the Division and the EPA have agreed that the Division will at this time issue a revised Operating Permit which contains only the requirements for Units 1 and 2. The Unit 3 requirements will be added to this operating permit once the new PSD permit is issued. The EPA and the Division believe that this is the best and most expedient method to resolve the existing PSD permit concerns and the EPA objections regarding the initially proposed operating permit. The new PSD permit will be issued using the appropriate procedures in Regulation No. 3, including public notice and participation requirements. Under Regulation No. 3, Part C provisions, the applicant must apply for a modification to incorporate the new PSD permit requirements into their operating permit within twelve months of startup of the modified Unit 3. The revised Operating Permit will be issued using the Significant Modification procedures of Regulation No. 3, Part C, including public notice and participation requirements and EPA review.

The following Potential-to-Emit and actual 1997 emissions data are based on information supplied in the Title V application (rounded figures – includes all three units and all associated activities).

	POTENTIAL TO EMIT, TONS PER YEAR					
	PM	PM_{10}	SO_2	NO_X	VOC	CO
B001 - Unit 1	1891	435	22695	13239	60	498
B002 - Unit 2	1891	435	22695	13239	60	498
B003 - Unit 3	566	130	3770	9426	58	484
P101 - Coal Handling Units 1 & 2	41	18				
P102 - Coal Handling Unit 3	2	1				
P201 - Limestone Handling Units 1 & 2	14	3				
P202 - Lime Handling Unit 3	23	6				

P203 - Ash Handling Units 1 & 2	neg	Neg				
P204 - Ash Handling and Ash Haul Roads Unit 3	115	30				
P205 – Landfill	4	1				
P401 - Unit 1 CT	14	14			5	
P402 - Unit 2 CT	14	14			5	
P403 - Unit 3 CT	14	14			5	
Total	4588	1101	49160	35904	194	1479
FACILITY 1997 ACTUAL EMISSIONS TPY	772	250	10094	15750	133	1110

CT = Cooling Tower

III. EMISSION SOURCES

The following sources are specifically regulated under terms and conditions of the Operating Permit for this site:

B001 - Unit #1 - Babcock & Wilcox Boiler
B002 – Unit #2- Babcock & Wilcox Boiler

Applicable Requirements - Final Approval Construction Permit 10MF579 was issued for Units 1 and 2. Applicable requirements are as follows.

Construction Permit 10MF579

- This source is subject to the requirements of the New Source Performance Standards for Fossil Fuel Fired Steam Generators, as in effect May 1, 1973.

  Construction Permit 10MF579 indicates that the Units are subject to the NSPS as it existed on May 1, 1973. This is because the units were permitted when Subpart D was in the proposal process, and had not been finalized by the EPA. Subsequently, the EPA finalized the rule, and it applies to all sources constructed, reconstructed, or modified after August 17, 1971. The rule does not provide for any exceptions for sources constructed prior to final promulgation, therefore, Units 1

and 2 are subject to the most current version of Subpart D. This revision to the Construction Permit is incorporated directly into this operating permit through a combined Construction Permit/Operating Permit procedure. Note: The EPA did not promulgate startup, shutdown, and malfunction provisions until October 15, 1973.

- Emissions of sulfur dioxide shall not exceed 1.2 pounds per million Btu heat input, maximum 3 hour average.

- Visible emissions shall not exceed 20 percent opacity.

- Emissions of particulate matter shall not exceed 0.1 pounds per million Btu heat input, maximum 2 hour average. *On June 14, 1974, the EPA revised Subpart D to change the sampling time requirements for PM from a minimum of 2 hours to a minimum of 60 minutes per run, to make the provision consistent with 60.8(f). The sampling interval specified in 60.46 was shortened to be consistent with the 60-minute-per-run requirement. The preamble to this revision states that these actions are intended for clarification and for maintaining consistency throughout the regulations. They are not intended to alter the substantive content of the regulations. Thus, the 2 hour averaging time no longer applies to Units 1 and 2.*

- Emissions of nitrogen oxides shall not exceed 0.7 pounds per million Btu heat input, maximum 3 hour average.

- This source shall comply with all applicable monitoring, notification, and record keeping requirements of the New Source Performance Standards (Regulation 6) and Regulation 1. IV.

- This source is subject to the requirements of Regulation 6. Section I., including Section I.4 which states: At all times, including periods of start-up, shutdown, and malfunction, the facility and control equipment shall, to the extent practicable, be maintained and operated in a manner consistent with good air pollution control practices for minimizing emissions. Determination of whether or not acceptable operating and maintenance procedures are being used will be based on information available to the Division, which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

- A Revised Air Pollutant Emission Notice shall be filed when a significant change in emissions occurs, as required by Regulation No.3.II.B.

Colorado Regulation No. 1

- Except as provided in Section II.A.4, opacity shall not exceed 20% (Section II.A.1)
- Opacity shall not exceed 30%, for a period or periods aggregating more than six (6) minutes in any sixty (60) minute period, during fire building, cleaning of fire boxes, soot blowing, start-up, process modifications, or adjustment or cleaning of control equipment (Section II.A.4)
- Particulate emissions shall not exceed 0.1 lbs/mmBtu heat input (Section III. A.1.c)
- Continuous emission monitoring (Section IV)
- Continuous Opacity Monitor (COM) requirements (Section IV.B.1)
- Continuous Emission Monitor (CEM) for SO_2 or fuel sampling (Section IV.B.2)
- If CEM for SO_2 then CEM for either O_2 or CO_2 (Section IV.B.3)
- Calibration of CEMs (Section IV.F)
- Notification and Recordkeeping (Section IV.G)
- Recordkeeping duration (Section IV.H)
- Reporting requirements - if fuel sampling (Section IV.I)
- Sulfur dioxide emissions shall not exceed 1.2 lbs/mmBtu heat input (Section VI.A.3.a.(ii)), based on a 3 hour rolling average

Colorado Regulation No. 8, Part C

- Lead (Pb) emissions shall not be such that emissions result in an ambient lead concentration exceeding 1.5 μg/scm averaged over a one-month period (Reg 8, Part C) - This is a **State-only** requirement

NSPS Subpart D Requirements (40 CFR, Part 60, Subpart D as adopted by reference in Colorado Regulation No. 6, Part A)

- Emissions of Particulate Matter shall not exceed 0.1 lbs/mmBtu heat input
- Opacity shall not exceed 20%, except for one six-minute period of not more than 27% - does not apply during start-up, shutdown and malfunction
- SO_2 emissions shall not exceed 1.2 lbs/mmBtu heat input when burning coal, 3 hour average
- NO_X emissions shall not exceed 0.70 lbs/mmBtu heat input when burning coal, 3 hour average

- Source shall install, calibrate, maintain and operate continuous monitoring systems for measuring opacity, SO_2 and NO_X emissions and either O_2 or CO_2

PM, SO_2, and NO_x emission limits do not apply during startup, shutdown, or malfunction. (See October 15, 1973 Federal Register)

Acid Rain (Title IV) Requirements

- The Code of Federal Regulations lists 8153 (Unit 1) and 7785 (Unit 2) SO_2 allowances (as listed in 40 CFR 73.10(b)) for these sources. Note that additional allowances can be obtained as needed per 40 CFR Part 75. The units will be allocated 8153 and 7785 allowances per year from 2000 to 2009 (as listed in the EPA's "Allowances Held Report," January 4, 1999).
- NO_x emissions of 0.50 lbs/mmBtu heat input, on an annual average basis (source opted to comply with Phase I limits (§76.5(a)(2) by early election (§ 76.8), which went into effect January 1, 1997).
- Acid rain permitting requirements per 40 CFR Part 72.
- Continuous emission monitoring requirements per 40 CFR Part 75.
- The source is also subject to the sulfur dioxide allowance system (40 CFR Part 73) and excess emissions (40 CFR Part 77).

January 10, 2001 Consent Decree Requirements

- Requires replacement of ESPs at Units 1 and 2 with baghouses, FGD upgrades, and installation of NO_x emission control upgrades by certain dates
- PM emissions from Units 1 and 2 shall not exceed 0.03 lb/mmBtu heat input by certain dates
- SO_2 emissions from Units 1 and 2 shall not exceed 0.160 lb/mmBtu heat input, on a 30 day rolling average and 0.130 lb/mmBtu heat input on a 90 day rolling average, by certain dates
- SO_2 emissions from Units 1 and 2 shall be controlled by either 86% on a 30 day rolling average, or 90% on a 90 day rolling average, by certain dates, unless a "showing" is made
- NO_x emissions from Units 1 and 2 shall not exceed 0.30 lb/mmBtu heat input on an annual average basis, by certain dates
- Limits opacity as follows: (1) 20% averaged over each separate 6-minute period at all times when air pollutants are being discharged into the atmosphere, but does not apply when the boiler and all fans that move flue gas in the unit are off. Under this limit, during periods of a new fire, cleaning of fire boxes, startup, soot blowing, any process modification or adjustment or occasional cleaning of control equipment, opacity shall not exceed 30% for more than 6 minutes in any 60 consecutive minutes; (2) 30% for more than 6 minutes during any 60 consecutive minutes during any startup; (3) 20% during any

shutdown, unless excused by an upset condition; (4) 20% except for one six minute period per hour of not more than 27% opacity as averaged over each separate 6-minute period with an hour, beginning each hour on the hour. Emissions during startup, shutdown and malfunction are excused under this opacity limit.

- Requires stack testing for PM
- Requires installation and operation of continuous opacity monitors and continuous monitors for SO_2 emissions, NO_x emissions, CO_2, and flow
- Requires permittee to operate Units 1 and 2 using good operating practices

Note: Since this permit went to public notice, the milestones for various Consent Decree requirements have passed. The permit is therefore revised to delete those due dates and obsolete requirements related to the ESPs.

Consent Decree Requirements as a Pollution Control Project

Typically, the Division does not consider the addition of a control device to be a modification for purposes of permitting. The installation of the baghouses and the FGD upgrades do not result in an increase in emissions. The NO_X emission control upgrades may decrease NO_X emissions substantially but increase CO emissions slightly. In the case of Craig Units 1 and 2, the addition of control equipment is required by the consent decree and qualifies as an environmentally beneficial pollution control project. No additional permitting or testing requirements were included in the consent decree for the potential increase in CO emissions from the low NOx emission control upgrades. Therefore, the Division does not believe it is appropriate to include any other permitting requirements or emission limitations for a possible increase of CO emissions due to the NO_X emission control upgrades.

Effect of Incorporation of Consent Decree into the Operating Permit

The Consent Decree requirements were approved by the EPA as part of the Colorado State implementation Plan and are applicable requirements which must be included in the operating permit. Under terms of the Consent Decree, upon issuance of this operating permit, the Division assumes certain compliance/enforcement provisions of the Decree. As for any applicable requirement incorporated into an operating permit, nothing in the permit is intended to have the effect of relaxing any requirement in the Consent Decree or to change or modify any rights of the parties to that decree.

Voluntary Emission Reduction Agreement (VERA)

In 2001, a VERA was completed for Units 1 and 2, to reduce emissions which affect visibility and air quality related values. VERA's normally include specific emission limits and related requirements, and are included as applicable requirements in operating permits. In this case, the VERA states that the Division finds and determines that the provisions of the Consent Decree meet the requirements for a VERA for Units 1 and 2. Therfore, this VERA

is not incorporated into the operating permit, since the Consent Decree requirements are incorporated.

Emission Factors - The combustion of coal in the boilers results in emissions of NO_x, SO_2, PM, PM_{10}, CO, VOC, and Pb. CEMs are used to determine compliance with emission standards and to estimate annual emissions of NO_x, and SO_2. For PM and PM_{10}, stack test results and monitored heat content of the fuel are used to determine compliance and estimate annual emissions. Standard factors from the AP-42 manual, or other emission factors/procedures acceptable to the Division (see Regulation No. 3, Part A, II.B.1 for acceptable alternative methods) along with appropriate removal efficiencies for control equipment, are used to estimate CO, VOC, HAP and Pb emissions.

Monitoring Plan - CEMs are used to demonstrate compliance with the NO_x and SO_2 lb/mmBtu limits. Stack testing and a baghouse and wet scrubber maintenance plan are used to demonstrate compliance with the PM limits. The required frequency for PM stack testing will be reduced, if the source meets criteria based on the test results in relation to the emission standard, as set forth in the permit. The heat content of the fuel is needed for these determinations. The heat input can be calculated from the carbon dioxide CEM required under the Acid Rain Program, or measured through a coal sampling plan, or vendor information.

Compliance with opacity limits is demonstrated using a COM.

Scales are used to measure the amount of coal combusted in the boiler. These data are used to estimate PM, PM_{10}, CO, VOC, and HAP emissions.

The permittee performed a one-time modeling exercise which demonstrated compliance with the Regulation No. 8 lead requirements.

Compliance Status - The Division accepts these Units were in compliance at the time the Title V application was submitted. In addition, the most recent inspection report indicates the Units were in compliance at the time of inspection.

B001 - Unit #1 - Babcock & Wilcox Boiler - Natural Gas, Propane, and Fuel Oil
B002 - Unit #2 - Babcock & Wilcox Boiler - Natural Gas, Propane, and Fuel Oil

Coal is the primary fuel for these boilers. Secondary fuels (natural gas, propane, or fuel oil) are used during non-routine periods such as startup and shutdown, adding to or removing coal pulverizers from service, or other flame stability efforts.

Applicable Requirements - The Construction Permit did not address secondary fuels. The NSPS, Subpart D sets forth emission limits when fuels are combined for combustion. The

permittee submitted information which indicates that, for the past five years, “alternative” fuel use has comprised less than 1% of total heat input. By calculation, the Subpart D emission limits for this amount of natural gas, propane or fuel oil remain essentially unchanged from the coal emission limit. The Division therefore assumes the source is in compliance with Subpart D emission limits whenever alternate fuel use comprises less than 5% of total heat input. If alternate fuel use comprises more than 5% of total heat input on an annual basis, the permit must be reopened to include Subpart D requirements for combined fuel combustion. In addition, this source is subject to Regulation No. 1 emission limits, which are equal to or less stringent than Subpart D provisions. The Division therefore also assumes the source is in compliance with Regulation No. 1 requirements whenever alternate fuel use comprises less than 1% of total heat input.

Alternate Operating Scenarios

The permittee requested the ability to dispose of spent boiler tube cleaning waste as an alternate operating scenario. Circulation of water through the boiler tubes results in an accumulation of mineral deposits over time. The mineral deposition decreases the efficiency of the heat transfer from the boiler tube to the circulating water. Periodically, the tubes are cleaned to recover the heat transfer efficiency. The cleaning is accomplished by circulating cleaning solutions, generally acid and detergent mixtures, through the tubing. Commonly, the accumulated spent materials are slowly injected into an operating boiler for disposal. The permittee had previously requested to dispose of cleaning waste in the boiler, in March of 1993. At that time the Division agreed to the proposal, and determined a modification to the Construction Permit was not necessary. The permittee provided information regarding studies performed by the Electric Power Research Institute which indicates that disposal of cleaning wastes does not have a significant effect on operations or emissions. This has been an on-going practice for boilers operated by utilities, and has not been cited by the Division as a compliance issue.

In addition, the permittee indicates that on a sporadic basis, they wish to combust non-hazardous petroleum contaminated soils and materials in the boiler. These materials are generated on occasions at the Craig Station when accidental spills of petroleum liquids (lube oils and fuel) occur. Because of the expected small quantity of non-hazardous petroleum contaminated soils and materials generated, it is expected that introduction of such materials into the boiler for combustion will not cause the exceedance of any applicable emission limit or emission of pollutants not generated by routine operation of these boilers.

Provisions for these two alternate operating scenarios are provided for in the Operating Permit.

P101 – Coal Handling – Units 1 & 2

The Unit 1 and 2 coal handling system transfers coal delivered by trucks on unpaved haul roads to Craig Station to the Unit 1, 2, and 3 coal storage piles and silos. On occasion, coal is deposited in a coal surge pile prior to being transferred to the crusher. The coal is

crushed and conveyed to the coal transfer building, where it is sent either to the stockpiles or coal silos. Coal destined for the storage pile is conveyed to the stackout tower and then to telescoping chutes for loadout to the storage pile. Coal is reclaimed underground from storage and is transferred to generation building coal silos. Bagfilters and enclosed conveyors control PM emissions from all sources except coal delivery unloading, the coal pile stackout and the storage piles. Telescopic chutes are used to control PM emissions from the coal pile stackout. Coal unloading and stackout is controlled with water spray containing a surfactant, on an as-needed basis. Note that water sprays may not be operable during cold weather. The coal haul road is treated with a resinous adhesive, or equivalent, as often as necessary.

Applicable Requirements - Final Construction Permit 11MF276 was issued for these activities. Applicable requirements are as follows.

Construction Permit 11MF276

- Limits process throughput to 3,900,000 tons per year
- Limits opacity to 20%
- Sets forth measures for minimizing fugitive particulate matter emissions

  Requested revisions:

  "The coal being loaded to live storage will be sprayed with water with a surfactant added," is revised to read: "The coal being loaded to live storage will be sprayed with water with a surfactant added, on an as-needed basis." This is consistent with other Tri-State construction permits.

  "The haul road used by coal trucks on the Craig Station property shall be treated with a resinous adhesive (or equivalent) to control dust. The treatment material shall be bladed into the soil according to the manufacturer's specification and shall be reapplied as often as necessary to remain viable as a control measure." Is revised to read: "The haul road used by coal trucks on the Craig Station property shall be treated with magnesium chloride (or equivalent) to control dust. The treatment material shall be applied according to the manufacturer's specification and shall be reapplied as often as necessary to remain viable as a control measure."

  The requirement for water spray bars at the unloading station is revised to indicate that the spray bars will be used *as needed*.

Regulation No.1.II.A.1 & 4

- Limits opacity to 20%, except as provided for below
- New fire, cleaning of fire boxes, soot blowing, start-up, any process modification, or adjustment or occasional cleaning of control equipment - not to exceed 30% for a period or periods aggregating more than six (6) minutes in any sixty (60) consecutive minutes

(Note: These limits do not apply to fugitive particulate emissions (Colorado Regulation No. 1, II.8(iii)) - Colorado Regulation No. 3 defines "fugitive emissions" as "those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening." The Division has determined that the emissions from the coal pile stackout telescopic chute are fugitive.) Other fugitive sources include the storage piles, unloading to the grizzly, unloading to the coal surge pile, and the haul road.

40 CFR Part 60 Subpart Y, NSPS for Coal Preparation Plants

- Opacity not to meet or exceed 20% for all sources except the storage piles, unloading to coal surge pile, coal pile stackout and coal stackout building, coal reclaim A & B, coal tripper deck and silos, common coal drive house, and haul roads - Not applicable during startup, shutdown, or malfunction

Emission Factors - AP-42 factors and equations, or other emission factors/procedures acceptable to the Division, and appropriate control measure/equipment control efficiencies are used to estimate PM and PM_{10} emissions.

Monitoring Plan - As-fired and as-received belt scales continuously weigh the coal as it moves from the truck unloading hoppers to the units or stockpile, and from the stockpile to the coal silos. These monitoring records can be used to identify compliance with the coal handling limits. The emissions are calculated based on the amount of coal being processed.

For those sources subject to an opacity standard, a U.S. EPA Reference Method 9 opacity observation is performed by a certified observer at least semi-annually. An operation and maintenance plan shall be implemented for the baghouses.

A quarterly inspection is performed to ensure PM Emission Control Plan measures are in place.

Compliance Status - The Division accepts this process was in compliance at the time the Title V application was submitted.

P102 – Coal Handling – Unit 3

The Unit 3 coal handling system transfers coal delivered by rail car to the Unit 1,2, and 3 coal piles and silos. Coal drops from the railcars into underground hoppers and is conveyed to the crusher building. After crushing, coal is conveyed to the stackout building, where it is either sent to the stockpile or to the transfer building. Coal in the transfer building is conveyed to the coal silos in the generation building. Bagfilters control PM emissions from all sources except coal delivery unloading, the coal pile stackout and the storage piles.

Telescopic chutes are used to control PM emissions from the coal pile stackout. Water is sprayed at the coal train unloading to control PM emissions. Note that water sprays may not be operable during cold weather. Water, compaction or chemicals are used, as necessary, to control PM emissions at the coal storage piles. Since the Unit 3 system handles coal which may be delivered to Units 1 and 2, the system is included in the Operating Permit at this time.

Applicable Requirements - Final Construction Permit 12MF322(2) was issued for these sources. Applicable requirements are as follows.

Construction Permit 12MF322(2)

- Limits opacity to 20%
- Sets forth measures for minimizing fugitive PM emissions
- Requires emissions from crushing, transferring, and coal reclaiming to be controlled by fabric filter baghouses

Colorado Regulation No.1.II.A.1&4

- Limits opacity to 20%, except as provided for below
- New fire, cleaning of fire boxes, soot blowing, start-up, any process modification, or adjustment or occasional cleaning of control equipment - not to exceed 30% for a period or periods aggregating more than six (6) minutes in any sixty (60) consecutive minutes *(Note: These limits do not apply to fugitive particulate emissions (Colorado Regulation No. 1, II.8(iii)) - Colorado Regulation No. 3 defines "fugitive emissions" as "those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening." Fugitive sources include coal train unloading, coal stackout, and storage piles.)*

40 CFR Part 60 Subpart Y, NSPS for Coal Preparation Plants

- Opacity not to meet or exceed 20% - Not applicable during startup, shutdown, or malfunction - Does not apply to coal stackout, common coal transfer building extension, common coal drive house, coal tripper deck and silos, to the storage pile, or to the open coal storage pile

Other

The Construction Permit does not contain a specific processing limit, however, records of the amount of coal processed are necessary for estimating emissions.

Emission Factors - AP-42 factors and equations, or other emission factors/procedures acceptable to the Division, and appropriate control measure/equipment control efficiencies are used to estimate PM and PM_{10} emissions.

Monitoring Plan - As-fired and as-received belt scales continuously weigh the coal as it moves from the rail cars unloading hoppers to the Units or stockpile, and from the stockpile to the coal silos. The emissions are calculated based on the amount of coal being processed. A U.S. EPA Reference Method 9 opacity observation is performed by a certified observer every six months and a baghouse operating and maintenance plan is required.

A quarterly inspection is performed to ensure PM Emission Control Plan measures are in place.

Compliance Status - The Division accepts the process was in compliance at the time the Title V application was submitted.

P201 – Limestone Handling and Storage Facility – Units 1 & 2

The Unit 1 & 2 limestone handling system provides for receiving, transferring, storage, and preparation of limestone before it is introduced to the Units 1 & 2 wet limestone scrubbers. Limestone is delivered by trucks, and unloaded to a receiving hopper. Limestone is then transferred to the silos. Bagfilters are used to control PM emissions at the silo and unloading.

Applicable Requirements - Final Construction Permit 11MF415 was issued for these activities. Applicable requirements are as follows.

Construction Permit 11MF415

- Limits opacity to 20%
- Requires unloading facilities emissions to be controlled by baghouse

Construction Permit requirement is revised from: "All process equipment shall be maintained and operated so that there is no leakage of air contaminants to the atmosphere prior to their treatment in the pollution control system." To: "All process equipment shall be maintained and operated so as to minimize leakage of air contaminents to the atmosphere prior to their treatment in the pollution control system."

Colorado Regulation No. 1, II.A.1 & 4

- Limits opacity to 20%, except as provided for below
- New fire, cleaning of fire boxes, soot blowing, start-up, any process modification, or adjustment or occasional cleaning of control equipment - not to exceed 30% for a period or periods aggregating more than six (6) minutes in any sixty (60) consecutive minutes
  Does not apply to fugitive emission sources: limestone hauling.

Other

The Construction Permit does not specifically limit the amount of limestone delivered, however, the amount is needed to calculate emissions estimates

Emission Factors - AP-42 factors and equations, or other emission factors/procedures acceptable to the Division, and appropriate control measure/equipment control efficiencies are used to estimate PM and PM_{10} emissions

Monitoring Plan -Semi-annual U.S. EPA Reference Method 9 opacity observations will be performed on the baghouses and a baghouse operation and maintenance plan is required.

Compliance Status - The Division accepts the units were in compliance at the time the Title V application was submitted.

P203 – Ash Handling System – Units 1 & 2

The Unit 1 and 2 ash handling and processing system provides for transferring ash from the boilers and ESPs to ash silos for temporary storage before it is transported for off-site disposal or commercial sale. The Unit 1 and 2 boilers generate both bottom ash and fly ash. The bottom ash handling system transfers all materials using water, thus there are no particulate emission sources associated with bottom ash handling. Fly ash is pneumatically transported to the silos. Bagfilters are used to control PM emissions for the silos and the dry ash unloading for commercial sale. Water and dustless unloaders are used to control PM for truck loading operations for ash disposal.

Applicable Requirements - Final Construction Permit 11MF332 was issued for these activities. Applicable requirements are as follows.

Construction Permit 11MF332

- Limits opacity to 20%
- Requires bagfilter control of ash silos
- Sets forth measures for minimizing fugitive dust emissions

Construction Permit requirement is revised from: “All process equipment shall be maintained and operated so that there is no leakage of air contaminants to the atmosphere prior to their treatment in the pollution control system.” To: “All process equipment shall be maintained and operated so as to minimize leakage of air contaminents to the atmosphere prior to their treatment in the pollution control system.”

Colorado Regulation No. 1, II.A.1&4

- Limits opacity to 20%, except as provided for below
- New fire, cleaning of fire boxes, soot blowing, start-up, any process modification, or adjustment or occasional cleaning of control

equipment - not to exceed 30% for a period or periods aggregating more than six (6) minutes in any sixty (60) consecutive minutes
Does not apply to fugitive emission sources: truck loading for disposal

Other

The Construction Permit does not specifically limit the amount of ash processed, however, the amount is needed to calculate emissions estimates.

Emission Factors - Standard AP-42 factors and equations, or other emission factors/procedures acceptable to the Division, and appropriate control measure/equipment control efficiencies are used to estimate PM and PM_{10} emissions.

Monitoring Plan - For those sources subject to an opacity standard, semi-annual U.S. EPA Reference Method 9 opacity observations will be performed and a baghouse operation and maintenance plan is required. The dry ash unloader on silo A dischargers directly into silo A. Therefore, there is not a separate source of emissions. The dry ash unloading on silo B discharges to a bagfilter which discharges inside the silo B building adjacent to a piperack, therefore, a Method 9 reading is not required, and absent credible evidence to the contrary, the Division assumes the opacity standard is being met. The word “credible” as it is used in the term “credible evidence” shall be applied under the provisions of the permit as defined by Colorado and Federal Rules of Evidence. Quarterly inspections will be performed to ensure the bagfilters and PM emission minimization measures are in place.

Compliance Status - The Division accepts the process was in compliance at the time the Title V application was submitted.

P204 – Ash Handling System and Ash Haul Road Ash Haul Road for Units 1, 2 and 3 (Ash and Scrubber Sludge Hauling)

The Unit 3 ash handling and processing system provides for transferring of ash from the Unit 3 boiler, baghouse hoppers, and ash collection locations in the scrubber building to an ash silo or the recycle ash tank for temporary storage before it is transported offsite for disposal or commercial sale. The boiler generates both bottom ash and fly ash. The bottom ash handling system transfers all materials using water, thus there are no particulate emission sources associated with bottom ash handling. Flyash is pneumatically conveyed to the silo. Baghouses control PM emissions for the silo, day tank and dry ash unloading for commercial sale. Water and dustless unloaders control PM for the ash unloading operations for disposal. Magnesium chloride is applied to the unpaved portion of the ash haul road, as necessary, to control PM emissions.

Applicable Requirements - Final Construction Permit 12MF322(3) was issued for these activities. Applicable requirements are as follows.

Construction Permit 12MF322(3)

- Limits opacity to 20%

- Sets forth measures for minimizing fugitive dust emissions
  (*Note: Construction Permit Condition 3. States "Ash deposited in trucks for transport to disposal areas shall be sufficiently wet to maintain a moisture content greater than 12% and/or a control of visible emissions equal to that of an enclosed cargo box originally permitted." The Division believes requiring a specific moisture content is not practical. In addition, it is not practical to attempt to compare current visible emissions to the now removed cargo box. This condition is therefore revised as follows: "Ash deposited in trucks for transport to disposal areas shall be sufficiently moist to minimize fugitive emissions." This is consistent with minimization measures set forth in the Construction Permit 11MF332 for Units 1 & 2 ash handling.*

PSD Permit

- Requires magnesium chloride to be used on the ash haul road according to manufacturer's specifications

Colorado Regulation No. 1, II.A.1 & 4

- Limits opacity to 20%, except as provided for below
- New fire, cleaning of fire boxes, soot blowing, start-up, any process modification, or adjustment or occasional cleaning of control equipment - not to exceed 30% for a period or periods aggregating more than six (6) minutes in any sixty (60) consecutive minutes
  Not applicable to fugitive emission sources: truck loading for disposal and haul roads.

Other

The Construction Permit does not specifically limit the amount of ash processed, however, the amount is needed to calculate emissions estimates.

Emission Factors - Standard AP-42 factors and equations, or other emission factors/procedures acceptable to the Division, and appropriate control measure/equipment control efficiencies are used to estimate PM and PM_{10} emissions

Monitoring Plan - For those sources subject to an opacity standard, semi-annual U.S. EPA Reference Method 9 opacity observations will be performed and a baghouse operation and maintenance plan is required. The dry ash unloading baghouse is located inside a building, therefore a Method 9 reading is not required, and absent credible evidence to the contrary, the Division assumes the opacity standard is being met. A quarterly inspection will be performed to ensure the bagfilters and PM emission minimization measures are in place.

Compliance Status - The Division accepts the process was in compliance at the time the Title V application was submitted.

P205 – Staging/Landfilling

Wet and dry waste products are hauled to the staging/landfilling area, where they are unloaded. The staged wastes are then subsequently loaded in a truck for final disposal at Trapper Mine. The staging/landfilling activities are considered to have negligible emissions.

Applicable Requirements - Final Construction Permit 11MF994(F) was issued for these activities. Applicable requirements are as follows.

Construction Permit 11MF994(F)

- Sets forth a Particulate Emissions Control Plan
  (Note: The Construction Permit indicates that Mining activities are subject to the 20% opacity guideline, under Regulation No. 1. This activity is not "mining," but consists of construction (land clearing and leveling) and storage and handling of materials, which are also subject to the 20% opacity guideline. The permit language is revised to delete the reference to mining activities. The 20% is a guideline, as stated in Regulation No. 1 and its Statement of Basis and Purpose. The regulation shifted the use of opacity observations from an enforceable standard for area sources to a guideline in determining when the adequacy of applied control methods should be reviewed. U.S. EPA Method 9 readings are not required for these sources.)

Other

The Construction Permit does not specifically limit the amount of waste processed, however, the amount is needed to calculate emissions estimates.

Emission Factors - Standard AP-42 equations, or other emission factors/procedures acceptable to the Division, and appropriate control measure/equipment control efficiencies are used to estimate PM and PM_{10} emissions.

Monitoring Plan - A quarterly inspection will be performed to ensure PM emission minimization measures are in place.

Compliance Status - The Division accepts the process was in compliance at the time the Title V application was submitted.

P206 - Soda Ash Addition System

This system was for addition of soda ash to coal for Boiler Units #1 and #2. Due to the Consent Decree changes to the scrubber system, the soda ash addition system has been dismantled and is not longer included in this operating permit.

P401 – Unit 1 Cooling Tower
P402 – Unit 2 Cooling Tower

The cooling towers are used to dissipate waste heat from the boilers circulating water system. Pollutants expected to be emitted include PM and small quantities of chloroform produced by the introduction of chlorine in the recirculating cooling tower water to control biological growth. The cooling towers were not permitted at the time of the initial Operating Permit application submittal. The application documents for a construction permit were submitted and Initial construction permits were subsequently issued.

Applicable Requirements - Initial Construction Permits 98MF0141 and 96MF195 were issued for these sources. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 98MF0141 but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit.

Construction Permits 98MF0141 and 96MF195

- Limit the design and maximum circulating water rates.
- Limit the total dissolved solids content of the water.
- Limit the drift loss and set forth schedules for retrofitting drift eliminators (at the time of Construction Permit issuance, the cooling towers equipped with older style drift eliminators. New, more efficient drift eliminators are considered to represent “BACT” for cooling towers, and the schedule was developed to implement the new style drift eliminators.) The Construction Permits require progress reports by March 31 of the following year. The Operating Permit requires reports by April 30, to be consistent with APEN reporting requirements. (*Note: Construction of the new drift eliminators is completed, therefore the schedule is not included in this operating permit.*)
- Limits PM, PM_{10}, and VOC emissions

Colorado Regulation No. 1, II.A.1&4

- Limits opacity to 20%, except as provided for below
- New fire, cleaning of fire boxes, soot blowing, start-up, any process modification, or adjustment or occasional cleaning of control equipment - not to exceed 30% for a period or periods aggregating more than six (6) minutes in any sixty (60) consecutive minutes

Emission Factors - PM emissions are estimated using EPA factors. VOC emissions are estimated using factors from a report by Michelletti. A copy of the report is included in the Operating Permit application.

Monitoring Plan - Measurements of TDS will be made and recorded monthly.

Compliance Status - The applicant has submitted the documents needed to obtain a construction permit and permits were issued. The Division accepts the cooling towers are now in compliance.

Miscellaneous

Emission Factors - From time to time published emission factors and/or other emission estimating methods are changed based on new or improved data. A logical concern is what happens if the use of the new factors/methods in a calculation results in a source being out of compliance with a permit limit. For this operating permit, the emission factors, equations, and/or other emission estimating methods included in the permit are considered to be fixed until changed by the permit. Obviously, emission factors dependent on the fuel sulfur content or heat content of the fuel can not be fixed and will vary with the test results. The method for determining the emissions is, however, fixed. It is the responsibility of the permittee to be aware of changes in the factors, etc. and to notify the Division in writing of impacts on the permit requirements when there is a change. Upon notification, the Division will work with the permittee to address the situation. In addition, the Division will review the factors, etc. as appropriate during permit modifications and renewals.

APEN Reporting for Insignificant Activities - Some sources permitted under the issued Construction Permits are insignificant sources because the uncontrolled actual emissions for recent years are below APEN de minimis levels. (Note: Those sources with emissions below de minimis levels, but which are subject to an NSPS requirement are still subject to APEN reporting requirements.) These sources are listed in the Operating Permit as permitted sources, in the event emissions should increase above the de minimis level in the future.

Accidental Release Program – 112(r)

Section 112(r) of the Clean Air Act mandates a new federal focus on the prevention of chemical accidents. Sources subject to these provisions must develop and implement risk management programs that include hazard assessment, a prevention program, and an emergency response program. They must prepare and implement a Risk Management Plant (RMP) as specified in the Rule.

Based on the information provided by the applicant, this facility is subject to the provisions of the Accidental Release Prevention Program (Section 112(r) of the Federal Clean Air Act).

Compliance Assurance Monitoring (CAM)

The following emission points at this facility use a control device to achieve compliance with an emission limitation or standard to which they are subject and have pre-controlled emissions that exceed or are equivalent to the major source threshold. They are therefore subject to the provisions of the CAM program as set foth in 40 CFR Part 64 as adopted by reference into Colorado Regulation No. 3, Part C, Section XIV:

None.

(The Title V application was deemed administratively complete prior to April 20, 1998.)