Colorado Department of Public Health and Environment

OPERATING PERMIT

Public Service Company of Colorado - Comanche Station

First Issued: June 1, 2002

Renewed: June 1, 2012

AIR POLLUTION CONTROL DIVISION
COLORADO OPERATING PERMIT

FACILITY NAME:	Comanche Station	OPERATING PERMIT NUMBER
FACILITY ID:	1010003	**96OPPB133**
RENEWED:	June 1, 2012	
EXPIRATION DATE:	June 1, 2017	
MODIFICATIONS:	See Appendix F of Permit	

Issued in accordance with the provisions of Colorado Air Pollution Prevention and Control Act, 25-7-101 et seq. and applicable rules and regulations.

ISSUED TO:	PLANT SITE LOCATION:
Public Service Company of Colorado 1800 Larimer Street, Suite 1300 Denver, CO 80202	2005 Lime Road Pueblo, CO 81006 Pueblo County

INFORMATION RELIED UPON

Operating Permit Renewal Application Received:	April 27, 2006
And Additional Information Received:	September 7, 2010, April 29, May 25, and August 9, 2011 and January 13, 2012

Nature of Business:	Coal-Fired Electric Generating Station
Primary SIC:	4911

RESPONSIBLE OFFICIAL		FACILITY CONTACT PERSON	
Name:	George Hess	Name:	Gary Magno
Title:	General Manager - Power Generation, Colorado	Title:	Manager Environmental Services - Air Quality Compliance
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SUBMITTAL DEADLINES

First Semi-Annual Monitoring Period:	June 1 – September 30
Subsequent Semi-Annual Monitoring Periods:	October 1 – March 31, April 1 – September 30
Semi-Annual Monitoring Report:	November 1, 2012 & May 1, 2013 & subsequent years
First Annual Compliance Period:	June 1 – March 31
Subsequent Annual Compliance Periods:	April 1 – March 31
Annual Compliance Certification:	May 1, 2013 & subsequent years

Note that the Semi-Annual Monitoring Reports and Annual Compliance Certifications must be received at the Division office by 5:00 p.m. on the due date. Postmarked dates will not be accepted for the purposes of determining the timely receipt of those reports/certifications.

FOR ACID RAIN SUBMITTAL DEADLINES SEE SECTION III.4 OF THIS PERMIT

TABLE OF CONTENTS:

SECTION I - General Activities and Summary 1
1. Permitted Activities 1
2. Alternative Operating Scenarios 2
3. Prevention Of Significant Deterioration (PSD) 3
4. Accidental Release Prevention Program (112(r)) 3
5. Compliance Assurance Monitoring (CAM) 3
6. Summary of Emission Units 4

SECTION II - Specific Permit Terms 6
1. B001 & B002 – Unit 1 and Unit 2 Boilers, Coal Fired, With Natural Gas Used for Start-up, Shutdown and Flame Stabilization 6
2. B003 – Unit 3 Boiler, Coal Fired, With Natural Gas Used for Start-up, Shutdown and Flame Stabilization 21
3. Coal Storage and Handling: F001 – Fugitive Coal Handling and Storage, P003, P004 and P006 – Units 1, 2 and 3 Coal Handling Systems (Conveying and Crushing) 42
   P003 – Unit 1 Coal Handling (Crushing and Conveying from Pile to Unit) 42
   P004 – Unit 2 Coal Handling (Crushing and Conveying from Pile to Unit, Conveying from Unloading Hopper to Lowering Well) 42
   P006 – Unit 3 Coal Handling (Crushing and Conveying from Pile to Unit) 42
   F001 - Coal Handling and Storage – Fugitive Sources (Rail Car Unloading, Load-Out to Piles and Storage Piles) 43
4. Waste Ash Handling and Storage – F002 –Waste Ash Landfill and Storage, P001, P002 and P005 – Units 1, 2 and 3 Waste Ash Silos 51
   P001 – Unit 1 Waste Ash Silo 51
   P002 – Unit 2 Waste Ash Silo 51
   P005 - Unit 3 Waste Ash Silo 52
   F002 – Waste Ash Landfill 52
5. M001, M002 and M003 - Cooling Water and Service Water Towers 59
   M001 & M002 –Units 1 and 2 Cooling Water Towers (2) and Service Water Towers (2) 59
   M003 – Unit 3 Cooling Water Tower 59
6. NSPS General Provisions 62
7. Particulate Matter Emission Periodic Monitoring Requirements 62
8. Continuous Emission Monitoring and Continuous Opacity Monitoring Systems 63
9. Opacity Requirements and Periodic Monitoring 71
10. Lead Periodic Monitoring 72
11. Coal Sampling Requirements 72
12. Emission Factors 73
13. Compliance Assurance Monitoring (CAM) Requirements 73
14. Particulate Matter Emissions - Sources Supporting the SO_2 and Hg Control Systems 79
   P007 – Recycle Ash Handling Operations: 6 Silos and 6 Mixers (2 Silos and 2 Mixers for each Unit) 79
   P008 – Lime Handling Operations: 2 Silos and 3 Ball Mill Slakers 80
   P009 – Sorbent Handling Operations: 2 Silos for Units 1 and 2 and 2 Silos for Unit 3 80
15. F003 – Fugitive Particulate Emissions from Vehicle Traffic on Paved and Unpaved Roads 83
16. E001 – Emergency Generator Rated at 2,937 hp 87

SECTION III - Acid Rain Requirements 93

TABLE OF CONTENTS:

1. Designated Representative and Alternate Designated Representative 93
2. Sulfur Dioxide Emission Allowances and Nitrogen Oxide Emission Limitations 93
3. Standard Requirements 93
4. Reporting Requirements 96
5. Comments, Notes and Justifications 97

SECTION IV - Permit Shield 98

1. Specific Non-Applicable Requirements 98
2. General Conditions 99
3. Streamlined Conditions 99

SECTION V - General Permit Conditions 101

1. Administrative Changes 101
2. Certification Requirements 101
3. Common Provisions 101
4. Compliance Requirements 105
5. Emergency Provisions 106
6. Emission Controls for Asbestos 106
7. Emissions Trading, Marketable Permits, Economic Incentives 106
8. Fee Payment 107
9. Fugitive Particulate Emissions 107
10. Inspection and Entry 107
11. Minor Permit Modifications 107
12. New Source Review 107
13. No Property Rights Conveyed 108
14. Odor 108
15. Off-Permit Changes to the Source 108
16. Opacity 108
17. Open Burning 108
18. Ozone Depleting Compounds 108
19. Permit Expiration and Renewal 108
20. Portable Sources 109
21. Prompt Deviation Reporting 109
22. Record Keeping and Reporting Requirements 109
23. Reopenings for Cause 110
24. Section 502(b)(10) Changes 111
25. Severability Clause 111
26. Significant Permit Modifications 111
27. Special Provisions Concerning the Acid Rain Program 111
28. Transfer or Assignment of Ownership 111
29. Volatile Organic Compounds 111
30. Wood Stoves and Wood burning Appliances 112

APPENDIX A - Inspection Information 1

Directions to Plant: 1
Safety Equipment Required: 1
Facility Plot Plan: 1
List of Insignificant Activities: 1

TABLE OF CONTENTS:

APPENDIX B **1**
Reporting Requirements and Definitions 1
Monitoring and Permit Deviation Report - Part I 5
Monitoring and Permit Deviation Report - Part II 7
Monitoring and Permit Deviation Report - Part III 9

APPENDIX C **1**
Required Format for Annual Compliance Certification Report 1

APPENDIX D **1**
Notification Addresses 1

APPENDIX E **1**
Permit Acronyms 1

APPENDIX F **1**
Permit Modifications 1

APPENDIX G **1**
Units 1, 2 and 3 Particulate Matter Compliance Assurance Monitoring Plan 1

APPENDIX H **1**
Unit 3 Acid Gas Compliance Assurance Monitoring Plan 1

APPENDIX I **1**
Recycle Ash Silos Compliance Assurance Monitoring Plan 1

TABLE OF CONTENTS:

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SECTION I - General Activities and Summary

1. Permitted Activities

1.1 The facility consists of three (3) coal fired boilers used to generate electricity. All three boilers are pulverized coal-fired units. Unit 1 (boiler 1) is a 350 MW (net output) tangentially fired boiler. Unit 2 (boiler 2) is a 350 MW (net output) wall-fired boiler and Unit 3 (boiler 3) is a 783 MW (net output) supercritical, tangentially fired boiler. Units 1 and 2 are equipped with dual-fuel natural gas and No. 2 fuel oil ignitors and natural gas burners but No. 2 fuel oil is no longer fired in the ignitors (the oil delivery system has been disconnected). Natural gas is used in Unit 3 for startup, shutdown and flame stabilization.

The facility originally consisted of Units 1 and 2 and the necessary support equipment for these units (coal and ash handling equipment and cooling and service water towers). In August of 2004 Public Service Company of Colorado (PSCo) submitted an application to construct a new coal-fired boiler, Unit 3. In the August 2004 application PSCo proposed to install NO_X controls (low NO_X burners with over-fire air) on both Units 1 and 2 and SO_2 controls (lime spray dryer) on Unit 2 order to "net-out" of Prevention of Significant Deterioration (PSD) review requirements for NO_X and SO_2. In December of 2004, PSCo entered into a Settlement Agreement, with several citizen groups in order to expedite issuance of the construction permit for Unit 3. As part of this Settlement Agreement, PSCo agreed to install SO_2 controls on Unit 1, as well as Unit 2. Units 1 and 2 are equipped with baghouses to control particulate matter (PM) emissions, low NO_X burners and over-fire air to control NO_X emissions and lime spray dryers to control SO_2 emissions. Unit 3 is equipped with a baghouse to control PM emissions, low NO_X burners, over-fire air and selective catalytic reduction (SCR) to control NO_X emissions, a lime spray dryer to control SO_2 emissions and sorbent injection to control mercury (Hg) emissions. Although not included in the construction permits issued for the Unit 3 project, the Settlement Agreement specified that following startup of Unit 3, PSCo shall test various Hg control technologies on Unit 1 and 2 for a period of one year and within two years of startup of Unit 3, PSCo shall comply with plantwide mercury limit. On May 25, 2011, PSCo submitted an application for the plantwide Hg limit, which will take effect on January 1, 2012. In order to comply with the plant wide limit, sorbent injection will be utilized on Units 1 and 2 to control Hg emissions.

In addition to the boilers, emission units and/or activities that have been included in the Section II of the permit include: cooling water and service water towers, coal and ash handling equipment, haul roads (vehicle traffic on paved and unpaved roads), lime silos and slakers, recycle ash silos and mixers, sorbent silos and a diesel fired emergency generator.

The facility is located south and east of Pueblo at 2005 Lime Road, in Pueblo County. The area in which the plant operates is designated as attainment for all criteria pollutants.

There are no affected states within 50 miles of the plant. The Great Sand Dunes National Park, a Federal Class I designated area, is within 100 kilometers of the plant. The Great Sand Dunes National Park, those portions not included as a Federal Class I area, is federal land within 100

kilometers of the facility. This area has been designated by the State to have the same sulfur dioxide increment as federal Class I designated areas.

1.2 Until such time as this permit expires or is modified or revoked, the permittee is allowed to discharge air pollutants from this facility in accordance with the requirements, limitations, and conditions of this permit.

1.3 The Operating Permit incorporates the applicable requirements contained in the underlying construction permits, and does not affect those applicable requirements, except as modified during review of the application or as modified subsequent to permit issuance using the modification procedures found in Regulation No. 3, Part C. These Part C procedures meet all applicable substantive New Source Review requirements of Part B. Any revisions made using the provisions of Regulation No. 3, Part C shall become new applicable requirements for purposes of this Operating Permit and shall survive reissuance. This permit incorporates the applicable requirements (except as noted in Section II) from the following construction permits: 11PB859, 96PB153-2, 04PB1015, 04PB1016, 04PB1017, 04PB1018, 04PB1019, 04PB1020, 04PB1021, 04PB1022, 04PB1439 and 08PB1178.

1.4 All conditions in this permit are enforceable by US Environmental Protection Agency, Colorado Air Pollution Control Division (hereinafter Division) and its agents, and citizens unless otherwise specified. **State-only enforceable conditions are:** Permit Condition Number(s): Section V - Conditions 3.d, 3g (last paragraph), 14 and 18 (as noted).

1.5 All information gathered pursuant to the requirements of this permit is subject to the Recordkeeping and Reporting requirements listed under Condition 22 of the General Conditions in Section V of this permit. Either electronic or hard copy records are acceptable.

2. Alternative Operating Scenarios

2.1 The permittee shall be allowed to make the following changes to its method of operation without applying for a revision of this permit.

2.1.1 The facility may use natural gas for startup and flame stabilization in Boilers No. 1 and No. 2 as specified under Section II.

2.1.2 Evaporation of chemical cleaning solutions may be performed in Boilers No. 1 and No. 2 under the following conditions:

2.1.2.1 All air pollution control equipment shall be in operation during evaporation of cleaning solutions.

2.1.2.2 The permittee shall retain records, on site, of each cleaning event. These records shall include the date and time the event begins and ends and the amount and types of solutions used in the cleaning event.

2.2 The facility must, contemporaneously with making a change from one operating scenario to another, maintain records at the facility of the scenario under which it is operating (Colorado Regulation No. 3, Part A, Section IV.A.1). Either electronic or hard copy records are acceptable.

3. Prevention Of Significant Deterioration (PSD)

3.1 This facility is a major stationary source (potential to emit of any criteria pollutant ≥ 100 tpy) for the purposes of PSD review requirements (Colorado Regulation 3, Part D, Section VI). Future modifications to this facility resulting in a significant net emissions increase (see Colorado Regulation No. 3, Part D, Sections II.A.26 and 42) for any pollutant as listed in Colorado Regulation No. 3, Part D, Section II.A.42 or a modification which is major by itself may result in the application of the PSD review requirements.

3.2 There are no other Operating Permits associated with this facility to be considered in conjunction with this operating permit for purposes of determining the applicability or non-applicability of PSD review requirements.

4. Accidental Release Prevention Program (112(r))

4.1 Based upon the information provided by the applicant, this facility is not subject to the provisions of the Accidental Release Prevention Program (Section 112(r) of the Federal Clean Air Act).

5. Compliance Assurance Monitoring (CAM)

5.1 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-control emissions that exceed or are equivalent to the major source threshold. They are therefore subject to the provisions of the CAM program as set forth in 40 CFR Part 64, as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV:

Units B001, B002 and B003 – Units 1, 2 and 3 Boilers

Unit P007 – Recycle Ash Silos

See Section II, Condition 13 for compliance assurance monitoring requirements.

6. Summary of Emission Units

6.1 The emissions units regulated by this permit are the following:

Emission Unit Number / Facility Identifier	AIRS Stack N0.	Colorado Construction Permit No.	Description	Startup Date	Pollution Control Device
B001	001	04PB1439	Unit 1, Combustion Engineering, Model and Serial No. NB21062, Tangentially Fired Dry Bottom Pulverized Coal-Fired Boiler, Rated at 3,531 MMBtu/hr (maximum continuous rating). Natural Gas is Used for Startup, Shutdown and/or Flame Stabilization.	December 1973 Baghouse (1993) Low NO_X Burners with Over-Fire Air (November 2008) Lime Spray Dryer (June 2009) Sorbent Injection (2012)	Baghouse (PM), Low NO_{Xx} Burners with Over-Fire Air (NO_X), Lime Spray Dryer (SO_2) and Sorbent Injection (Hg)
B002	002	11PB859	Unit 2, Babcock and Wilcox, Model and Serial No. NB23761, Wall-Fired Dry Bottom Pulverized Coal-Fired Boiler, Rated at 3,482 MMBtu/hr (maximum continuous rating). Natural Gas is Used for Startup, Shutdown and/or Flame Stabilization.	November 1975 Baghouse (1991) Low NO_X Burners with Over-Fire Air (November 2007) Lime Spray Dryer (January 2009) Sorbent Injection (2012)	Baghouse (PM), Low NO_X, Burners with Over-Fire Air (NO_X), Lime Spray Dryer (SO_2) and Sorbent Injection (Hg)
B003	014	04PB1015	Unit 3, Alstom, Model and Serial No. 63000105-3, Tangentially Fired Dry Bottom Super Critical Pulverized Coal-Fired Boiler. Rated at 6,973 MMBtu/hr (maximum continuous rating). Natural Gas is Used for Startup, Shutdown and Flame Stabilization.	January 2010	Baghouse (PM), Low NO_X Burners with Over-Fire Air (NO_X), Selective Catalytic Reduction (NO_X), Lime Spray Dryer (SO_2) and Sorbent Injection (Hg)
F001	016	04PB1017	Fugitive Particulate Emissions from Coal Handling and Storage (Rail Car Unloading, Storage Pile and Coal Dozing)	Railcar Rotary Dumper and Units 1 and 2 Coal Pile – 1971 Railcar Bottom Dumper and Unit 3 Coal Pile – August 2009	Subject to Fugitive Particulate Matter Control Plan

Emission Unit Number / Facility Identifier	AIRS Stack N0.	Colorado Construction Permit No.	Description	Startup Date	Pollution Control Device
F002	020	04P1021	Fugitive Particulate Emissions from Ash Handling and Disposal	1973 Ash Pit – June 1987 (replaced previous ash pit which began operation in 1973)	Subject to Fugitive Particulate Matter Control Plan
F003	021	04PB1022	Fugitive Particulate Emissions from Paved and Unpaved Roads	1971 control measures implemented January 2010 with Unit 3 project	Subject to Fugitive Particulate Matter Control Plan
P001	020	N/A	Ash Silo No. 1	December 1973	Baghouse
P002	020	04PB1021	Ash Silo No. 2	November 1975	Baghouse
P005	020	04PB1021	Ash Silo No. 3	January 2010	Baghouse
P003	016	N/A	Unit No. 1 Coal Handling System (Conveying and Crushing)	December 1973	Dust Collector (Bunkers and Transfer Tower) and Enclosures
P004	016	04PB1017	Unit No. 2 Coal Handling System (Conveying and Crushing)	February 1976	Dust Collector (Transfer Tower), dust Collector (Bunkers) and Enclosures
P006	016	04PB1017	Unit No. 3 Coal Handling System (Conveying and Crushing)	January 2010	Baghouse (Transfer Tower), and Enclosures
P007	017	04PB1018	Recycle Ash Handling Operations. Six (6) Recycle Ash Silos and Six (6) Recycle Ash Mixers. Two (2) Silos and Two (2) Mixers Serve Each Unit.	Unit 1 – Dec. 2008 Unit 2 – July 2008 Unit 3 - Jan. 2010	Silos – Baghouses Mixers – Scrubbers
P008	018	04PB1019	Lime Handling Operations. Two (2) Lime Storage Silos and Three (3) Ball Mill Slakers. The Lime Handling Equipment Serves All Three Units.	July 2008	Silos - Baghouses Slakers – Scrubbers
P009	019	04PB1020	Sorbent Handling Operations. Two (2) Sorbent Silos for Units 1 and 2. Two (2) Sorbent Silos for Unit 3.	Units 1 & 2 – Feb. 2009 Unit 3 – Jan. 2010	Baghouses
M001 & M002	011	96PB153-2	Units No. 1 and 2 Cooling Water Towers (Each Rated at 140,000 GPM) and Service Water Towers (Each Rated at 17,000 GPM)	Unit 1 - Dec. 1973 Unit 2 - Feb. 1976	Drift Eliminators
M003	015	04PB1016	Unit No. 3 Cooling Water Tower. GEA Power Cooling, Model No. 545439-9I-34-FCF, Hybrid Cooling System consisting of both a wet condenser and cooling tower and a dry condenser, Rated at 169,970 gal/min.	January 2010	Drift Eliminators
E001	028	08PB1178	Caterpillar, Model No. 3516DITA, Diesel Fuel-Fired Emergency Generator Set. Serial No. SBJ00412. Rated at 2,937 hp (2,000 kw) and 18.8 MMBtu/hr (139 gal/hr)	July 2009	Uncontrolled

SECTION II - Specific Permit Terms

1. B001 & B002 – Unit 1 and Unit 2 Boilers, Coal Fired, With Natural Gas Used for Start-up, Shutdown and Flame Stabilization

Unit 1 is Rated at 3,531 MMBtu/hr and Unit 2 is Rated at 3,482 MMBtu/hr

Unless otherwise specified the requirements apply to each boiler

Parameter	Permit Condition Number	Limitations Short Term	Limitations Long Term	Compliance Emission Factor	Monitoring Method	Monitoring Interval
Particulate Matter (PM)	1.1	0.1 lb/MMBtu		N/A	Baghouse Maintenance, Source Testing and CAM	See Condition 1.1.
		N/A	Unit 1: 1,546 tons/yr Unit 2: 1,525 tons/yr	Unit 1 0.0026 lb/MMBtu Unit 2 0.0043 lb/MMBtu	Recordkeeping and Calculation	Monthly
PM_{10}	1.2	N/A	Unit 1: 1,423 tons/yr Unit 2: 1,403 tons/yr	Unit 1 0.0024 lb/MMBtu Unit 2 0.004 lb/MMBtu	Recordkeeping and Calculation	Monthly
SO_2	1.3	1.2 lb/MMBtu, on a 3-hr rolling average		N/A	Continuous Emission Monitor	Continuously
		0.12 lb/MMBtu, on a 30-day rolling average				
		Units 1 and 2 Together: 0.10 lb/MMBtu on an annual rolling average (daily) basis				
		N/A	**Units 1 and 2 Together:** 3,686 tons/yr			
NO_X	1.4	**Unit 2 – Only:** 0.7 lb/MMBtu, on a 3-hr rolling average		N/A	Continuous Emission Monitor	Continuously
		0.20 lb/MMBtu, on a 30-day rolling average				
		Units 1 and 2 Together: 0.15 lb/MMBtu on an annual rolling average (daily) basis				
		N/A	**Units 1 and 2 Together:** 6,143 tons/yr			
CO	1.5	N/A	Unit 1: 487.3 tons/yr Unit 2: 528.3 tons/yr	Coal: 0.50 lb/ton Natural Gas: Unit 1: 24 lb/MMscf Unit 2: 84 lb/MMscf	Recordkeeping and Calculation	Monthly

Parameter	Permit Condition Number	Limitations		Compliance Emission Factor	Monitoring	
		Short Term	Long Term		Method	Interval
VOC	1.6	N/A	Unit 1: 60.4 tons/yr Unit 2: 59.9 tons/yr	Coal: 0.06 lb/ton Natural Gas: 5.5 lb/MMscf	Recordkeeping and Calculation	Monthly
Fuel Usage	1.7	N/A	Unit 1: Natural Gas – 1,546 MMscf/yr Coal – 1,847,640 tons/yr Unit 2: Natural Gas – 1,546 MMscf/yr Coal – 1,857,120 tons/yr	N/A	Recordkeeping	Monthly
Coal Sampling	1.8	N/A	N/A	N/A	ASTM Methods	See Condition 1.8
Continuous Emission Monitoring Requirements	1.9	N/A	N/A	N/A	See Condition 1.9	
Unit 2 Only - NSPS Subpart A General Provisions	1.10	N/A	N/A	N/A	As Required by NSPS General Provisions	Subject to NSPS General Provisions
Lead (Pb)	1.11	N/A	N/A	See Condition 1.11.	Recordkeeping and Calculation	Annually
Mercury Monitoring Requirements	1.12	N/A	N/A	N/A	See Condition 1.12	
Control Device Operating Requirements	1.13	N/A	N/A	N/A	See Condition 1.13.	
Opacity	1.14	Not to Exceed 20% Except as provided for in 1.15 Below		N/A	Continuous Opacity Monitor	Continuous, Six Minute Intervals
Opacity	1.15	For Certain Operational Activities - Not to Exceed 30%, for a Period or Periods Aggregating More than Six (6) Minutes in Any 60 Consecutive Minutes		N/A		
Unit 2 Only – NSPS Opacity	1.16	Not to Exceed 20% Except for One Six Minute Average Not to Exceed 27% Per Hour		N/A		
Acid Rain Requirements	1.17	See Section III of this Permit			Certification	Annually
Compliance Assurance Monitoring (CAM) Requirements	1.18	See Condition 1.18			See Condition 1.18	

Parameter	Permit Condition Number	Limitations Short Term Long Term	Compliance Emission Factor	Monitoring Method	Interval
Regional Haze Requirements	1.19	**PM:** 0.03 lb/MMBtu	N/A	Baghouse Maintenance, Source Testing and CAM	See Condition 1.19
		SO_2: 0.12 lb/MMBtu, on a 30-day rolling average **Units 1 and 2 Together:** 0.10 lb/MMBtu on an annual rolling average (daily) basis		Continuous Emission Monitor	Continuously
		NO_X: 0.20 lb/MMBtu, on a 30-day rolling average **Units 1 and 2 Together:** 0.15 lb/MMBtu on an annual rolling average (daily) basis			
Plant Wide Mercury Limit	1.20	Mercury emissions from Unit 1, 2 and 3 together shall not exceed 0.0130 lb/GWhr, on an annual rolling average (daily) basis	N/A	Continuous Monitoring System	Continuous
MACT Subpart UUUUU Requirements	1.21	See Condition 1.21	N/A	See Condition 1.21	

1.1 Particulate Matter (PM) emissions shall not exceed the following limitations:

1.1.1 PM emissions **from each unit** shall not exceed 0.1 lb/MMBtu (Colorado Regulation No. 1, Section III.A.1.c).

1.1.2 PM emissions shall not exceed 1,546 tons/yr from Unit 1 and 1,525 tons/yr from Unit 2 (Colorado Construction Permits 04PB1439 and 11PB859, as modified under the provisions of Section I, Condition 1.3 to remove the quarterly emission limitations).

Compliance with the PM emission limitations in Condition 1.1.1 shall be monitored as specified in Conditions 1.1.3 through 1.1.6. Compliance with the PM emissions limitations in Condition 1.1.2 shall be monitored as specified in Condition 1.1.7.

1.1.3 Maintaining and Operating the baghouses in accordance with the requirements identified in Condition 7.1.1.

1.1.4 Conducting performance tests in accordance with Condition 7.2.

During each of the performance tests conducted as required by this condition, a baseline opacity limit shall be established for the compliance assurance monitoring (CAM) requirements specified in Conditions 1.18. The value of the baseline opacity level is determined by averaging all of the 6-minute average opacity values (reported

to the nearest 0.1 percent opacity) from the COMS measurement recorded during each of the test run intervals conducted for the performance test, and then adding the appropriate percent opacity (see table below) to the calculated average value for all of the test runs.

Results of PM performance test	Opacity to add-on
Less than or equal to 50% of the PM standard	5.0 %
Greater than 50% but less than or equal to 75 % of the PM standard	3.5 %
Greater than 75% of the PM standard	2.5 %

If the calculated opacity value (COMS average plus add-on) is less than 5.0 percent, then the opacity baseline level is set at 5.0 percent.

Performance testing was conducted in February 2011 and the baseline opacity level has been set at the levels specified in Condition 13.1.2.

The permittee shall submit the proposed baseline opacity determined from any subsequent performance test for Division approval and begin monitoring under the new baseline within 45 calendar days of the test. The proposed baseline opacity submittal shall include the justification and supporting data for the proposed baseline opacity and any add-on values (e.g., 2.5% or 5.0% as indicated above). In addition, the permittee shall submit with the proposed baseline opacity a minor modification application to revise the permit to incorporate the proposed baseline opacity as the indicator range for the 24-hr average opacity.

1.1.5 Following the CAM requirements specified in Condition 1.18.

1.1.6 Upon the compliance deadline for the PM emission limitations in Condition 1.19.1.1 (Regional Haze PM limits), compliance with the PM emission limitation in Condition 1.1.1 shall, in the absence of credible evidence to the contrary, be presumed as long as the monitoring conducted in accordance with the requirements in Condition 1.19.3 (Regional Haze PM monitoring) indicates compliance with the PM emission limitations in Condition 1.19.1.1 (Regional Haze PM limits).

1.1.7 Compliance with the annual PM limitations in Condition 1.1.2 shall be monitored by calculating emissions monthly **from each unit** using the PM emission factors from the most recent performance test and the monthly quantity of heat input to each boiler in the following equation:

$$\text{tons/mo} = \frac{[\text{EF (lb/MMBtu x monthly heat input (MMBtu/mo)}]}{\text{2000 lb/ton}}$$

The monthly heat input to each boiler shall be determined using the monthly coal consumption and the average heat content of the coal, as determined by the coal sampling required by Condition 1.8. Monthly emissions shall be used in twelve

month rolling totals to monitor compliance with the annual limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

1.2 Particulate Matter less than 10 microns (PM_{10}) emissions shall not exceed 1,423 tons/yr from Unit 1 and 1,403 tons/yr from Unit 2 (Colorado Construction Permits 04PB1439 and 11PB859, as modified under the provisions of Section I, Condition 1.3 to remove the quarterly emission limitations). Compliance with the PM_{10} emission limitations shall be monitored by calculating emissions from each unit monthly using the emission factors from the most recent performance test (PM_{10} is presumed to equal 0.92 x PM, as indicated in AP-42, Section 1.1 (dated 9/98), Table 1.1-16) and the monthly quantity of heat input to each boiler in the following equation:

$$\text{Tons/yr} = \frac{[\text{EF (lb/MMBtu) x annual heat input (MMBtu/yr)}]}{\text{2000 lb/ton}}$$

The monthly heat input to each boiler shall be determined using the monthly coal consumption and the average heat content of the coal, as determined by the coal sampling required by Condition 1.8. Monthly emissions shall be used in twelve month rolling totals to monitor compliance with the annual limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

1.3 Sulfur Dioxide (SO_2) emissions shall not exceed the following limitations:,

1.3.1 SO_2 emissions **from each unit**, shall not exceed 1.2 lb/MMBtu, on a 3 hour rolling average (Colorado Regulation No. 1, Section VI.A.3.a.(ii) and VI.A.1).

1.3.2 SO_2 emissions **from each unit** shall not exceed 0.12 lb/MMBtu, on a 30-day rolling average basis, including emissions from shutdown and malfunction events. The first two hours after coal is first fed to the boiler during a cold startup shall be excluded from the calculation of that day's SO_2 emissions. (Colorado Construction Permits 04PB1439 and 11PB859)

1.3.3 SO_2 emissions **from both Units 1 and 2 together** shall not exceed 0.10 lb/MMBtu, on a combined annual rolling average (rolling on a daily basis) including emissions during startup, shutdown and malfunction events.

1.3.4 SO_2 emissions **from both Units 1 and 2 together** shall not exceed 3,686 tons/yr. (Colorado Construction Permits 04PB1439 and 11PB859, as modified under the provisions of Section I, Condition 1.3 to remove the quarterly emission limitations)

Compliance with the SO_2 limitations shall be monitored using the continuous emission monitoring system (CEMS) required by Condition 1.9 of this permit, as follows:

1.3.5 For purposes of monitoring compliance with the emission limitations in Condition 1.3.1 through 1.3.3, for any hour in which fuel is combusted in the unit, the permittee shall calculate the hourly average SO_2 concentrations in units of lb/MMBtu in accordance with the requirements in 40 CFR Part 75, except that replaced data shall

not be included and the data shall not have been bias-adjusted. Replaced data shall be reported as monitor down time in the quarterly reports required by Condition 8.4. Hourly averages shall be used as follows to monitor compliance with the emission limitations in Conditions 1.3.1 and 1.3.3:

1.3.5.1 All valid hours, including hourly emission data generated during startup, shutdown or malfunction, shall be used in a 3-hour rolling average to monitor compliance with the emission limitations in Condition 1.3.1.

1.3.5.2 All valid hours, excluding those hours specified in Condition 1.3.2, shall be used to calculate a 30-day rolling average. Compliance with the 30-day rolling average is monitored by calculating the arithmetic average of all hourly emissions rates for the 30 successive boiler operating days, except for those hours specified in Condition 1.3.2. A boiler operating day is any day in which fuel is fired in the unit for any period of time.

1.3.5.3 All valid hours, including hourly emission data generated during startup, shutdown or malfunction, shall be used in the equation specified in Condition 1.19.4.5 of this permit to monitor compliance with the emission limitation in Condition 1.3.3.

1.3.5.4 Upon the compliance deadline for the SO_2 emission limitations in Condition 1.19.1.2 (Regional Haze SO_2 limits), compliance with the SO_2 emission limitations in Conditions 1.3.2 and 1.3.3 shall, in the absence of credible evidence to the contrary, be presumed as long as the monitoring conduct in accordance with the requirements in Condition 1.19.4 (Regional Haze SO_2 monitoring) indicates compliance with the SO_2 emission limitations in Condition 1.19.1.2 (Regional Haze SO_2 limits).

1.3.6 For purposes of monitoring compliance with the emission limitations in Condition 1.3.4, for any hour in which fuel is combusted in the unit, the permittee shall program the DAHS to calculate lb/hr SO_2 emissions in accordance with the requirements in Condition 8.1.7.2 of this permit and the requirements in 40 CFR Part 75, including any replaced data and data shall be bias-adjusted, if warranted.

Specifically hourly mass SO_2 emissions (in lbs/hr) shall be determined by taking the hourly Part 75 SO_2 ppm value (which includes replaced or bias-adjusted data, as applicable), multiplying it by the hourly Part 75 stack flow rate (which includes replaced or bias-adjusted data, as applicable) and then multiplying it by the applicable conversions factor. The resulting SO_2 lb/hr value (which is calculated using equation F-2 in Appendix F of 40 CFR Part 75) is then multiplied by the unit operating time for that hour to produce a SO_2 lbs value. Hourly SO_2 mass emissions (lbs) shall be summed and divided by 2000 lbs/ton to determine monthly SO_2 emissions (in tons).

Monthly emissions (in tons) from Units 1 and 2 shall be summed together and used in a rolling twelve month total to monitor compliance with the annual limitations. Each

month a new twelve month total shall be calculated using the previous twelve months data.

1.4 Nitrogen Oxide (NO_X) emissions shall not exceed the following limitations:

1.4.1 NO_X emissions **from Unit 2**, shall not exceed 0.7 lb/MMBtu, on a 3-hour rolling average (40 CFR 60.44(a)(3) and 60.45(g)(3), as adopted by reference in Colorado Regulation No. 6, Part A). Compliance with this standard shall be demonstrated using the CEMS required by Condition 1.9 of this permit.

Note that the NO_X emission limits are not applicable during times of startup, shutdown and malfunction. However, those instances during startup, shutdown and malfunction when the NO_X limitation is exceeded shall be identified in the Excess Emission Report required in Condition 8.4.

1.4.2 NO_X emissions **from each unit** shall not exceed 0.20 lb/MMBtu, on a 30-day rolling average basis, including emissions from shutdown and malfunction events. (Colorado Construction Permits 04PB1439 and 11PB859).

1.4.3 NO_X emissions **from both Units 1 and 2 together** shall not exceed 0.15 lb/MMBtu, on an annual rolling average basis (rolling on a daily basis), including shutdown and malfunction events. (Colorado Construction Permits 04PB1439 and 11PB859)

1.4.4 During cold startups, the following shall be excluded from the calculation of that day's NO_X emissions for purposes of monitoring compliance with the limitations in Conditions 1.4.2 and 1.4.3 (Colorado Construction Permit 04PB1439 and 11PB859):

1.4.4.1 The first two hours when natural gas-fired igniters are in use, and

1.4.4.2 The first four hours after coal is first fed to the boiler.

1.4.5 NO_X emissions **from both Units 1 and 2 together** shall not exceed 6,143 tons/yr. (Colorado Construction Permits 04PB1439 and 11PB859)

Compliance with the NO_X limitations shall be monitored using the CEMS required by Condition 1.9 of this permit, as follows:

1.4.6 For purposes of monitoring compliance with the emission limitations in Condition 1.4.1 through 1.4.3, for any hour in which fuel is combusted in the unit, the permittee shall calculate the hourly average NO_X concentrations in units of lb/MMBtu in accordance with the requirements in 40 CFR Part 75, except that replaced data shall not be included and the data shall not have been bias-adjusted. Replaced data shall be reported as monitor down time in the quarterly reports required by Condition 8.4. Hourly averages shall be used as follows to monitor compliance with the emission limitations in Conditions 1.4.1 through 1.4.3:

1.4.6.1 All valid hours, excluding hourly emission data generated during startup,

shutdown or malfunction, shall be used in a 3-hour rolling average to monitor compliance with the emission limitations in Condition 1.4.1.

1.4.6.2 All valid hours, excluding those hours specified in Condition 1.4.4, shall be used to calculate a 30-day rolling average. Compliance with the 30-day rolling average is monitored by calculating the arithmetic average of all hourly emissions rates for the 30 successive boiler operating days, except for those hours specified in Condition 1.4.4. A boiler operating day is any day in which fuel is fired in the unit for any period of time.

1.4.6.3 All valid hours, excluding those hours specified in condition 1.4.4, shall be used in the equation specified in Condition 1.19.4.5 of this permit to monitor compliance with the emission limitation in Condition 1.4.3.

1.4.6.4 Upon the compliance deadline for the NO_X emission limitations in Condition 1.19.1.3 (Regional Haze NO_X limits), compliance with the NO_X emission limitations in Conditions 1.4.2 and 1.4.3 shall, in the absence of credible evidence to the contrary, be presumed as long as the monitoring conduct in accordance with the requirements in Condition 1.19.4 (Regional Haze NO_X monitoring) indicates compliance with the NO_X emission limitations in Condition 1.19.1.3 (Regional Haze NO_X limits).

1.4.7 For purposes of monitoring compliance with the emission limitations in Condition 1.4.5, for any hour in which fuel is combusted in the unit, the permittee shall program the DAHS to calculate lb/hr NO_X emissions in accordance with the requirements in Condition 8.1.7.2 of this permit and 40 CFR Part 75, including any replaced data and the data shall be bias-adjusted, if warranted.

Specifically hourly mass NO_X emissions (in lb/hr) shall be calculated by multiplying the hourly Part 75 NO_X lb/MMBtu value (which includes replaced or bias-adjusted data, as applicable) by the hourly heat input value (MMBtu/hr) (which includes replaced and bias-adjusted data from the stack flow and % CO_2 measurements, as applicable). The hourly NO_X lb/MMBtu and heat input values are determined using equations F-6 and F-16 in Appendix F of 40 CFR Part 75. The resulting NO_X lb/hr value is then multiplied by the unit operating time for that hour to produce a NO_X lbs value. Hourly NO_X mass emissions (lbs) shall be summed and divided by 2000 lbs/ton to determine monthly NO_X emissions (in tons).

Monthly emissions (in tons) from Units 1 and 2 shall be summed together and used in a rolling twelve month total to monitor compliance with the annual limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

1.5 Carbon Monoxide (CO) emissions shall not exceed 487.3 tons/yr from Unit 1 and 528.3 tons/yr from Unit 2. (Colorado Construction Permits 04PB1439 and 11PB859, as modified under the provisions of Section I, Condition 1.3 to remove the quarterly emission limitations) Compliance with the annual limitations shall be monitored by calculating emissions monthly **from each unit**

using the emission factors in the above summary table (from AP-42, coal: Section 1.1 (dated 9/98), Table 1.1-3, for PC, sub-bituminuous, wall-fired, NSPS and tangentially fired, pre-NSPS boilers and natural gas: Section 1.4 (dated 3/98), Table 1.4-1 for large (> 100 MMBtu/hr) wall-fired and tangentially fired boilers) and the monthly fuel usage for the unit (as required by Condition 1.7) in the following equation:

$$\text{Tons/month} = \frac{[\text{EF (lb/ton or lb/MMscf) x annual fuel usage (tons/month or MMscf/month)}]}{\text{2000 lb/ton}}$$

Monthly emissions shall be used in twelve month rolling totals to monitor compliance with the annual limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

1.6 Volatile Organic Compound (VOC) emissions shall not exceed 60.4 tons/yr from Unit 1 and 59.9 tons/yr from Unit 2. (Colorado Construction Permits 04PB1439 and 11PB859, as modified under the provisions of Section I, Condition 1.3 to remove the quarterly emission limitations) Compliance with the annual limitations shall be monitored by calculating emissions monthly **from each unit** using the emission factors in the above summary table (from AP-42, coal: Section 1.1 (dated 9/98), Table 1.1-19 for TNMOC and natural gas: Section 1.4 (dated 3/98), Table 1.4-2) and the monthly fuel usage for the unit (as required by Condition 1.7) in the following equation:

$$\text{Tons/month} = \frac{[\text{EF (lb/ton or lb/MMscf) x monthly fuel usage (tons/month or MMscf/month)}]}{\text{2000 lb/ton}}$$

Monthly emissions shall be used in twelve month rolling totals to monitor compliance with the annual limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

1.7 Fuel Usage shall not exceed the following limitations (Colorado Construction Permits 04PB1439 and 11PB859, as modified under the provisions of Section I, Condition 1.3 to remove the quarterly limitations):

1.7.1 Coal Consumption shall not exceed 1,847,640 tons/yr from Unit 1 and 1,857,120 tons/yr from Unit 2.

1.7.2 Natural Gas consumption shall not exceed 1,546 MMscf/yr from Unit 1 and 1,546 MMscf/yr from Unit 2.

Fuel Usage **for each unit** shall be monitored and recorded monthly using belt scales, fuel meters and corporate records as necessary. Monthly fuel usage shall be used in twelve month rolling totals to monitor compliance with the annual limitations. Each month new twelve month totals shall be calculated using the previous twelve months data

1.8 Coal shall be sampled in accordance with the requirements identified in Condition 11. Vendor sample results from all coal shipments shall be used to determine the average heat, sulfur, ash and moisture content of the fuel used to monitor compliance with permit conditions.

1.9 **For each unit**, the source shall install, certify and operate CEMS equipment for measuring opacity, SO_2, NO_X (including diluent gas either CO_2 or O_2), CO_2, and volumetric flow (40 CFR Part 75). The CEMS shall meet the requirements in Condition 8.

1.10 **Unit 2 Only** is subject to the requirements in 40 CFR Part 60 Subpart A - General Provisions, as adopted by reference in Colorado Regulation No. 6, Part A. Specifically, this unit is subject to the requirements identified in Condition 6.

1.11 For the purposes of APEN reporting and the payment of fees, annual emissions of lead shall be calculated as required by Condition 10.

1.12 These units are subject to the following mercury monitoring requirements:

1.12.1 PSCo shall install, properly maintain and operate a continuous mercury emissions monitoring system on Units 1 and 2 using Q-SEMS technology as described at 69 Federal Register at 4694 (January 30, 2004), or such other technology as the Parties may agree (Colorado Construction Permits 04PB1439 and 11PB859).

1.12.2 PSCo shall monitor mercury emissions from Units 1 and 2 and shall report the quality assured and quality controlled data to CECP and the Department on a calendar quarterly basis thereafter (Colorado Construction Permits 04PB1439 and 11PB859)

1.12.3 PSCo shall operate and maintain the mercury monitoring technology in accordance with EPA requirements and the manufacturing specifications. In the event of any mercury monitoring technology malfunction, PSCo shall either repair or replace such monitoring technology. If the mercury monitoring technology identified in the above paragraph is unable to meet applicable performance requirements despite PSCo's efforts to repair and replace such technology, PSCo agrees to install alternate mercury monitoring technology unless technologically or economically infeasible or to conduct annual stack testing if monitoring technology is technologically or economically infeasible (Colorado Construction Permits 04PB1439 and 11PB859).

1.13 At all times, including periods of startup, shutdown and malfunction, PSCo shall, to the extent practicable, maintain and operate any emission control equipment required under this permit in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Department which may include, but is not limited to, monitoring results, observations, review of operating and maintenance procedures, and inspection of the source (Colorado Construction Permits 04PB1439 and 11PB859)

1.14 Compliance with this standard shall be monitored in accordance with the requirements in Condition 9.1.

1.15 Compliance with this standard shall be monitored in accordance with the requirements in Condition 9.2.

1.16 **For Unit 2 Only –** Compliance with this standard shall be monitored in accordance with the requirement in Condition 9.3.

1.17 These units are subject to the Title IV Acid Rain Requirements. As specified in 40 CFR Part 72.72(b)(1)(viii), the acid rain permit requirements shall be a complete and segregable portion of the Operating Permit. As such the requirements are found in Section III of this permit.

1.18 These units are subject to the CAM requirements with respect to the PM limitations in Conditions 1.1.1 and 1.19.1.1 and the PM_{10} limitations in Condition 1.2. Compliance with the CAM requirements shall be monitored in accordance with the requirements in Condition 13 and the CAM Plan in Appendix G.

1.19 These units are subject to the following Regional Haze Requirements:

1.19.1 Emission Limitations (Colorado Regulation No. 3, Part F, Section VI.A.2):

1.19.1.1 PM emissions **from each unit** shall not exceed 0.03 lb/MMBtu.

1.19.1.2 SO_2 emissions shall not exceed the following limitations:

a. SO_2 emissions **from each unit** shall not exceed 0.12 lb/MMBtu, on a 30-day rolling average basis.

b. SO_2 emissions **from both Units 1 and 2 together** shall not exceed 0.10 lb/MMBtu, on a combined annual average.

1.19.1.3 NO_X emissions shall not exceed the following limitations:

a. NO_X emissions from each unit shall not exceed 0.20 lb/MMBtu, on a 30-day rolling average basis.

b. NO_X emissions from both units 1 and 2 together shall not exceed 0.15 lb/MMBtu, on a combined annual average.

1.19.2 Compliance Date

1.19.2.1 The permittee must comply with the above limits and averaging times as expeditiously as practicable, but in no event later than five years after EPA approval of Colorado's state implementation plan for regional haze, or relevant component thereof. The permittee must maintain control equipment or operational practices required to comply with the above limits and averaging times, and establish procedures to ensure that such equipment or operational practices are properly operated and maintained. (Colorado Regulation No. 3, Part F, Section IV.A.3)

1.19.2.2 The permittee shall submit to the Division a proposed compliance schedule within sixty days after EPA approves the BART portion of the

Regional Haze SIP. The Division shall publish these proposed schedules and provide for a thirty-day public comment period following publication. The Division shall publish its final determinations regarding the proposed schedules for compliance within sixty days after the close of the public comment period and will respond to all public comments received. (Colorado Regulation No. 3, Part F, Section IV.A.4)

1.19.3 PM Monitoring

1.19.3.1 Unless particulate compliance testing was completed within the previous 6 months, within 60 days of the compliance deadline specified in Condition 1.19.2 of this permit, the owner/operator shall conduct a stack test to measure particulate emissions in accordance with the requirements and procedures set forth in EPA Test Method 5 as set forth in 40 CFR Part 60, Appendix A. Stack testing for particulate matter shall be performed annually, except that: (1) if any test results indicate emissions are less than or equal to 50% of the emission limit, another test is required within five years; (2) if any test results indicate emissions are more than 50%, but less than or equal to 75% of the emission limit, another test is required within three years; and (3) if any test results indicate emissions are greater than 75% of the emission limit, an annual test is required until the provisions of (1) or (2) are met. A test run shall consist of three test runs, with each run at least 120 minutes in duration. Test results shall be converted to the applicable units and compliance will be based on the average of the three test runs. (Colorado Regulation No. 3, Part F, Section VII.C)

1.19.3.2 During each of the performance tests conducted as required Condition 1.19.3.1, a baseline opacity limit shall be established for the CAM requirements specified in Condition 1.18. The value of the baseline opacity level is determined by averaging all of the 6-minute average opacity values (reported to the nearest 0.1 percent opacity) from the COMS measurement recorded during each of the test run intervals conducted for the performance test, and then adding the appropriate percent opacity (see table below) to the calculated average value for all of the test runs.

Results of PM performance test	Opacity to add-on
Less than or equal to 50% of the PM standard	3.5 %
Greater than 50% of the PM standard	2.5 %

If the calculated opacity value (COMS average plus add-on) is less than 5.0 percent, then the opacity baseline level is set at 5.0 percent.

The permittee shall submit the proposed baseline opacity determined from the initial test and any subsequent performance tests required by Condition 1.19.3.1 for Division approval and begin monitoring under the new

baseline within 45 calendar days of the test. The proposed baseline opacity submittal shall include the justification and supporting data for the proposed baseline opacity and any add-on values (e.g., 2.5% or 3.5% as indicated above). In addition, the permittee shall submit with the proposed baseline opacity a minor modification application to revise the permit to incorporate the proposed baseline opacity as the indicator range for the 24-hr average opacity.

1.19.3.3 In addition, to the stack tests described in Condition 1.19.3.1, the owner/operator shall monitor compliance with the particulate matter limits in accordance with the applicable compliance assurance monitoring plan developed and approved in accordance with 40 CFR Part 64. (Colorado Regulation No. 3, Part F, Section VII.C) The compliance assurance monitoring requirements are specified in Condition 1.18 of this permit and the compliance assurance monitoring plan is included in Appendix G of this permit.

1.19.4 SO_2 and NO_X Monitoring

1.19.4.1 The owner or operator of a boiler subject to this section shall comply with the Part 75 monitoring and recordkeeping requirements as specified in Condition 8 of this permit with the exception of the CEMS data substitution and bias adjustment requirements.

At all times after the compliance deadline specified in Condition 1.19.2 of this permit, the owner/operator of each BART, RP, or BART alternative program unit shall maintain, calibrate, and operate a CEMS, in full compliance with the requirements found at 40 CFR Part 75 not excluded above, to accurately measure from such unit SO_2, NO_X, diluent, and stack gas volumetric flow rate as such parameters are relevant to the applicable emission limit. The CEMS shall be used to determine compliance with the SO_2 and NO_X Regional Haze emission limits for each such unit. Such limits are expressed in units of pounds per million Btu. The owner/operator shall calculate emissions in the applicable units.

In determining compliance with the SO_2 and NO_X Regional Haze limits, all periods of emissions shall be included, including startups, shutdowns, emergencies, and malfunction.

(Colorado Regulation No. 3, Part F, Section VII.B.1.a)

1.19.4.2 For any hour in which fuel is combusted in the BART, RP, or BART alternative program unit, the owner/operator shall calculate hourly average SO_2 and NO_X concentrations in pounds per million Btu at the CEMS in accordance with the requirements of 40 CFR Part 75 except for Part 75 requirements excluded by Section VII.B.1.a. These hourly averages shall

then be used to determine compliance in accordance with the particular limit's averaging period, as follows (Colorado Regulation No. 3, Part F, Section VII.B.1.a.(i)(1)):

1.19.4.3 Regional Haze limits with a 30-day averaging period: Before the end of each operating day, the owner/operator shall calculate and record the 30-day rolling average emission rate in lb/MMBtu from all valid hourly emission values from the CEMS for the previous 30 operating days. (Colorado Regulation No. 3, Part F, Section VII.B.1.a.(i)(2))

1.19.4.4 "Operating day" means any twenty-four-hour period between midnight and the following midnight during which any fuel is combusted at any time in a BART unit, BART alternative program unit, or Reasonable Progress unit. (Colorado Regulation No. 3, Part F, Section VII.A.4)

1.19.4.5 Comanche Units 1 and 2 Regional Haze combined annual average limits. The combined annual limitations for NO_X and SO_2 are on a 365-operating day rolling average. Before the end of each operating day, the owner/operator shall calculate and record an annual rolling average using data from the previous 365 operating days in accordance with the following equation. (Colorado Regulation No. 3, Part F, Section VII.B.1.a.(i)(6))

Combined emission rate (lb/MMBtu) = [(ER1)(HI1) + (ER2)(HI2)]/(HI1 + H12)

Where:

ER1 = average emission rate over the 365 operating day period. This is an average of all valid hours within the 365 operating day period for Unit 1.

HI1 = total heat input over the 365 operating day period for Unit 1.

ER2 = average emission rate over the 365 operating day period. This is an average of all valid hours within the 365 operating day period for Unit 2.

HI2 = total heat input over the 365 operating day period for Unit 2

1.19.5 Recordkeeping and Reporting Requirements

1.19.5.1 The owner/operating shall maintain the following records for at least five years (Colorado Regulation No. 3, Part F, Section VII.D):

a. All CEMS data as required in the applicable regulation, stack test data, and data collected pursuant to the CAM plan, including the date, place, and time of sampling, measurement, or testing; parameters sampled, measured, or tested and results; the company, entity, or person that performed the testing, if applicable; and any field data sheets from testing. (Colorado Regulation No. 3, Part F, Section VII.D.1)

b. Records of quality assurance and quality control activities for emissions measuring systems including, but not limited to, any

records required by 40 CFR Part 60, 63, or 75. (Colorado Regulation No. 3, Part F, Section VII.D.2)

1.19.5.2 The owner/operator of a BART, RP or BART alternative program unit shall submit semi-annual excess emissions reports no later than the 30th day following the end of each semi-annual period unless more frequent reporting is required. Excess emissions means emissions that exceed the Regional Haze emissions limits. Excess emission reports shall include the information specified in 40 CFR Part 60, Section 60.7(c). (Colorado Regulation No. 3, Part F, Section VII.E) Frequency of excess emission reports shall be quarterly as specified in Condition 8.4.

1.19.5.3 The owner/operator of a BART, RP or BART alternative program unit shall submit reports of any required performance stack tests for particulate matter, to the Division within 45 calendar days as required by Condition 7.2 of this permit.

1.20 Mercury emissions **from Units 1, 2 and 3 together** shall not exceed 0.0130 lb/GWh on rolling annual average. (Colorado Regulation No. 3, Part B, Section II.A.4, in accordance with the December 3, 2004 Settlement Agreement between PSCo and Concerned Environmental Community Parties (CECP), paragraph 7.F) Compliance with the plant wide Hg limit shall be monitored using the Hg CEMS required by Conditions 1.12 and 2.15.5.1. For any hour in which fuel is fired in the unit, the permittee shall calculate hourly average Hg emissions in units of lb/GWh. The plant wide Hg limit is on a 365-operating day rolling average. An operating day is any twenty-four hour period between midnight and the following midnight in which fuel is combusted at any time in the unit. Before the end of each operating day, the permittee calculate and record an annual rolling average using data from the previous 365 operating days in accordance with the following equation:

Combined emission rate (lb/GWh) = [(ER1)(GW1) + (ER2)(GW2) + (ER3)(GW3)]/(GW1 + GW2 + GW3)

Where:

ER1 = average emission rate (in lb/GWh) over the 365 operating day period. This is an average of all valid hours within the 365 operating day period for Unit 1.
GW1 = total unit output (in GW) over the 365 operating day period for Unit 1.
ER2 = average emission rate (in lb/GWh) over the 365 operating day period. This is an average of all valid hours within the 365 operating day period for Unit 2.
GW2 = total unit output (in GW) over the 365 operating day period for Unit 2
ER3 = average emission rate (in lb/GWh) over the 365 operating day period. This is an average of all valid hours within the 365 operating day period for Unit 3.
GW3 = total unit output (in GW) over the 365 operating day period for Unit 3

The permittee shall begin calculating compliance with the plant wide mercury limit on January 1, 2012. Initial compliance with this limitation shall be assessed after each unit has completed 365 operating days following the January 1, 2012 start date.

1.21 These units are subject to the requirements in 40 CFR Part 63 Subpart UUUUU, “National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-fired Electric Utility Steam

Generating Units". Within one (1) year of the compliance date for these requirements, the permittee shall submit an application to modify this permit to incorporate the specific emission limitations and compliance monitoring methods the source has chosen in order to comply with these requirements.

2. B003 – Unit 3 Boiler, Coal Fired, With Natural Gas Used for Start-up, Shutdown and Flame Stabilization

Unit 3 is Rated at 6,973 MMBtu/hr

Parameter	Permit Condition Number	Limitations		Compliance Emission Factor	Monitoring	
		Short Term	Long Term		Method	Interval
BACT Requirements	2.1	N/A	N/A	N/A	See Condition 2.1	
PM	2.2	Total PM: 0.020 lb/MMBtu Filterable PM: 0.0120 lb/MMBtu (see Condition 2.2 for averaging time)	Total PM: 715 tons/yr	Total PM: 0.0199 lb/MMBtu	See Condition 2.2	
PM_{10}	2.3.	Total PM_{10}: 0.020 lb/MMBtu Filterable PM_{10}: 0.0120 lb/MMBtu (see Condition 2.2 for averaging time)	Total PM_{10}: 650 tons/yr	Total PM_{10}: 0.0199 lb/MMBtu	See Condition 2.3	
SO_2	2.4	0.4 lb/MMBtu, on a 3-hr rolling average		N/A	Continuous Emission Monitor	Continuously
		0.10 lb/MMBtu, on a 30-day rolling average				
		1.4 lb/MWh gross energy output, on a 30-day rolling average				
		N/A	3,250 tons/yr			
NO_X	2.5	0.08 lb/MMBtu, on a 30-day rolling average		N/A	Continuous Emission Monitor	Continuously
		0.07 lb/MMBtu, on an annual (daily) rolling average				
		1.0 lb/Mwh gross energy output, on a 30-day rolling average				
		N/A	2,600 tons/yr			
CO	2.6	0.13 lb/MMBtu, on an 8-hr rolling average, except as provided for below During Startup: 0.30 lb/MMBtu, averaged over the startup or 8 hrs, whichever is shorter	4,225 tons/yr	N/A	Continuous Emission Monitor	Continuously

Parameter	Permit Condition Number	Limitations		Compliance Emission Factor	Monitoring	
		Short Term	Long Term		Method	Interval
VOC	2.7	0.0035 lb/MMBtu, the average of three (3) test runs	114 tons/yr	8.29×10^{-4} lb/MMBtu	Recordkeeping and Calculation Performance Tests	Monthly Annually to Every Five (5) Years (See Condition 2.17)
Acid Gases	2.8	H_2SO_4: 0.0034 lb/MMBtu HF: 0.00049 lb/MMBtu HCl: 0.00064 lb/MMBtu All the average of three (3) test runs	H_2SO_4: 136.5 tons/yr HF: 15.9 tons/yr	H_2SO_4: 8.55×10^{-5} lb/MMBtu HF: 1.92×10^{-5} lb/MMBtu HCl: 1.28×10^{-5} lb/MMBtu	Recordkeeping and Calculation Performance Testing	Monthly Annually to Every Five (5) Years (See Condition 2.17)
Lead (Pb)	2.9	N/A	N/A	N/A	Recordkeeping and Calculation	Annually
Fuel Usage	2.10	N/A	Natural Gas – 1,445 MMscf/yr Coal – 3,963,900 tons/yr	N/A	Recordkeeping	Monthly
Coal Sampling	2.11	N/A	N/A	N/A	ASTM Methods	See Condition 2.11.
SO_2, NO_X and CO Continuous Emission Monitoring Requirements	2.12	N/A	N/A	N/A	See Condition 2.12	
NSPS Subpart A General Provisions	2.13	N/A	N/A	N/A	As Required by NSPS General Provisions	Subject to NSPS General Provisions
PM Continuous Emission Monitoring Requirement	2.14	N/A	N/A	N/A	See Condition 2.14	

Parameter	Permit Condition Number	Limitations Short Term Long Term	Compliance Emission Factor	Monitoring Method	Interval
Case-by-Case MACT 112(g) Requirements	2.15	**Mercury:** 14.7×10^{-6} lb/MWh (0.0147 lb/GWh), on a 12 month rolling average **Non-Mercury Metal HAPs:** Total PM_{10} – 0.020 lb/MMBtu* **Acid Gasses:** HF - HCl – 6.2×10^{-4} lb/MMBtu* HF – 4.0×10^{-4} lb/MMBtu* Organic HAP Total PM_{10} – 0.020 lb/MMBtu* VOC – 0.0034 lb/MMBtu* *based on the average of three (3) test runs	N/A	See Condition 2.15	
Opacity	2.16	Not to Exceed 10% Except as provided for below During Startup: Not to Exceed 30%, for a Period or Periods Aggregating More than Six (6) Minutes in Any 60 Consecutive Minutes During Shutdown: Not to Exceed 20%	N/A	Continuous Opacity Monitor	Continuous, Six Minute Intervals
Performance Testing	2.17	Performance testing required for total (filterable plus condensable) PM/PM_{10}, HCl, HF, H_2SO_4 and VOC	N/A	EPA Test Methods	Annually to Every Five (5) Years (see Condition 2.17)
Post Construction Monitoring	2.18	Post-Construction Monitoring Required for PM_{10} and Ozone.	N/A	See Condition 2.18	
Acid Rain Requirements	2.19	See Section III of this Permit		Certification	Annually
Compliance Assurance Monitoring (CAM) Requirements	2.20	See Condition 2.20		See Condition 2.20	
Plant Wide Mercury Limit	2.21	Mercury emissions from Unit 1, 2 and 3 together shall not exceed 0.0130 lb/GWhr, on an annual rolling average (daily) basis	N/A	Continuous Monitoring System	Continuous
MACT Subpart UUUUU Requirements	2.22	See Condition 2.22	N/A	See Condition 2.22	

2.1 Unit 3 is subject to the requirements of the PSD Program. Best Available Control Technology (BACT) shall be applied for control of PM, PM_{10}, CO, VOC, Hydrogen Fluoride (HF) and Sulfuric Acid Mist (H_2SO_4) emissions. BACT has been determined as follows:

2.1.1 BACT for PM and PM_{10} has been determined to be a baghouse with the emission limits specified in Conditions 2.2.1, (filterable PM) 2.2.2 (total PM), 2.3.1 (filterable

PM_{10}), 2.3.2 (total PM_{10}) and 2.16 (opacity). (Colorado Construction Permit 04PB1015)

2.1.2 BACT for CO and VOC has been determined to be good combustion practices with the emission limits specified in Conditions 2.6.1 (CO) and 2.7.1 (VOC). (Colorado Construction Permit 04PB1015)

2.1.3 BACT for HF and H_2SO_4 has been determined to be a lime spray dryer followed by a baghouse with the emission limits specified in Conditions 2.8.1.1 (H_2SO_4) and 2.8.2.1 (HF). (Colorado Construction Permit 04PB105)

2.2 PM Emissions are subject to the following requirements:

2.2.1 For purposes of BACT filterable PM emissions shall not exceed 0.0120 lb/MMBtu. (Colorado Construction Permit 04PB1015, as modified under the provisions of Section I, Condition 1.3 to reduce filterable PM emissions to a limit equal to PM_{10} and revise the averaging time, in anticipation of the use of a PM CEMS) The averaging time for the filterable PM limits, are as follows:

2.2.1.1 Prior to operation of the PM CEMS, compliance with the BACT limit shall be based on the average of three (3) test runs.

2.2.1.2 Upon operation of the PM CEMS, compliance with the BACT limit shall be based on a 24-hour rolling average. The averaging time is based on 24 unit operating hours (a unit operating hour is any hour in which fuel has been fired in the boiler).

2.2.2 For purposes of BACT, total (filterable plus condensable) PM emissions shall not exceed 0.020 lb/MMBtu, based on the average of three (3) test runs. (Colorado Construction Permit 04PB1015, as modified under the provisions of Section I, Condition 1.3 to revise the total PM limit to be the same as the total PM_{10} limit in order to be consistent with the changes made to the filterable PM limit)

2.2.3 Annual total (filterable plus condensable) PM emissions shall not exceed 715 tons/yr. (Colorado Construction Permit 04PB105, as modified under the provisions of Section I, Condition 1.3 to remove the quarterly limits)

Compliance with the PM limitations shall be monitored as follows:

2.2.4 Prior to commencing operation of the PM CEMS, compliance with the <u>filterable PM</u> limitation in Condition 2.2.1 shall be monitored as follows:

2.2.4.1 Maintaining and operating the baghouse in accordance with the requirements identified in Condition 7.1.1

2.2.4.2 Performance tests shall be conducted as required by Condition 2.17 in accordance with the requirements and procedures set forth in Method 5 as

set forth in 40 CFR Part 60, Appendix A. Duration of each test run shall be at least 120 minutes.

A stack testing protocol shall be submitted for Division approval at least thirty (30) calendar days prior to any performance of the test required under this condition. No stack test required herein shall be performed without prior written approval of the protocol by the Division. The Division reserves the right to witness the test. In order to facilitate the Division's ability to make plans to witness the test, notice of the date (s) for the stack test shall be submitted to the Division at least thirty (30) calendar days prior to the test. The Division may for good cause shown, waive this thirty (30) day notice requirement. In instances when a scheduling conflict is presented, the Division shall immediately contact the permittee in order to explore the possibility of making modifications to the stack test schedule. The required number of copies of the compliance test results shall be submitted to the Division within forty-five (45) calendar days of the completion of the test unless a longer period is approved by the Division.

2.2.4.3 During each of the performance tests conducted as required by Condition 2.2.4.2, a baseline opacity limit shall be established for the CAM requirements specified in Condition 2.20. The value of the baseline opacity level is determined by averaging all of the 6-minute average opacity values (reported to the nearest 0.1 percent opacity) from the COMS measurement recorded during each of the test run intervals conducted for the performance test, and then adding 2.5 percent opacity to the calculated average value for all of the tests runs.

If the calculated opacity value (COMS average plus 2.5 percent) is less than 5.0 percent, then the opacity baseline level is set at 5.0 percent.

The permittee shall submit the proposed baseline opacity determined from any subsequent performance test for Division approval and begin monitoring under the new baseline within 45 calendar days of the test. The proposed baseline opacity submittal shall include the justification and supporting data for the proposed baseline opacity. In addition, if the new baseline level is different than the current baseline level, the permittee shall submit with the proposed baseline opacity a minor modification application to revise the permit to incorporate the proposed baseline opacity as the indicator range for the 24-hr average opacity.

2.2.4.4 Following the CAM requirements specified in Condition 2.20.

2.2.5 On and after commencing operation of the PM CEMS, compliance with the filterable PM limitation in Condition 2.2.1 shall be monitored as follows:

2.2.5.1 The permittee shall submit a written notification to the Division of intent

to monitor compliance with the filterable PM limitation in Condition 2.2.1 by using a CEMS measuring PM. This notification shall be sent at least 30 calendar days prior to relying on the PM CEMS to monitor compliance with the filterable PM limitation in Condition 2.2.1.

If the PM CEMS is unable to meet the applicable performance requirements, despite the permittee's efforts to repair or replace such technology, the permittee may request that use of the PM CEMS be discontinued. Such requests shall include a justification for discontinuing use of the PM CEMS. Upon written approval from the Division the permittee may discontinue use of the PM CEMS and compliance with the filterable PM limitation in Condition 2.2.1 shall be monitored as specified in Condition 2.2.4.

2.2.5.2 The PM CEMS shall be installed, evaluated, operated, and maintained in accordance with the requirements in Condition 2.14.

2.2.5.3 For any hour in which fuel is combusted in the unit, the permittee shall calculate the hourly average of PM concentration in units of lb/MMBtu in accordance with the requirements in Method 19 in 40 CFR Part 60 Appendix A.

The PM CEMS data shall meet the applicable "primary equipment hourly operating requirements" for hourly average calculation methodology specified in 40 CFR Part 75 Subpart B § 75.10(d).

For PM CEMS data conversions, a 5.0% CO_2 diluent cap shall be used when the measured CO_2 concentration is less than 5.0%.

All valid hours, including hourly emission data generated during startup, shutdown and malfunction shall be used in a 24-hour rolling average to monitor compliance with the filterable PM emission limitation in Condition 2.2.1.

2.2.5.4 Excess emission and monitoring system availability reports shall be submitted quarterly in accordance with the requirements in Condition 8.4.2. Excess emissions are defined as any unit operating hour in which the 24-hour rolling average exceeds the filterable PM limit in Condition 2.2.1.

2.2.6 Compliance with the total PM limitation in Condition 2.2.2 shall be monitored by conducting performance tests as required by Condition 2.17.

2.2.7 Compliance with the annual total PM limitation in condition 2.2.3 shall be monitored by calculating emissions monthly using the total PM emissions factor from the most recent performance test and the monthly quantity of heat input to the boiler in the following equation:

$$\text{Tons/mo} = \frac{[\text{EF (lb/MMBtu) x monthly heat input (MMBtu/mo)}]}{2000 \text{ lb/ton}}$$

The monthly heat input to the boiler shall be determined using the monthly coal consumption and the average heat content of the coal, as determined by the coal sampling required by Condition 2.11. Monthly emissions shall be used in a rolling twelve month total to monitor compliance with the annual limitation. Each month a new twelve month total shall be calculated using the previous twelve months data.

2.3 PM_{10} emissions are subject to the following requirements:

2.3.1 For purposes of BACT filterable PM_{10} emissions shall not exceed 0.0120 lb/MMBtu. (Colorado Construction Permit 04PB1015, as modified under the provisions of Section I, Condition 1.3 to revise the averaging time, in anticipation of the use of a PM CEMS) The averaging time for the filterable PM limits, are as follows:

2.3.1.1 Prior to operation of the PM CEMS, compliance with the BACT limit shall be based on the average of three (3) test runs.

2.3.1.2 Upon operation of the PM CEMS, compliance with the BACT limit shall be based on a 24-hour rolling average.

2.3.2 For purposes of BACT, total (filterable plus condensable) PM_{10} emissions shall not exceed 0.020 lb/MMBtu, based on the average to three (3) test runs. (Colorado Construction Permit 04PB1015)

2.3.3 Annual total (filterable plus condensable) PM_{10} emissions shall not exceed 650 tons/yr. (Colorado Construction Permit 04PB105, as modified under the provisions of Section I, Condition 1.3 to remove the quarterly limits)

Compliance with the PM_{10} limitations shall be monitored as follows:

2.3.4 Compliance with the <u>filterable PM_{10}</u> limitation in Condition 2.3.1 shall, in the absence of credible evidence to the contrary, be presumed provided that the monitoring conducted in accordance with the requirements in Conditions 2.2.4 or 2.2.5, as appropriate, indicates compliance with the emission limitation in Condition 2.2.1.

2.3.5 Compliance with the <u>total PM_{10}</u> limitation in Condition 2.3.2 shall, in the absence of credible evidence to the contrary, be presumed provided that the monitoring conducted in accordance with the requirements in Condition 2.2.6 indicates compliance with the emission limitations in Condition 2.2.2.

2.3.6 Compliance with the annual <u>total PM_{10}</u> limitation in Condition 2.3.3 shall, in the absence of credible evidence to the contrary, be presumed provided that the monitoring conducted in accordance with the requirements in Condition 2.2.7 indicates compliance with the emission limitation in Condition 2.2.3.

2.4 SO_2 emissions are subject to the following requirements:

2.4.1 SO_2 emissions shall not exceed 0.4 lb/MMBtu, on a 3-hr rolling average. (Colorado Regulation No. 1, Section VI.B.4.a.(iii) and VI.B.2 and Colorado Construction Permit 04PB1015)

2.4.2 SO_2 emissions shall not exceed 0.10 lb/MMBtu, on a 30-day rolling average, including emissions from shutdown and malfunction events. The first two hours after coal is first fed to the boiler during a cold startup shall be excluded from the calculation of that day's SO_2 emissions. (Colorado Construction Permit 04PB1015)

2.4.3 On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction after February 28, 2005, shall cause to be discharged into the atmosphere any gases that contain SO_2 in excess of 1.4 lb/MWh gross energy output on a 30-day rolling average bass. (40 CFR Part 60 Subpart Da § 60.43Da(i)(1)(i) and Colorado Construction Permit 04PB1015)

The sulfur dioxide emission standards under §60.43Da apply at all times except during periods of startup, shutdown, or when both emergency conditions exist and the procedures under paragraph (d) of this section are implemented. (40 CFR Part 60 Subpart Da § 60.48Da(c))

During emergency conditions in the principal company, an affected facility with a malfunctioning flue gas desulfurization system may be operated if SO_2 emissions are minimized by following the procedures in § 60.48Da(d)(1) through (3). (40 CFR Part 60 Subpart Da § 60.48Da(d))

2.4.4 Annual SO_2 emissions shall not exceed 3,250 tons/yr. (Colorado Construction Permit 04PB1015, as modified under the provisions of Section I, Condition 1.3 to remove the quarterly limits)

Compliance with the SO_2 limitations shall be monitored using the SO_2 CEMS required by Condition 2.12 as follows:

2.4.5 For purposes of monitoring compliance with the emission limitations in Conditions 2.4.1 and 2.4.2, for any hour in which fuel is combusted in the unit, the permittee shall calculate the hourly average SO_2 concentrations in units of lb/MMBtu in accordance with the requirements in 40 CFR Part 75, except that replaced data shall not be included and the data shall not have been bias-adjusted. Replaced data shall be reported as monitor down time in the quarterly reports required by Condition 8.4. Hourly averages shall be used as follows to monitor compliance with the emission limitations in Conditions 2.4.1 and 2.4.2:

2.4.5.1 All valid hours, including hourly emission data generated during startup, shutdown or malfunction, shall be used in a 3-hour rolling average to

monitor compliance with the emission limitations in Condition 2.4.1.

2.4.5.2 All valid hours, excluding those hours specified in Condition 2.4.2, shall be used to calculate a 30-day rolling average. Compliance with the 30-day rolling average is monitored by calculating the arithmetic average of all hourly emissions rates for the 30 successive boiler operating days, except for those hours specified in Condition 2.4.2. A boiler operating day is any day in which fuel is fired in the unit for any period of time.

2.4.6 Compliance with the emission limitation in Condition 2.4.3 shall be monitored as follows:

2.4.6.1 After the initial performance test required under § 60.8, compliance with the SO_2 emission limitations and percentage reduction requirements under § 60.43Da [Condition 2.4.3] and the NO_X emission limitations under § 60.44Da is based on the average emission rate for 30 successive boiler operating days. A separate performance test is completed at the end of each boiler operating day after the initial performance test, and a new 30 day average emission rate for both SO_2 and NO_X and a new percent reduction for SO_2 are calculated to show compliance with the standards. (40 CFR Part 60 Subpart Da § 60.48Da(f))

Note that this unit is not subject to SO_2 percent reduction requirements.

Performance tests shall use the methods specified in § 60.50a(c)(4) and (5) [use CEMS to determine concentration of SO_2 and CO_2 or O_2 and Method 19 to determine emission rate].

2.4.6.2 Compliance with applicable 30-day rolling average SO_2 and NO_X emission limitations is determined by calculating the arithmetic average of all hourly emission rates for SO_2 and NO_X for the 30 successive boiler operating days, except for data obtained during startup, shutdown, malfunction (NO_X only), or emergency conditions (SO_2 only). (40 CFR Part 60 Subpart Da § 60.48Da(g)(1))

2.4.6.3 If an owner or operator has not obtained the minimum quantity of emission data as required under § 60.49Da of this subpart, compliance of the affected facility with the emission requirements under §§ 60.43Da [Condition 2.4.3] and 60.44Da of this subpart for the day on which the 30-day period ends may be determined by the Administrator by following the applicable procedures in section 7 of Method 19 of appendix A of this part. (40 CFR Part 60 Subpart Da § 60.48Da(h))

2.4.6.4 The owner or operator of an affected facility subject to §60.43Da(i)(1)(i) [Condition 2.4.3], (i)(2)(i), (i)(3)(i), (j)(1)(i), (j)(2)(i), or (j)(3)(i) shall calculate SO_2 emissions as 1.660×10^{-7} lb/scf-ppm times the average hourly SO_2 output concentration in ppm (measured according to the provisions of §60.49Da(b) [Condition 8.5.1]), times the average hourly flow rate (measured according to the provisions of § 60.49Da(l) or

§60.49Da(m) [Condition 8.5.9]), divided by the average hourly gross energy output (measured according to the provisions of § 60.49Da(k) [Condition 8.5.8]).

2.4.7 For purposes of monitoring compliance with the annual emission limitation in Condition 2.4.4, for any hour in which fuel is combusted in the unit, the permittee shall program the DAHS to calculate lb/hr SO_2 emissions in accordance with the requirements in Condition 8.1.7.2 of this permit and the requirements in 40 CFR Part 75, including any replaced data and data shall be bias-adjusted, if warranted.

Specifically hourly mass SO_2 emissions (in lbs/hr) shall be determined by taking the hourly Part 75 SO_2 ppm value (which includes replaced or bias-adjusted data, as applicable), multiplying it by the hourly Part 75 stack flow rate (which includes replaced or bias-adjusted data, as applicable) and then multiplying it by the applicable conversions factor. The resulting SO_2 lb/hr value (which is calculated using equation F-2 in Appendix F of 40 CFR Part 75) is then multiplied by the unit operating time for that hour to produce a SO_2 lbs value. Hourly SO_2 mass emissions (lbs) shall be summed and divided by 2000 lbs/ton to determine monthly SO_2 emissions (in tons).

Monthly emissions shall be used in a rolling twelve month total to monitor compliance with the annual limitation. Each month a new twelve month total shall be calculated using the previous twelve months data.

2.5 NO_X emissions are subject to the following requirements:

2.5.1 NO_X emissions shall not exceed 0.08 lb/MMBtu on a 30 day rolling average. (Colorado Construction Permit 04PB1015)

2.5.2 NO_X emissions shall not exceed 0.07 lb/MMBtu on an annual (daily) rolling average (Colorado Construction Permit -4PB1015)

2.5.3 During cold startups, the following shall be excluded from the calculation of that day's NO_X emissions for purposes of monitoring compliance with the limitations in Conditions 2.5.1 and 2.5.2 (Colorado Construction Permit 04PB1015)

2.5.3.1 The first two hours when natural gas–fired igniters are in use, and

2.5.3.2 The first four hours after coal is first fed to the boiler.

2.5.4 On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction after February 28, 2005, shall cause to be discharged into the atmosphere any gases that contain NO_X in excess of 1.0 lb/MWh gross energy output on a 30-day rolling average bass. (40 CFR Part 60 Subpart Da § 60.44Da(e)(1) and Colorado Construction Permit 04PB1015)

The NO_X emission standards under § 60.44Da apply at all times except during periods of startup, shutdown or malfunction. (40 CFR Part 60 Subpart Da § 60.44Da(c))

2.5.5 Annual NO_X emissions shall not exceed 2,600 tons/yr. (Colorado Construction Permit 04PB1015, as modified under the provisions of Section I, Condition 1.3 to remove the quarterly limits)

Compliance with the NO_X limitations shall be monitored using the NO_X CEMS required by Condition 2.12 as follows:

2.5.6 For purposes of monitoring compliance with the emission limitations in Conditions 2.5.1 and 2.5.2, for any hour in which fuel is combusted in the unit, the permittee shall calculate the hourly average NO_X concentrations in units of lb/MMBtu in accordance with the requirements in 40 CFR Part 75, except that replaced data shall not be included and the data shall not have been bias-adjusted. Replaced data shall be reported as monitor down time in the quarterly reports required by Condition 8.4. Hourly averages shall be used as follows to monitor compliance with the emission limitations in Conditions 2.5.1 and 2.5.2:

2.5.6.1 All valid hours, excluding those hours specified in Condition 2.5.3, shall be used to calculate a 30-day rolling average. Compliance with the 30-day rolling average is monitored by calculating the arithmetic average of all hourly emissions rates for the 30 successive boiler operating days, except for those hours specified in Condition 2.5.3. A boiler operating day is any day in which fuel is fired in the unit for any period of time.

2.5.6.2 All valid hours, excluding those hours specified in Condition 2.5.3, shall be used to calculate a 365-day rolling average. Compliance with the 365-day rolling average is monitored by calculating the arithmetic average of all hourly emissions rates for the 365 successive boiler operating days, except for those hours specified in Condition 2.5.3. A boiler operating day is any day in which fuel is fired in the unit for any period of time.

2.5.7 Compliance with the emission limitation in Condition 2.5.4, shall be monitored as follows:

2.5.7.1 After the initial performance test required under § 60.8, compliance with the SO_2 emission limitations and percentage reduction requirements under § 60.43Da and the NO_X emission limitations under § 60.44Da [Condition 2.5.4] is based on the average emission rate for 30 successive boiler operating days. A separate performance test is completed at the end of each boiler operating day after the initial performance test, and a new 30 day average emission rate for both SO_2 and NO_X and a new percent reduction for SO_2 are calculated to show compliance with the standards. (40 CFR Part 60 Subpart Da § 60.48Da(f)) Performance tests shall use the

methods specified in § 60.50a(d) [use CEMS to determined concentration of NO_X and CO_2 or O_2 and Method 19 to determine emission rate].

2.5.7.2 Compliance with applicable 30-day rolling average SO_2 and NO_X emission limitations is determined by calculating the arithmetic average of all hourly emission rates for SO_2 and NO_X for the 30 successive boiler operating days, except for data obtained during startup, shutdown, malfunction (NO_X only), or emergency conditions (SO_2 only). (40 CFR Part 60 Subpart Da § 60.48Da(g)(1))

2.5.7.3 If an owner or operator has not obtained the minimum quantity of emission data as required under § 60.49Da of this subpart, compliance of the affected facility with the emission requirements under §§ 60.43Da and 60.44Da [Condition 2.5.4] of this subpart for the day on which the 30-day period ends may be determined by the Administrator by following the applicable procedures in section 7 of Method 19 of appendix A of this part. (40 CFR Part 60 Subpart Da § 60.48Da(h))

2.5.7.4 The owner or operator of an affected facility subject to § 60.44Da(d)(1), (e)(1) [Condition 2.5.4], (e)(2)(i), (e)(3)(i), or (f) shall calculate NO_X emissions as 1.194×10^{-7} lb/scf-ppm times the average hourly NO_X output concentration in ppm (measured according to the provisions of § 60.49Da(c) [Condition 8.5.2]), times the average hourly flow rate (measured in scfh, according to the provisions of § 60.49Da(l) or § 60.49Da(m) [Condition 8.5.9]), divided by the average hourly gross energy output (measured according to the provisions of § 60.49Da(k) [Condition 8.5.8]). (40 CFR Part 60 Subpart Da § 60.48Da(i))

2.5.8 For purposes of monitoring compliance with the annual emission limitation in Condition 2.5.5, for any hour in which fuel is combusted in the unit, the permittee shall program the DAHS to calculate lb/hr NO_X emissions in accordance with the requirements in Condition 8.1.7.2 of this permit and 40 CFR Part 75, including any replaced data and the data shall be bias-adjusted, if warranted.

Specifically hourly mass NO_X emissions (in lb/hr) shall be calculated by multiplying the hourly Part 75 NO_X lb/MMBtu value (which includes replaced or bias-adjusted data, as applicable) by the hourly heat input value (MMBtu/hr) (which includes replaced and bias-adjusted data from the stack flow and % CO_2 measurements, as applicable). The hourly NO_X lb/MMBtu and heat input values are determined using equations F-6 and F-16 in Appendix F of 40 CFR Part 75. The resulting NO_X lb/hr value is then multiplied by the unit operating time for that hour to produce a NO_X lbs value. Hourly NO_X mass emissions (lbs) shall be summed and divided by 2000 lbs/ton to determine monthly NO_X emissions (in tons).

Monthly emissions shall be used in a rolling twelve month total to monitor compliance with the annual limitation. Each month a new twelve month total shall be calculated using the previous twelve months data.

2.6 CO emissions are subject to the following requirements:

2.6.1 For purposes of BACT, CO emissions shall not exceed the following limitations:

2.6.1.1 Except as provided for in Condition 2.6.1.2, CO emissions shall not exceed 0.13 lb/MMBtu, on an 8-hour rolling average. (Colorado Construction Permit 04PB1015)

2.6.1.2 During periods of startup, CO emissions shall not exceed 0.30 lb/MMBtu, as averaged over the startup period or as an 8-hr rolling average, whichever is shorter. (Colorado Construction Permit 04PB1015)

2.6.1.3 "Startup" means the setting in operation of any air pollution source for any purpose. Setting in operation for this unit begins when fuel if first fired in the boiler and ends when the minimum stable operation load is achieved. The minimum stable operating load means operation at or above 340 gross MW.

2.6.2 Annual CO emissions shall not exceed 4,225 tons/yr. (Colorado Construction Permit 04PB1015)

Compliance with the CO emissions limitations shall be monitored using the CO CEMS required by Condition 2.12, as follows:

2.6.3 Except as provided for in Condition 2.6.4, all valid CEMS data points, excluding startup data points shall, at the end of each clock hour be summarized to generate the average CO concentration, in lb/MMBtu. All valid hours shall be used in an 8-hour rolling average to monitor compliance with the emission limitation in Condition 2.6.1.1.

2.6.4 All valid CEMS data points within the startup event shall be averaged together to generate the average CO concentration, in lb/MMBtu for the startup event to monitor compliance with the emission limitation in Condition 2.6.1.2.

If the start-up event lasts for more than 8 hours, all valid CEMS startup data points shall, at the end of each clock hour be summarized to generate the average CO concentration, in lb/MMBtu. All valid hours shall be used in an 8-hr rolling average to monitor compliance with the emission limitation in Condition 2.6.1.2.

In the event that the startup ends within a clock hour, all valid non-startup data points within that clock hour shall be averaged together to generate the average CO concentration, in lb/MMBtu and that average concentration shall be included in the 8-hour rolling average to monitor compliance with the emission limitation in Condition 2.6.1.1.

2.6.5 For purposes of monitoring compliance with the annual limitation in Condition 2.6.2, for any hour in which fuel is combusted in the unit, the permittee shall program the

DAHS to calculate lb/hr CO emissions in accordance with the requirements in Condition 8.1.7.2 of this permit and 40 CFR Part 75, including any replaced data and the data shall be bias-adjusted, if warranted.

Specifically hourly mass CO emissions (in lb/hr) shall be calculated by multiplying the hourly CO lb/MMBtu value (which includes replaced data in accordance with the provisions in Part 75 for NO_X replacement, as applicable) by the hourly heat input value (MMBtu/hr) (which includes replaced and bias-adjusted data from the stack flow and % CO_2 measurements, as applicable). The hourly CO lb/MMBtu and heat input values are determined using equations F-6 (for NO_X) and F-16 in Appendix F of 40 CFR Part 75. The resulting CO lb/hr value is then multiplied by the unit operating time for that hour to produce a CO lbs value. Hourly CO mass emissions (lbs) shall be summed and divided by 2000 lbs/ton to determine monthly CO emissions (in tons).

Monthly emissions shall be used in a twelve month rolling total to monitor compliance with the annual limitations. Each month, a new twelve month total shall be calculated using the previous twelve months data.

2.6.6 Replaced data (as required by Condition 8.3.1) shall not be used in monitoring compliance with the short-term emission limitations in Condition 2.6.1 but shall be used to monitor compliance with the annual limitation in Condition 2.6.2.

2.7 VOC emissions are subject to the following requirements:

2.7.1 For purposes of BACT, VOC emissions shall not exceed 0.0035 lb/MMBtu, based on the average of three (3) test runs. (Colorado Construction Permit 04PB1015) Compliance with the VOC BACT limit shall be monitored by conducting performance tests as required by Condition 2.17.

2.7.2 Annual VOC emissions shall not exceed 114 tons/yr. (Colorado Construction Permit 04PB1015) Compliance with the annual limitation shall be monitored by calculating emissions monthly using the VOC emission factor from the most recent performance test and the monthly quantity of heat input to the boiler in the following equation:

$$\text{Tons/mo} = \frac{[\text{EF (lb/MMBtu) x monthly heat input (MMBtu/mo)}]}{\text{2000 lb/ton}}$$

The monthly heat input to the boiler shall be determined using the monthly coal consumption and the average heat content of the coal, as determined by the coal sampling required by Condition 2.11. Monthly emissions shall be used in a rolling twelve month total to monitor compliance with the annual limitation. Each month a new twelve month total shall be calculated using the previous twelve months data.

2.8 Acid Gas emissions are subject to the following requirements:

2.8.1 H_2SO_4 emissions are subject to the following requirements:

2.8.1.1 For purposes of BACT H_2SO_4 emissions shall not exceed 0.0034 lb/MMBtu, based on the average of three (3) test runs. (Colorado Construction Permit 04PB1015, as modified under the provisions of Section I, Condition 1.3 to reduce H_2SO_4 limit as specified in 04PB1015 since initial testing indicated that the lower limit is achievable)

2.8.1.2 Annual H_2SO_4 emissions shall not exceed 136.5 tons/yr. (Colorado Construction Permit 04PB1015)

2.8.2 HF emissions are subject to the following requirements:

2.8.2.1 For purposes of BACT, HF emissions shall not exceed 0.00049 lb/MMBtu, based on the average of three (3) test runs. (Colorado Construction Permit 04PB1015)

2.8.2.2 Annual HF emissions shall not exceed 15.9 tons/yr (Colorado Construction Permit 04PB1015, as modified under the provisions of Section I, Condition 1.3 to remove the quarterly limits)

2.8.3 HCl emissions shall not exceed 0.00064 lb/MMBtu, based on the average of three (3) test runs. (Colorado Construction Permit 04PB1015)

Compliance with the Acid Gas emission limitations shall be monitored as follows:

2.8.4 Compliance with the short term emission limitations in Conditions 2.8.1.1, 2.8.2.1 and 2.8.3 shall be monitored by conducting performance tests as required by Condition 2.17.

2.8.5 Compliance with the annual limitations in Conditions 2.8.1.2 and 2.8.2.2 shall be monitored by calculating emissions monthly using the emissions factors from the most recent performance tests and the monthly quantity of heat input to the boiler in the following equation:

$$\text{Tons/mo} = \frac{[\text{EF (lb/MMBtu) x monthly heat input (MMBtu/mo)}]}{\text{2000 lb/ton}}$$

The monthly heat input to the boiler shall be determined using the monthly coal consumption and the average heat content of the coal, as determined by the coal sampling required by Condition 2.11. Monthly emissions shall be used in a rolling twelve month total to monitor compliance with the annual limitation. Each month a new twelve month total shall be calculated using the previous twelve months data.

2.9 For purposes of APEN reporting and payment of fees, annual emissions of lead shall be calculated as required by Condition 10.

2.10 Fuel usage shall not exceed the following limitations. (Colorado Construction Permit 04PB1015, as modified under the provisions of Section I, Condition 1.3 to remove the quarterly limitations)

2.10.1 Coal consumption shall not exceed 3,963,900 tons/yr.

2.10.2 Natural gas consumption shall not exceed 1,445 MMscf/yr.

Fuel usage shall be monitored and recorded monthly using belt scales, fuel meters and corporate records, as necessary. Monthly fuel usage shall be used in twelve month rolling totals to monitor compliance with the annual limitations. Each month new twelve month totals shall be calculated using the previous twelve months data.

2.11 Coal shall be sampled in accordance with the requirements identified in Condition 11. Vendor sample results from all coal shipment shall be used to determine the average heat, sulfur, ash and moisture content of the fuel used in monitoring compliance with permit conditions.

2.12 The source shall install, certify and operate CEMS for measuring opacity, CO, SO_2, NO_X (including diluents gas either CO_2 or O_2) and volumetric flow. (40 CFR Parts 60 and 75 and Colorado Construction Permit 04PB1015) The CEMS shall meet the requirements in Condition 8.

2.13 This unit is subject to the requirements in 40 CFR Part 60 Subpart A – General Provisions, as adopted by reference in Colorado Regulation No. 6, Part A. Specifically, this unit is subject to the requirements in Condition 6.

2.14 Within one (1) year of renewal permit issuance [June 1, 2012], the permittee shall install, certify and operate a PM CEMS. The PM CEMS shall be installed, certified, operated and maintained in accordance with the following requirements:

2.14.1 The PM CEMS shall be operated and maintained in accordance with the requirements in 40 CFR Part 60 § 60.13(e).

2.14.2 The permittee shall check the zero and span drifts at least once per day in accordance with the requirements in 40 CFR Part 60 § 60.13(d)(1).

2.14.3 The permittee shall conduct a performance evaluation of the CEMS according to the applicable requirements of § 60.13, Performance Specification 11 in 40 CFR Part 60, Appendix B, and procedure 2 in 40 CFR Part 60, Appendix F.

2.14.4 During each PM correlation testing run of the CEMS required by Performance Specification 11 in 40 CFR Part 60, Appendix B, PM and O_2 (or CO_2) data shall be collected concurrently (or within a 30- to 60-minute period) by both the CEMS and performance tests conducted using Method 5.

2.14.5 Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with procedure 2 in 40 CFR Part 60, Appendix F. Relative Response

Audit's must be performed annually and Response Correlation Audits must be performed every 3 years.

2.15 This unit is subject to case-by-case MACT requirements specified in 40 CFR Part 63 §§ 63.40 thru 63.44 (112(g) requirements), as adopted by reference in Colorado Regulation No. 8, Part E, Section I. Specifically this unit is subject to the following requirements:

Control Requirements and Emission Limitations

2.15.1 **Mercury Emissions:** Sorbent injection, along with the co-benefit control devices (lime spray dryer, baghouse and SCR) shall be used to limit mercury emissions to 14.7×10^{-6} lb/MWh (0.0147 lb/GWh), on a rolling twelve month bases based on gross energy output. (Colorado Construction Permit 04PB1015)

2.15.2 **Non-Mercury Metal HAPs:** A baghouse, with potential co-benefits from the lime spray dryer, shall be used to limit total PM_{10} to 0.020 lb/MMBtu, based on the average of three (3) test run. (Colorado Construction Permit 04PB1015)

2.15.3 **Acid Gas HAPs:** A lime spray dryer followed by a baghouse shall be used to limit HF to 4.0×10^{-4} lb/MMBtu and HCl to 6.2×10^{-4} lb/MMBtu, both based on the average of three (3) test runs. (Colorado Construction Permit 04PB1015)

2.15.4 **Organic HAPs:** Good combustion practice shall be used to limit VOC emissions to 0.0034 lb/MMBtu and a baghouse, with potential co-benefits from the lime spray dryer, shall be used to limit total PM_{10} to 0.020 lb/MMBtu, based on the average of three (3) test run. (Colorado Construction Permit 04PB1015)

Monitoring, Recordkeeping and Reporting Requirements

2.15.5 Compliance with the mercury limitations shall be monitored as follows (Colorado Construction Permit 04PB1015):

2.15.5.1 A mercury continuous emission monitoring system (or sorbent trap monitoring system) shall be installed and operated in accordance with the requirements in 40 CFR Part 60 Appendix B, Performance Specification 12A and 40 CFR Part 63, Subpart UUUUU.

2.15.5.2 The permittee shall submit written quarterly reports to the Division within 30 days of the end of each calendar quarter that include the following information:

a. Mercury emissions, in lb/MWh;

b. The three (3) rolling twelve month averages for each calendar month in that calendar quarter, in lb/MWh;

c. Unit operating hours for that quarter; and

d. Total and percentage of monitoring system downtime for that quarter.

2.15.6 Compliance with the total PM_{10} limit shall be monitored as follows (Colorado Construction Permit 04PB015, as modified under the provisions of Section I, Condition 1.3 to rely on CAM for proper operation of the baghouse):

2.15.6.1 Performance tests shall be conducted as required by Condition 2.17.

2.15.6.2 The baghouse shall be operated and maintained in accordance with the requirements in Condition 7.1.1. The monitoring and reporting required for CAM (Conditions 2.20, 13.2 and 13.6) shall be used to assess proper operation of the baghouse.

2.15.7 Compliance with the Acid Gas limits shall be monitored as follows (Colorado Construction Permit 04PB015, as modified under the provisions of Section I, Condition 1.3 to rely on CAM for proper operation of the lime spray dryer):

2.15.7.1 Performance tests shall be conducted as required by Condition 2.17.

2.15.7.2 The lime spray dryer shall be operated and maintained in accordance with the manufacturer's recommendations and good engineering practices. The monitoring and reporting required for CAM (Conditions 2.20, 13.4 and 13.6) shall be used to assess the proper operation of the lime spray dryer.

2.15.8 Compliance with the VOC limit shall be monitored as follows (Colorado Construction Permit 04PB1015):

2.15.8.1 Performance tests shall be conducted as required by Condition 2.17.

2.15.8.2 Quarterly reports submitted as required by Condition 8.4, with respect to the CO BACT limits (Condition 2.6.1) shall be used to assess whether good combustion practices are being utilized to reduce VOC emissions.

<u>Status of Case-By-Case 112(g) MACT Limits Upon EPA Promulgation of Emission Limitations Under Section 112(d)</u>

2.15.9 If the Administrator promulgates an emission standard under section 112(d) or section 112(h) of the Act or the permitting authority makes a determination under section 112(j) of the Act that is applicable to a stationary source or group of sources which was deemed to be a constructed or reconstructed major source under this subpart and has been subject to a prior case-by-case MACT determination pursuant to § 63.43, and the owner and operator obtained a final and legally effective case-by-case MACT determination prior to the promulgation date of such emission standard, then the permitting authority shall (if the initial title V permit has not yet been issued) issue an initial operating permit which incorporates the emission standard or determination, or shall (if the initial title V permit has been issued) revise the operating permit according to the reopening procedures in 40 CFR part 70 or part 71, whichever is relevant, to incorporate the emission standard or determination. (40 CFR

Part 63 Subpart B § 63.44(b), as adopted by reference in Colorado Regulation No. 8, Part E, Section V)

2.15.9.1 The EPA may include in the emission standard established under section 112(d) or section 112(h) of the Act a specific compliance date for those sources which have obtained a final and legally effective MACT determination under this subpart and which have submitted the information required by §63.43 to the EPA before the close of the public comment period for the standard established under section 112(d) of the Act. Such date shall assure that the owner or operator shall comply with the promulgated standard as expeditiously as practicable, but not longer than 8 years after such standard is promulgated. In that event, the permitting authority shall incorporate the applicable compliance date in the title V operating permit. (40 CFR Part 63 Subpart B § 63.44(b)(1), as adopted by reference in Colorado Regulation No. 8, Part E, Section V)

2.15.9.2 If no compliance date has been established in the promulgated 112(d) or 112(h) standard or section 112(j) determination, for those sources which have obtained a final and legally effective MACT determination under this subpart, then the permitting authority shall establish a compliance date in the permit that assures that the owner or operator shall comply with the promulgated standard or determination as expeditiously as practicable, but not longer than 8 years after such standard is promulgated or a section 112(j) determination is made. (40 CFR Part 63 Subpart B § 63.44(b)(2), as adopted by reference in Colorado Regulation No. 8, Part E, Section V)

2.15.10 Notwithstanding the requirements of paragraphs (a) and (b) of this section, if the Administrator promulgates an emission standard under section 112(d) or section 112(h) of the Act or the permitting authority issues a determination under section 112(j) of the Act that is applicable to a stationary source or group of sources which was deemed to be a constructed or reconstructed major source under this subpart and which is the subject of a prior case-by-case MACT determination pursuant to § 63.43, and the level of control required by the emission standard issued under section 112(d) or section 112(h) or the determination issued under section 112(j) is less stringent than the level of control required by any emission limitation or standard in the prior MACT determination, the permitting authority is not required to incorporate any less stringent terms of the promulgated standard in the title V operating permit applicable to such source(s) and may in its discretion consider any more stringent provisions of the prior MACT determination to be applicable legal requirements when issuing or revising such an operating permit. (40 CFR Part 63 Subpart B § 63.44(c), as adopted by reference in Colorado Regulation No. 8, Part E, Section V)

In the event that EPA promulgates requirements for coal-fired electric utility steam generating units under 40 CFR Part 63 Subpart UUUUU that are less stringent than the case-by-case 112(g) MACT emission limitations included in Conditions 2.15.1

through 2.15.4, then upon the compliance date for the EPA-promulgated standard, the relevant emission limitations in Conditions 2.15.1 through 2.15.4 no longer apply.

In addition, if EPA does not promulgate an emission limitation for a pollutant or surrogate pollutant for which a case-by-case MACT 112(g) limit was set in Conditions 2.15.1 through 2.15.4, then upon the compliance date for the EPA promulgated requirements, the relevant emission limitations in Conditions 2.15.1 through 2.15.4 no longer apply.

2.16 Compliance with the opacity standards shall be monitored in accordance with the requirements in Condition 9.4.

2.17 Performance tests shall be performed for total (filterable plus condensable) PM/PM_{10}, HCl, HF, H_2SO_4 and VOC annually, in accordance with the requirements and procedures set forth in the appropriate EPA Test Methods as set forth in 40 CFR Part 60, Appendix A. Frequency of testing shall be annual, except that: (1) if the first annual test or any subsequent test results indicate emissions are less than or equal to 50% of the emission limit, another test is required within five years; (2) if the first annual or any subsequent test results indicate emissions are more than 50%, but less than or equal to 75% of the emission limit, another test is required within three years; (3) if the first annual or any subsequent test results indicate emissions are greater than 75% of the emission limit, an annual test is required until the provisions of (1) or (2) are met.

Notwithstanding the requirement to use the appropriate EPA Test Methods, other established test methods or refinements or adaptations to EPA Test Methods may be used for testing, if approved by the Division in advance.

Note that the performance tests were conducted in May 2010 and May 2011. The results of the stack tests are as follows:

Pollutant	Emissions (lb/MMBtu)			Next Test Required[2]
	Emission Limitation[1]	May 2010 Test	May 2011 Test	
Total (filterable and condensable) PM/PM_{10}	0.020	0.0059	0.0199	1 year
VOC	0.0034	0.00315	8.29×10^{-4}	5 years
H_2SO_4	0.0034	8.23×10^{-5}	8.55×10^{-5}	5 years
HCl	6.2×10^{-4}	5.66×10^{-6}	1.28×10^{-5}	5 years
HF	4.0×10^{-4}	2.76×10^{-6}	1.92×10^{-5}	5 years

[1]Emission limitation listed is the most conservative limit. For HCl and HF these are the case-by-case MACT limits in Condition 2.15.3. For VOC this is the case-by-case MACT limit (VOC is a surrogate for organic HAPs) in Condition 2.15.4.
[2]Next required test is based on the results of the May 2011 test.

A stack testing protocol shall be submitted for Division approval at least thirty (30) calendar days prior to any performance of the test required under this condition. No stack test required herein shall be performed without prior written approval of the protocol by the Division. The

Division reserves the right to witness the test. In order to facilitate the Division's ability to make plans to witness the test, notice of the date (s) for the stack test shall be submitted to the Division at least thirty (30) calendar days prior to the test. The Division may for good cause shown, waive this thirty (30) day notice requirement. In instances when a scheduling conflict is presented, the Division shall immediately contact the permittee in order to explore the possibility of making modifications to the stack test schedule. The required number of copies of the compliance test results shall be submitted to the Division within forty-five (45) calendar days of the completion of the test unless a longer period is approved by the Division.

2.18 Post-construction monitoring is required for particulate matter less than 10 microns and ozone. Post-construction ambient monitoring shall be conducted for a minimum of twelve (12) months and shall begin within three (3) months, or within another period approved in writing by the Division, after commencement of operation of Unit 3. Additional post-construction monitoring beyond the twelve (12) month period may be necessary to determine the effect emissions from the modification have, or may have, on air quality in any area. With the submittal of data for the minimum twelve (12) month period, the permittee may request that further monitoring be waived. The Division will consider such request in the context of the data for the aforementioned purposes of post-construction monitoring, and if appropriate grant such a waiver. Locations of monitoring stations and procedures for data collection, compilation and reporting shall be submitted to, and approved by, the Division.

2.19 This unit is subject to the Title IV Acid Rain Requirements. As specified in 40 CFR Part 72.72(b)(1)(viii), the acid rain permit requirements shall be a complete and segregable portion of the Operating Permit. As such the requirements are found in Section III of this permit.

2.20 This unit subject to the Compliance Assurance Monitoring (CAM) requirements with respect to the filterable PM and PM_{10} limitations in Conditions 2.2.1 and 2.3.1, the SO_2 emission limitations in Conditions 2.4.1, 2.4.2 and 2.4.4, the NO_X emission limitations in Conditions 2.5.1, 2.5.2 and 2.5.5, and the acid gas emission limitations in Conditions 2.8 and 2.15.3. Compliance with the CAM requirements shall be monitored in accordance with the requirements in Condition 13 and the CAM Plans in Appendices G (for filterable PM/PM_{10}) and H (for acid gases).

2.21 Mercury emissions **from Units 1, 2 and 3 together** shall not exceed 0.0130 lb/GWh on rolling annual average. (Colorado Regulation No. 3, Part B, Section II.A.4, in accordance with the December 3, 2004 Settlement Agreement between PSCo and Concerned Environmental Community Parties (CECP), paragraph 7.F) Compliance with the plant wide Hg limit shall be monitored as required by Condition 1.20.

2.22 This unit is subject to the requirements in 40 CFR Part 63 Subpart UUUUU, "National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-fired Electric Utility Steam Generating Units". Within one (1) year of the compliance date for these requirements, the permittee shall submit an application to modify this permit to incorporate the specific emission limitations and compliance monitoring methods the source has chosen in order to comply with these requirements.

3. Coal Storage and Handling: F001 – Fugitive Coal Handling and Storage, P003, P004 and P006 – Units 1, 2 and 3 Coal Handling Systems (Conveying and Crushing)

P003 – Unit 1 Coal Handling (Crushing and Conveying from Pile to Unit)

Parameter	Permit Condition Number	Limitations		Compliance Emission Factor	Monitoring	
		Short Term	Long Term		Method	Interval
PM and PM_{10}	3.1	N/A	N/A	See Condition 3.1	Recordkeeping and Calculation	Annually
Coal Handled	3.5	N/A	N/A	N/A	Recordkeeping	Monthly
Opacity	3.6	Not to Exceed 20%		N/A	See Condition 3.6	

P004 – Unit 2 Coal Handling (Crushing and Conveying from Pile to Unit, Conveying from Unloading Hopper to Lowering Well)

Parameter	Permit Condition Number	Limitations		Compliance Emission Factor	Monitoring	
		Short Term	Long Term		Method	Interval
PM	3.2	N/A	1.90 tons/yr	See Condition 3.3	Recordkeeping and Calculation	Monthly
PM_{10}		N/A	0.58 tons/yr			
Coal Handled	3.5	N/A	1,857,120 tons/yr	N/A	Recordkeeping	Monthly
Opacity	3.6	Not to Exceed 20%		N/A	See Condition 3.6	

P006 – Unit 3 Coal Handling (Crushing and Conveying from Pile to Unit)

Parameter	Permit Condition Number	Limitations		Compliance Emission Factor	Monitoring	
		Short Term	Long Term		Method	Interval
BACT Requirements	3.3	N/A	N/A	N/A	See Condition 3.2	
PM	3.4	Baghouse: 0.01 gr/dscf	14.09 tons/yr	See Condition 3.3	Recordkeeping and Calculation	Monthly
PM_{10}			13.80 tons/yr			
Coal Handled	3.5	N/A	3,963,900 tons/yr	N/A	Certification	Semi-Annually
Opacity	3.6	Not to Exceed 20%		N/A	See Condition 3.6	
NSPS Subparts A and Y	3.7	Opacity emissions Not to Exceed 20%		N/A	See Condition 3.7	

F001 - Coal Handling and Storage – Fugitive Sources (Rail Car Unloading, Load-Out to Piles and Storage Piles)

Parameter	Permit Condition Number	Limitations		Compliance Emission Factor	Monitoring	
		Short Term	Long Term		Method	Interval
PM	3.2	N/A	25.2 tons/yr	See Condition 3.3	Recordkeeping and Calculation	Monthly
PM_{10}		N/A	6.6 tons/yr			
BACT Requirements	3.3	N/A	N/A	N/A	See Condition 3.3	
Coal Unloaded	3.5	N/A	8,092,050 tons/yr	N/A	Certification	Semi-Annually
Use of Rail Car Rotary Dumper	3.8	The Rotary Dumper May be Used when the Bottom Dumper is Not Operational or Coal is Frozen in the Railcars At No Time Shall the Rotary Dumper Be Used Simultaneously with the Bottom Dumper		N/A	Recordkeeping	Per Use
Fugitive Particulate Matter Control Plan	3.9	N/A	N/A	N/A	See Condition 3.9	
Coal Pile Maintenance and Unit 3 Coal Handling System Hours of Operation	3.10	N/A	N/A	N/A	Recordkeeping	Monthly

3.1 For the purposes of APEN reporting and payment of annual fees, annual emissions of PM and PM_{10} from the **Unit 1 coal handling system** shall be determined using the equations below, the annual quantity of coal handled (as required by Condition 3.5) and the annual average moisture content of the coal (as required by Condition 1.8).

Coal Handling emissions = coal conveying + coal crushing

$$\text{Coal Conveying} = \frac{[E\ (\text{lb/ton}) \times D \times \text{annual coal handled (tons/yr)}]}{2000\ \text{lb/ton}}$$

$$E\ (\text{lb/ton}) = \frac{k \times 0.0032 \times (U/5)^{1.3}}{(M/2)^{1.4}}$$

Where: E = Emission factor (lb/ton) E is Equation 1 from AP-42, Section 13.2.4 (dated 11/06)
k = particle size multiplier (dimensionless)
k = 0.74 for PM (<30 µm)
k = 0.35 for PM_{10}
U = wind speed (mph), use 1 mph for enclosed transfers, 8.2 mph for uncovered transfers – for uncovered transfers credit may be taken for any control devices
M = moisture content of the coal (%), to be determined by coal sampling required by Condition 1.8.

D = number of transfer points (dimensionless). There are 3 transfer points in the Unit 1 system, 1 is enclosed and 2 are controlled by a dust collector. A control efficiency of 99.9% may be applied if the dust collector is operated and maintained in accordance with the requirements in Condition 7.1.2.

$$\text{Coal Crushing} = \frac{[\text{EF (lb/ton) x annual coal crushed (tons/yr)}]}{2000 \text{ lb/ton}}$$

Where: PM EF = 0.02 lb/ton, PM_{10} EF = 0.006 lb/ton, from EPA's WebFIRE, SCC 3-05-010-10

Note that a control efficiency of 90% may be applied to the emission calculations for the crusher provided the integrity of the crusher enclosure is maintained.

3.2 Emissions of PM and PM_{10} **from the Unit 2 coal handling system and fugitive coal handling and storage sources** shall not exceed the limitations listed in the above table (Colorado Construction Permit 04PB1017, as modified under the provisions of Section I, Condition 1.3 to remove the monthly limitations). Compliance with the emission limitations shall be monitored as follows:

3.2.1 For the **Unit 2 coal handling system** compliance with the emission limitations shall be monitored by calculating emissions monthly using the equations specified in Condition 3.1, the monthly quantity of coal handled (as required by Condition 3.5) and the monthly average moisture content of the coal (as required by Condition 1.8). For purposes of calculating emissions from coal conveying there are 4 transfer points in the Unit 2 coal handling system. Two transfer points are enclosed and two are controlled by a dust collector. A control efficiency of 99.9% may be applied if the dust collector is operated and maintained in accordance with the requirements in Condition 7.1.2. Monthly emissions shall be used in a rolling twelve month total to monitor compliance with the annual limitations. Each month a new twelve month rolling total shall be calculated using the previous twelve months data.

3.2.2 For the **fugitive coal handling and storage sources** compliance with the emission limitations shall be monitored by calculating emissions monthly using the equations specified below, the monthly quantity of coal handled (as required by Condition 3.5) or monthly hours of coal pile maintenance (as required by Condition 3.10), the monthly average moisture content of the coal (as required by Conditions 1.8 and 2.11) and other parameters as specified in the equations below.

Fugitive coal handling = transfers + wind erosion + pile maintenance

Emissions from transfers shall be calculated using the equation in Condition 3.1. There are 3 unenclosed transfer points (unload from rail cars, off load via lowering well to Units 1 & 2 pile and off load via lowering well to Unit 3 pile). A control efficiency of 70% may be used for the rail car transfer for partial enclosures and use of dust suppressants. A control efficiency of 50% may be used for the off-load to pile transfers for the use of water sprays.

$$\text{Wind erosion} = \frac{[\text{E (lb/day/acre) x days in the month (days/mo) x pile size (acre)}]}{2000 \text{ lb/ton}}$$

$$E \text{ (lb/day/acre)} = 1.7 \times (s/1.5) \times [(365-p)/235] \times (f/15)$$

Where: E = emission factor (lb/day/acre). E is from "Control of Open Fugitive Dust Sources", EPA-450/3-98-008**,** dated September 1998, Section 4.1.3.

s = silt content of material (%) = 2.2%. From AP-42, Section 13.2 (dated 11/06), Table 13.2.4-1, coal as received from coal-fired power plant.

p = number of days with > 0.01 inches of precipitation per year. Per AP-42, Section 13.2 (dated 11/06), Table 13.2.2, p = 80.

f = percentage of time that wind speed exceeds 5.4 m/s at mean pile height. f = 22.2% per data from Pueblo Airport 10 meter – 1985 – 1986.

pile size: Units 1 and 2 pile: 2 acres for inactive pile and 6 acres for active pile. Unit 3 pile: 2 acres for inactive pile and 6 acres for active pile.

A control efficiency of 50% may be used for use of water sprays to reduce emissions at the storage piles.

$$\text{Coal pile maintenance} = \frac{[\text{EF (lb/hr) x monthly hours of pile maintenance activity (hrs/mo)}]}{\text{2000 lb/ton}}$$

Where: EF = Emission factor (lb/hr). EF is from AP-42, Section 11.9 (dated 7/98), Table 11.19-1 (coal bulldozing)

$$\text{PM EF} = (78.4 \times s^{1.2})/M^{1.3}$$

$$PM_{10}\ \text{EF} = 0.75 \times (18.6 \times s^{1.5})/M^{1.4}$$

s = silt content of material (%) = 2.2%. From AP-42, Section 13.2 (dated 11/06), Table 13.2.4-1, coal as received from coal-fired power plant.

M = moisture content of the coal (%), to be determined by coal sampling required by Conditions 1.8 and 2.11.

A control efficiency of 50% may be used for use of water sprays to reduce emissions while bull dozing at the storage piles.

Monthly emissions shall be used in a twelve month rolling total to monitor compliance with the annual limitations. Each month a new twelve month rolling total shall be calculated using the previous twelve months data.

3.3 The **rail car bottom dump unloading station, conveying of coal from the rail car unloading hoppers to coal storage, coal storage and the Unit 3 coal handling system (crushing and conveying from storage to unit)** are subject the requirements of the PSD program. BACT shall be applied for control and minimization of PM and PM_{10} emissions. BACT has been determined as follows: (Colorado Construction Permit 04PB1017)

3.3.1 **Bottom Dump Rail Car Unloading Station:** The station shall be partially enclosed (roof and 2 sides) and water sprays shall be used to reduce emissions when coal is dumped from rail cars to the unloading hoppers. These requirements are part of the fugitive particulate matter control plan in Condition 3.9.

3.3.2 **Conveying System from Unloading Hoppers to Lowering Wells:** Conveyors will be underground with no ventilation or completely enclosed.

3.3.3 **Unit 3 Coal Handling System (Crushing and Conveying) from Storage to Unit:** Conveyors will be underground with no ventilation, completely enclosed and/or

vented to a baghouse. The baghouse shall be capable of achieving the outlet grain-loading limit specified in Condition 3.4.1.

3.3.4 **Lowering Wells and Storage Piles:** Emissions from the lowering wells (off-load coal to the storage piles) and the storage piles shall be minimized by following the fugitive particulate matter control measures specified in Condition 3.9.

3.4 Emissions of PM and PM_{10} **from the Unit 3 coal handling system (crushing and conveying from pile to unit)** are subject to the following limitations:

3.4.1 For purposes of BACT PM and PM_{10} emissions from the baghouse shall not exceed 0.01 gr/dscf. (Colorado Construction Permit 04PB1017) In the absence of credible evidence to the contrary, compliance with the BACT emission limitation shall be presumed provided the baghouse is operated and maintained in accordance with the requirements in Condition 7.1.2.

3.4.2 Annual emissions (tons/yr) of PM and PM_{10} shall not exceed the limitations listed in the above table. (Colorado Construction Permit 04PB1017, as modified under the provisions of Section I, Condition 1.3 to remove the monthly limitations) Compliance with the emission limitations shall be monitored by calculating emissions monthly using the equation below, the monthly quantity of coal handled (as required by Condition 3.5) and the monthly average moisture content of the coal (as required by Condition 2.11).

Unit 3 coal handling emissions = enclosed transfer + coal crushing + transfer tower baghouse

Emissions from enclosed transfer shall be determined using the equation in Condition 3.1 for coal conveying. Note that there is 1 enclosed transfer point.

Emissions from coal crushing shall be determined using the equation in Condition 3.1 for coal crushing, except that a control efficiency of 99% may be applied for crusher provided the integrity of the enclosure is maintained and water sprays are used.

$$\text{Baghouse} = \frac{\text{EF (lb/hr) x hours of operation (hrs/mo)}}{\text{2000 lb/ton}}$$

Where: PM EF = PM_{10} EF= 3.12 lb/hr. The EF is based on the BACT limit (0.01 gr/dscf) and the design flow rate of the baghouse blower (see equation below).

$$\text{PM EF} = PM_{10}\text{ EF} = \frac{\text{0.01 gr/dscf x 36,400 scfm x 60 min/hr}}{\text{7000 gr/lb}} = \text{3.12 lb/hr}$$

Monthly emissions shall be used in a twelve month rolling total to monitor compliance with the annual limitations. Each month a new twelve month rolling total shall be calculated using the previous twelve months data.

3.5 Coal handled at this facility is subject to the following requirements:

3.5.1 The quantity of coal handled through the **Unit 1 coal handling system (crushing and conveying from pile to unit)** shall be monitored and recorded monthly. Monthly quantities of coal handled shall be determined using belt scales and corporate records as necessary. The monthly quantities of coal handled shall be used to calculate emissions are required by Condition 3.1.

3.5.2 The quantity of coal handled through the **Units 2 and 3 coal handling system (crushing and conveying from piles to units) and coal unloaded at the rail car unloading station** shall not exceed the limits listed in the above table. (Colorado Construction Permit 04PB1017, as modified under the provisions of Section I, Condition 1.3 to remove the monthly limitations) Monthly quantities of coal handled shall be determined using belt scales and corporate records as necessary. Monthly quantities of coal handled shall be used in twelve month rolling totals to monitor compliance with the annual limitations. Each month, new twelve month totals shall be calculated using the previous twelve months data.

3.6 Opacity of emissions from the **Units 1, 2 and 3 coal handling systems (crushing and conveying from piles to units)** shall not exceed 20%. (Colorado Construction Permit 04PB1017 and Colorado Regulation No. 1, Section II.A.1) In the absence of credible evidence to the contrary, the Units 1, 2 and 3 coal handling systems shall be presumed to be in compliance with the 20% opacity limits provided the following conditions are met:

3.6.1 The conveyors and crushers shall be enclosed. Water spray systems shall be used at the Unit 3 crusher and elsewhere in the conveying systems as necessary to minimize particulate matter emissions. The integrity of the enclosures shall be maintained.

3.6.2 The Unit 3 transfer tower baghouse, the Units 1 and 2 transfer tower dust collector and the Unit 2 coal bunker dust collector shall be operated and maintained in accordance with the requirements in Condition 7.1.2.

3.6.3 A six (6) minute EPA Method 9 opacity observation shall be conducted annually on the Unit 3 transfer tower baghouse, the Units 1 and 2 transfer tower dust collector and the Unit 2 coal bunker dust collector. Subject to the provisions of C.R.S. 25-7-123.1 and in the absence of credible evidence to the contrary, exceedance of the limit shall be considered to exist from the time a Method 9 reading is taken that shows an exceedance of the opacity limit until a Method 9 reading is taken that shows the opacity is less than the opacity limit. The EPA reference Method 9 opacity observations shall be performed by an observer with current and valid Method 9 certification. All observations shall be recorded and kept on site to be made available to the Division upon request.

3.7 The **Unit 3 coal handling system (crushing and conveying from pile to unit)** is subject to the requirements in 40 CFR Part 60 Subparts Y, Standards of Performance for Coal Preparation and Processing Plants and A, General Provisions, as adopted by reference in Colorado Regulation

No. 6, Part A. Specifically the Unit 3 coal handling system is subject to the following requirements:

3.7.1 On and after the date on which the performance test is conducted or required to be completed under §60.8, whichever date comes first, an owner or operator shall not cause to be discharged into the atmosphere from any coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal constructed, reconstructed, or modified on or before April 28, 2008, gases which exhibit 20 percent opacity or greater. (§ 60.254(a)) In the absence of credible evidence to the contrary, compliance with the opacity limitation is presumed provided the requirements in Conditions 3.6.1 and 3.6.2 are met and the visible emission observation required by Condition 3.6.3 indicates compliance with the opacity standard specified in Condition 3.6.

3.7.2 The Unit 3 coal handling system is subject to the NSPS General Provisions specified in Condition 6, as well as the following requirement:

3.7.2.1 The permittee shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility or any malfunction of the air pollution control equipment (§ 60.7(b)).

3.8 The rail car rotary dump unloading station shall only be used when the bottom dump unloading station is not in operation and/or the coal is frozen in the rail cars and the bottom dumper cannot be used. At no time shall the rotary dump and bottom dump unlading stations be operated simultaneously. (Colorado Construction Permit 04PB1017). The permittee shall retain records of the times and dates that the rotary dump station is used and the purpose for its use. Emissions from the use of the rail car rotary dump shall be estimated using the methods specified in Condition 3.2.2 and used in the monthly totals for fugitive coal handling and storage sources. Records shall be made available to the Division upon request.

3.9 The **fugitive coal handling and storage sources (rail car unloader, load-out to piles and storage piles)** are subject to the following fugitive particulate matter emissions requirements.

3.9.1 Every owner or operator of a source or activity which is required to obtain an emission permit under Regulation No. 3, Part B shall operate under an approved fugitive particulate emission control plan (Colorado Regulation No. 1, Section III.D.1.b). The following measures shall be utilized to minimize fugitive particulate matter emissions from the fugitive coal handling and storage sources. (Colorado Construction Permit 04PB1017, as modified under the provisions of Section I, Condition 1.3 to include the updated fugitive control plan submitted on August 9, 2011 and approved by the Division on August 31, 2011)

3.9.1.1 The rail car unloading station will be partially enclosed (two sides and a roof).

3.9.1.2 Water sprays shall applied when unloading coal from rail cars to hoppers.

3.9.1.3 Water sprays shall be used at the Unit 3 lowering well when coal is off-loaded to the storage piles.

3.9.1.4 Coal shall be treated with a dust suppression chemical as it is transferred to the storage piles.

3.9.1.5 Water sprays shall be used at the active and inactive storage piles as necessary to reduce emissions.

3.9.1.6 Water misting equipment shall be used during times of unloading coal to the storage pile, as necessary, to control fugitive dust during unloading operations as long as the use of the misting equipment will not create a safety hazard due to freezing temperatures.

3.9.1.7 Water sprays shall be used at the transfer chute from the Unit 3 lowering well to the Units 1 and 2 conveyor system to the Units 1 and 2 lowering well and at the top of the Units 1 and 2 lowering well.

3.9.1.8 The inactive coal pile shall be managed such that it is in close proximity to the feeder area in order to reduce the distance coal has to be pushed when it is taken from storage.

3.9.1.9 All inactive portions of the coal pile shall be treated with an encapsulate chemical. Routine application of the chemical product will be done on a semi-annual basis, or whenever there is a premature break in the encapsulate barrier.

3.9.1.10 Water shall be applied to the coal pile both prior to and during coal pushing activities whenever conditions exist that create a fugitive dust issue from the activity and the application will not create a safety hazard due to freezing temperatures.

3.9.1.11 A wind barrier shall be constructed and in place by July 4, 2012. In the event that the deadline cannot be met due to construction delays, the permittee may request an extension from the Division. The request for extension shall include the reasons for the delay and provide the date by which the barrier will be in place.

A weekly inspection of the coal piles and fugitive coal handling equipment shall be conducted to ensure the particulate matter emission control elements are in place and effective. The permittee shall maintain records of the weekly inspections and results. In addition, at any time when a fugitive dust problem is observed, the permittee shall take action to correct the problem. The permittee shall maintain records of the date and time of any fugitive dust problem observed, and the type and time of action taken to correct the problem. These records shall be maintained on site for inspection upon request.

3.9.2 A fugitive particulate emission control plan, or a modification to an existing plan, shall be required to be submitted if the Division determines that for this source or activity visible emissions are in excess of 20% opacity; or visible emissions are being

transported off the property; or if this source or activity is operating with emissions that create a nuisance. The control plan shall be submitted to the Division within the time period specified by the Division (Colorado Regulation No. 1, Section III.D.1.c). The 20% opacity, no off-property transport, and nuisance emission limitations are guidelines and not enforceable standards and no person shall be cited for violation thereof pursuant to C.R.S. 25-7-115 (Colorado Regulation No. 1, Section III.D.1.e.(iii)).

3.10 The hours of coal pile maintenance and operation of the Unit 3 coal handling system shall be monitored and recorded monthly. Monthly hours of operation shall be used to calculate emissions as required by Conditions 3.2.2 and 3.4.2.

4. Waste Ash Handling and Storage – F002 –Waste Ash Landfill and Storage, P001, P002 and P005 – Units 1, 2 and 3 Waste Ash Silos

P001 – Unit 1 Waste Ash Silo

Parameter	Permit Condition Number	Limitations		Compliance Emission Factor	Monitoring	
		Short Term	Long Term		Method	Interval
PM and PM_{10}	4.1	N/A	N/A	See Condition 4.1	Recordkeeping and Calculation	Annually
Fly Ash/FGD Waste/Spent Sorbent Processed	4.4	N/A	N/A	N/A	Recordkeeping	Monthly
Opacity	4.6	Not to exceed 20%		N/A	See Condition 4.6	
Unloading Restrictions	4.9	Materials shall be unloaded from the silos between 6 am and 6 pm only		N/A	Recordkeeping	Daily

P002 – Unit 2 Waste Ash Silo

Parameter	Permit Condition Number	Limitations		Compliance Emission Factor	Monitoring	
		Short Term	Long Term		Method	Interval
BACT Requirements	4.2	NA	N/A	N/A	See Condition 4.2.	
PM	4.3	N/A	0.045 tons/yr	See Condition 4.3	Recordkeeping and Calculation	Monthly
PM_{10}		N/A	0.039 tons/yr			
Fly Ash/FGD Waste/Spent Sorbent Processed	4.5	N/A	Loaded: 108,094 tons/yr Unloaded: 129,713 tons/yr	N/A	Recordkeeping and Calculation	Monthly
Opacity	4.6	Not to Exceed 20%		N/A	See Condition 4.6	
Unloading Restrictions	4.9	Materials shall be unloaded from the silos between 6 am and 6 pm only		N/A	Recordkeeping	Daily

P005 - Unit 3 Waste Ash Silo

Parameter	Permit Condition Number	Limitations Short Term	Limitations Long Term	Compliance Emission Factor	Monitoring Method	Monitoring Interval
BACT Requirements	4.2	N/A	N/A	N/A	See Condition 4.2	
PM	4.3	N/A	0.097 tons/yr	See Condition 4.3.	Recordkeeping and Calculation	Monthly
PM_{10}		N/A	0.084 tons/yr			
Fly Ash/FGD Waste/Spent Sorbent Processed	4.5	N/A	Loaded: 235,819 tons/yr Unloaded: 282,983 tons/yr	N/A	Recordkeeping and Calculation	Monthly
Opacity	4.6	Not to Exceed 20%		N/A	See Condition 4.6	
Unloading Restrictions	4.9	Materials shall be unloaded from the silos between 6 am and 6 pm only		N/A	Recordkeeping	Daily

F002 – Waste Ash Landfill

Parameter	Permit Condition Number	Limitations Short Term	Limitations Long Term	Compliance Emission Factor	Monitoring Method	Monitoring Interval
BACT Requirements	4.2	N/A	N/A	N/A	See Condition 4.2	
PM	4.4	N/A	7.25 tons/yr	See Condition 4.3.	Recordkeeping and Calculation	Monthly
PM_{10}		N/A	2.45 tons/yr			
Fly Ash/FGD Waste/Spent Sorbent Disposed	4.5	N/A	549,536 tons/yr	N/A	Recordkeeping	Monthly
Fugitive Particulate Matter Control Plan	4.7	See Condition 4.7		N/A	See Condition 4.7	
Landfill Maintenance Hours	4.8	N/A	N/A	N/A	Recordkeeping	Monthly
Unloading and Operating Restrictions	4.9	Materials shall be unloaded at the landfill and operations at the landfill will occur between 6 am and 6 pm only		N/A	Recordkeeping	Daily

4.1 For the purposes of APEN reporting and payment of annual fees, annual emissions of PM and PM_{10} from the **Unit 1 waste ash silo** shall be determined using the equations below and the annual quantity of fly ash/FGD waste/spent sorbent processed (as required by Condition 4.4).

Waste Ash Silo Emissions = Silo Loading + Silo Unloading

$$\text{Silo Loading} = \frac{[\text{EF (lb/ton) x annual quantity of fly ash/FGD waste/spent sorbent loaded (tons/yr)}]}{2000 \text{ lb/ton}}$$

Where: EF = 0.61 lb/ton, from AP-42, Section 11.17 (dated 2/98), Table11.17-4 (product unloading – enclosed truck)

A control efficiency of 99.9% may be applied provided the boiler baghouse is operated and maintained as required by Condition 7.1.1.

$$\text{Silo Unloading} = \frac{[\text{E (lb/ton) x D x annual fly ash/FGD waste/spent sorbent unloaded (tons/yr)}]}{2000 \text{ lb/ton}}$$

$$\text{E (lb/ton)} = \frac{k \times 0.0032 \times (U/5)^{1.3}}{(M/2)^{1.4}}$$

Where: E= Emission factor (lb/ton). E is Equation 1 from AP-42, Section 13.2.4 (dated 11/06).
k = particle size multiplier (dimensionless)
k= 0.74 for PM (< 30 µm)
k= 0.35 for PM_{10}
U = mean wind speed (mph), 8.2 mph average wind speed
M = moisture content (%), assume 20% for pug mill operation
D = number of drop or transfer points = 1 (drop from pug mill to truck)

The primary means for unloading fly ash/FGD waste/spent sorbent from the Unit 1 silo is via an enclosed screw conveyor to the pug mill where the material is mixed with water prior to unloading. During periods of time when the Unit 1 pug mill is not operational, the permittee may unload dry fly ash/FGD waste/spent sorbent into enclosed trucks via a hose attachment. The permittee shall maintain records indicating those periods of time when the pug mill in not operational and shall calculate emissions from silo unloading during those periods using the following emission factors: PM = PM_{10} = 0.61 lb/ton (from AP-42 Section 11-17 (dated 2/98), Table 11.7-4, "product loading enclosed truck"). A control efficiency of 95% can be applied provided the following requirements are met. When unloading into an enclosed truck the hose shall be attached, operated and maintained in accordance with good engineering practices. A copy of written procedures for proper hose attachment and maintenance, as well as records related to the maintenance of the hose and good engineering practices, such as records of hose inspections, repair or replacement shall be maintained and made available to the Division upon request.

4.2 The **Unit 2 waste ash silo, Unit 3 waste ash silo and the waste ash landfill** are subject to the requirements of the PSD program. BACT shall be applied for control and minimization of PM and PM_{10} emissions. BACT has been determined as follows: (Colorado Construction Permit 04PB1021, as modified under the provisions of Section I, Condition 1.3 to allow dry fly ash/ FGD waste/spent sorbent unloading from the Unit 2 ash silo under limited conditions as requested in PSCo's comments on the draft permit received on January 13, 2012)

4.2.1 Emissions from the waste ash silos shall be vented through the respective boiler baghouse during silo loading. The boiler baghouses shall be operated and maintained in accordance with the requirements in Condition 7.1.1.

4.2.2 Except as provided for in Condition 4.2.3, fly ash/FGD waste/spent sorbent shall be unloaded from the silos by transferring the fly ash/FGD waste/spend sorbent through enclosed screw conveyors, to an enclosed pug mill where the material shall be mixed with water prior to loading into trucks. The pug mill shall be operated, maintained and inspected in accordance with manufacturer's recommendations and good engineering practices. A copy of operating and maintenance procedures, schedules for maintenance and/or inspection activities and records related to the operation and maintenance of the pug mill and good engineering practices, such as records of routine maintenance and/or inspection shall be made available to the Division upon request.

4.2.3 During periods when the Unit 2 ash silo pug mill is not operational, fly ash/FGD waste/spent sorbent shall be unloaded into enclosed trucks via a hose attachment. When unloading into an enclosed truck the hose shall be attached, operated and maintained in accordance with good engineering practices. A copy of written procedures for proper hose attachment and maintenance, as well as records related to the maintenance of the hose and good engineering practices, such as records of hose inspections, repair or replacement shall be maintained and made available to the Division upon request. The permittee shall maintain records of the periods when the Unit 2 ash silo pug mill is not operational and dry fly ash/FGD waste/spent sorbent is unloaded into enclosed trucks.

4.2.4 Emissions from the waste ash landfill shall be minimized by following the fugitive particulate matter control measures specified in Condition 4.7.

4.3 Particulate Matter (PM and PM_{10}) emissions, **Unit 2 waste ash silo, the Unit 3 waste ash silo and the waste ash landfill**, shall not exceed the limitations listed in the above table. (Colorado Construction Permit 04PB1021, as modified under the provisions of Section I, Condition 1.3 to remove the monthly limits). Compliance with the emission limitations shall be monitored as follows:

4.3.1 **For the Unit 2 and Unit 3 waste ash silos** compliance with the emission limitations shall be monitored by calculating emissions monthly using the equations specified in Condition 4.1 and the monthly quantity of fly ash/FGD waste/spent sorbent process (as required by Condition 4.5). Monthly emissions shall be used in rolling twelve month totals to monitor compliance with the annual limitations. Each month new twelve month rolling totals shall be calculated using the previous twelve months' data.

During periods of time when the Unit 2 pug mill is not operational, the permittee may unload dry fly ash/FGD waste/spent sorbent into enclosed trucks via a hose

attachment. The permittee shall calculate emissions from silo unloading during those periods using the following emission factors: PM = PM_{10} = 0.61 lb/ton (from AP-42 Section 11-17 (dated 2/98), Table 11.7-4, "product loading enclosed truck"). A control efficiency of 95% can be applied provided the requirements in Condition 4.2.3 are met.

4.3.2 **For the waste ash landfill** compliance with the emission limits shall be monitored by calculating emissions monthly using the equations below and the monthly quantity of fly ash/FGD waste/spend sorbent disposed (as required by Condition 4.5) or monthly hours of landfill maintenance (as required by Condition 4.8), as appropriate.

Ash landfill emissions = unloading to landfill + landfill maintenance

$$\text{Unloading (tons/mo)} = \frac{\text{[E (lb/ton) x D x annual fly ash/FGD waste/spent sorbent unloaded (tons/mo)]}}{\text{2000 lb/ton}}$$

$$\text{E (lb/ton)} = \frac{k \times 0.0032 \times (U/5)^{1.3}}{(M/2)^{1.4}}$$

Where: E= Emission factor (lb/ton). E is Equation 1 from AP-42, Section 13.2.4 (dated 11/06).
k = particle size multiplier (dimensionless)
k= 0.74 for PM (< 30 µm)
k= 0.35 for PM_{10}
U = mean wind speed (mph), 8.2 mph average wind speed
M = moisture content (%), assume 20% for pug mill operation
D = number of drop or transfer points = 1 (drop from truck to landfill)

$$\text{Maintenance (tons/mo)} = \frac{\text{EF (lb/hr) x monthly hours of maintenance activity (hrs/mo)}}{\text{2000 lb/ton}}$$

Where: EF = Emission factor (lb/hr). EF is from AP-42, Section 11.9 (dated 7/98), table 11.9-1 (bulldozing overburden)
PM EF = $(5.7 \times s^{1.2})/M^{1.3}$
PM_{10} EF = $(1.0 \times s^{1.5} \times 0.75)/M^{1.4}$
s = silt content of material (%). Silt content assumed to be 62.1% (weighed average of fly ash silt content (80% from AP-42, Section 13.4 (dated 11/06), Table 13.2.4-1) and 1% for scrubber sludge).
M = moisture content (%). Moisture content assumed to be 20% based on pug mill operation.

An 80% control efficiency may be applied to the maintenance emission calculations if additional watering, if necessary is done at the landfill to reduce fugitive particulate matter emissions.

Monthly emissions shall be used in a rolling twelve month total to monitor compliance with the annual limitations. Each month new a twelve month rolling total shall be calculated using the previous twelve months' data.

4.4 The quantity of fly ash/FGD waste/spent sorbent processed through the **Unit 1 waste ash silo** shall be monitored and recorded monthly. Monthly quantities of material processed will be summed to determine the annual throughput which shall be used to calculate emissions as

required by Condition 4.1. The monthly quantity of material processed shall be determined as follows:

4.4.1 The quantity of **materials loaded into the silo** shall be determined using the average ash content of the coal for the month (determined through coal sampling required by Conditions 1.8 and 2.11) and the quantity of coal burned by the unit during the month (as required by Conditions 1.7 and 2.10). An 80% fly ash factor shall be assumed. The quantity of fly ash shall be increased by 32.2% to account for the FGD waste and spent sorbent.

4.4.2 The quantity of **materials loaded out of the silo** shall be determined by adjusting the quantity of material loaded into the silo (as determined by Condition 4.4.1) by 20% to account for the water mixed in with the material via the pug mill. Note that for periods when the pug mill is not operational and material is unloaded dry, the quantity of material loaded into the silo shall not be adjusted.

4.5 The quantity of fly ash/FGD waste/spent sorbent processed **through the Units 2 and 3 waste ash silos** and disposed of at **the waste ash landfill** shall not exceed the limitations listed in the above table. (Colorado Construction Permit 04PB1021, as modified under the provisions of Section I, Condition 1.3 to remove the monthly limitations) The quantity of material processed through the Units 2 and 3 waste ash silos and disposed of at the waste ash landfill shall be monitored and recorded monthly as follows:

4.5.1 The quantity of **materials loaded into the silo** shall be determined using the average ash content of the coal for the month (determined through coal sampling required by Conditions 1.8 and 2.11) and the quantity of coal burned by the unit during the month (as required by Conditions 1.7 and 2.10). An 80% fly ash factor shall be assumed. The quantity of fly ash shall be increased by 26.5% for Unit 2 and 29.3% for Unit 3 to account for the FGD waste and spent sorbent.

4.5.2 The quantity of **materials loaded out of the silos** shall be determined by adjusting the quantity of material loaded into the silo (as determined by Condition 4.5.1) by 20% to account for the water mixed in with the material via the pug mill. Note that for periods when the Unit 2 pug mill is not operational and material is unloaded dry, the quantity of material loaded into the silo shall not be adjusted.

4.5.3 The quantity of materials disposed of at the landfill shall be determined as specified in Conditions 4.4.2 and 4.5.2.

Monthly quantities of material processed shall be used in rolling twelve month totals to monitor compliance with the annual limitations. Each month new twelve month rolling totals shall be calculated using the previous twelve months data.

4.6 Opacity of emissions **from each waste ash silo** shall not exceed 20% (Colorado Regulation No. 1, Section II.A.1 and Colorado Construction Permit 04PB1022). Compliance with the opacity limitation shall be monitored as follows:

4.6.1 During **silo loading** emissions from the silo are routed to the respective Unit's baghouse. Therefore, in the absence of credible evidence to the contrary, the waste ash silos shall be presumed to be in compliance with the 20% opacity limit during **silo loading** provided each respective Unit is in compliance their respective opacity standards (Unit opacity limitations and monitoring are specified in Condition 9).

4.6.2 In the absence of credible evidence to the contrary, the waste ash silos shall be presumed to be in compliance with the 20% opacity limit during **silo unloading** provided that the pug mills are operated and maintained in accordance with the requirements in Condition 4.2.2.

4.6.3 In the absence of credible evidence to the contrary, when the Units 1 and/or 2 pug mills are not operational, the Units 1 and/or 2 waste ash silos shall be presumed to be in compliance with the 20% opacity limit during **silo unloading** provided that unloading process meets the requirements in Conditions 4.1 and 4.2.3.

4.7 Operations at the waste ash landfill are subject to the following fugitive particulate matter emissions requirements.

4.7.1 Every owner or operator of a source or activity which is required to obtain an emission permit under Regulation No. 3, Part B shall operate under an approved fugitive particulate emission control plan (Colorado Regulation No. 1, Section III.D.1.b). The following measures shall be utilized to minimize fugitive particulate matter emissions at the waste ash landfill. (Colorado Construction Permit 04PB1021, as modified under the provisions of Section I, Condition 1.3 to allow dry fly ash/ FGD waste/spent sorbent unloading from the Units 1 or 2 ash silo under limited conditions as requested in PSCo's comments on the draft permit received on January 13, 2012)

4.7.1.1 Dry fly ash, FGD waste or spent sorbent shall be wetted prior to unloading or during the unloading process at the landfill.

4.7.1.2 Water sprays shall be used at the active and inactive portions of the landfill as necessary to reduce particulate matter emissions.

4.7.1.3 Water shall be applied to the clay liner during construction for compaction.

4.7.1.4 Topsoil stockpile revegetation shall take place as soon as soon after stockpiling as practical.

4.7.1.5 Reclamation and revegetation of disposal modules and other non-waste areas shall be carried out in the design, construction and operating plan. This plan shall be made available to the Division upon request.

The source shall certify semi-annually that the above control measures have been followed to minimized particulate matter emissions from the waste ash landfill.

Records shall be kept of the dates and times that water is applied at the waste ash landfill.

4.7.2 A fugitive particulate emission control plan, or a modification to an existing plan, shall be required to be submitted if the Division determines that for this source or activity visible emissions are in excess of 20% opacity; or visible emissions are being transported off the property; or if this source or activity is operating with emissions that create a nuisance. The control plan shall be submitted to the Division within the time period specified by the Division (Colorado Regulation No. 1, Section III.D.1.c). The 20% opacity, no off-property transport, and nuisance emission limitations are guidelines and not enforceable standards and no person shall be cited for violation thereof pursuant to C.R.S. 25-7-115 (Colorado Regulation No. 1, Section III.D.1.e.(iii)).

4.8 The hours of waste ash landfill maintenance shall be monitored and recorded monthly. Monthly hours of waste ash landfill maintenance shall be used to calculate emissions as required by Condition 4.3.2.

4.9 Material shall be unloaded from the silos and operations at the waste ash landfill shall occur between 6 am and 6 pm only. (Colorado Construction Permit 04PB1021) The permittee shall keep daily logs of truck trips. Such records shall include the time of day that the trip is made. These records shall be maintained on site and made available to the Division upon request.

5. M001, M002 and M003 - Cooling Water and Service Water Towers

M001 & M002 –Units 1 and 2 Cooling Water Towers (2) and Service Water Towers (2)

Parameter	Permit Condition Number	Limitations		Compliance Emission Factor	Monitoring	
		Short Term	Long Term		Method	Interval
Water Circulated	5.1	N/A	165,038 MMgal/yr	N/A	Recordkeeping	Monthly
Total Dissolved Solids Analysis	5.2	N/A	N/A	N/A	Laboratory Analysis	Semi-Annually
PM	5.3	N/A	12 tons/yr	See Condition 5.3	Recordkeeping and Calculation	Monthly
PM_{10}			12 tons/yr			
VOC			4.4 tons/yr	0.0527 lb/MMgal (as $CHCl_3$)		
Opacity	5.4	Not to Exceed 20%		N/A	See Condition 5.4	

M003 – Unit 3 Cooling Water Tower

Parameter	Permit Condition Number	Limitations		Compliance Emission Factor	Monitoring	
		Short Term	Long Term		Method	Interval
Water Circulated	5.1	N/A	89,242 MMgal/yr	N/A	Recordkeeping	Monthly
Total Dissolved Solids Analysis	5.2	N/A	N/A	N/A	Laboratory Analysis	Quarterly
PM	5.3	N/A	11.2 tons/yr	See Condition 5.3	Recordkeeping and Calculation	Monthly
PM_{10}			2.68 tons/yr			
VOC			2.35 tons/yr	0.0527 lb/MMgal (as $CHCl_3$)		
Opacity	5.4	Not to Exceed 20%		N/A	See Condition 5.4	
BACT Requirements	5.5	N/A	N/A			

5.1 The quantity of water circulated shall not exceed the following limitations:

5.1.1 **<u>Total</u>** water circulated through the **Units 1 and 2 cooling and service water towers** shall not exceed 165,038 MMgal/yr. (Colorado Construction Permit 96PB153-2, as modified under the provisions of Section I, Condition 1.3, based on the requested water circulation rate identified in the APEN submitted on September 26, 2002).

5.1.2 Water circulated through the **Unit 3 cooling water tower** shall not exceed 89,242 MMgal/yr. (Colorado Construction Permit 04PB1015, as modified under the provisions of Section I, Condition 1.3 to remove the quarterly throughput limits).

The quantity of water circulated **through each tower** shall be monitored and recorded monthly. Monthly quantities of water circulated from each tower shall be used in the emission calculations identified in Condition 5.3. Monthly quantities of water circulated through the Unit 3 tower shall be used in a rolling twelve month total to monitor compliance with the annual limitation. Monthly quantities of water circulated through each Unit 1 and 2 tower shall be summed together and used in a twelve month rolling total to monitor compliance with annual limitation. Each month, new twelve month totals shall be calculated using the previous twelve months data.

5.2 Samples of water circulated from each tower shall be taken and analyzed in accordance with the following schedule to determine the total solids concentration:

5.2.1 **Units 1 and 2 cooling and service water towers:** semi-annually

5.2.2 **Unit 3 cooling tower:** quarterly (Colorado Construction Permit 04PB1016)

The total solids concentration shall be used to calculate particulate matter emissions as required by Condition 5.3. A copy of the procedures used to obtain and analyze samples shall be maintained and made available to the Division upon request.

5.3 Emissions of PM, PM_{10} and VOC shall not exceed the following limitations:

5.3.1 **Total** emissions from the **Units 1 and 2 cooling water and service water towers** shall not exceed 12 tons/yr of PM, 12 ton/yr of PM_{10} and 4.4 tons/yr of VOC. (Colorado Construction Permit 96PB153-2, as modified under the provisions of Section I, Condition 1.3, based on the requested emissions identified in the APEN submitted on September 26, 2002).

5.3.2 Emission from the **Unit 3 cooling water tower** shall not exceed 11.2 tons/yr of PM, 2.68 tons/yr of PM_{10} and 2.35 tons/yr of VOC. (Colorado Construction Permit 04PB1016, as modified under the provisions of Section I, Condition 1.3 to remove the quarterly emission limitations)

Emissions shall be calculated monthly **for each tower** using the following equations:

Units 1 and 2 cooling and service water towers

PM = PM_{10} (lb/month) = Q x d x % drift x 31.3% drift dispersed x total solids concentration

Where: Q = water circulated, gal/month
d = density of water, lb/gal (from T5 application d = 8.34 lb/gal)
% drift = 0.001% (from T5 application)
31.3% drift dispersed (from EPA-600/7-79-251a, November 1979, "Effects of Pathogenic and Toxic Materials Transported Via Cooling Device Drift - Volume1 - Technical Report", Page 63)
Total solids concentration = total solids concentration, in ppm (lb solids/10^6 lb water) - to be determined by Condition 5.2.

Unit 3 cooling water tower

PM (lb/month) = Q x d x % drift x total solids concentration

Where: Q = water circulated, gal/month
d = density of water, lb/gal (from T5 application d = 8.34 lb/gal)
% drift = 0.0005% (BACT – see Condition 5.5)
Total solids concentration = total solids concentration, in ppm (lb solids/10^6 lb water) - to be determined by Condition 5.2.

PM_{10} (lb/month) = 0.24 x PM (lb/month)

Where: 0.24 = weight fraction of PM_{10} to PM, per "Calculating Realistic PM_{10} Emissions from Cooling towers", J. Reisman, G. Frisbie, Presented at 2001 AWMA Annual Meeting

<u>All towers</u>

VOC = $CHCl_3$ (lb/month) = Q x EF x (1 MMgal/10^6 gal)

Where: Q = water circulated, gal/month
EF = 0.0527 lb/MMgal (from letter from Wayne C. Micheletti to Ed Lasnic, dated November 11, 1992)

Monthly emissions from the Unit 3 cooling water tower shall be used in a twelve month rolling total to monitor compliance with the annual limitations. Monthly emissions from each Unit 1 and 2 tower shall be summed together and used in a twelve month rolling total to monitor compliance with annual limitations. Each month new twelve month totals shall be calculated using the previous twelve months data.

5.4 Opacity of emissions **from each cooling water or service water tower** shall not exceed 20% (Colorado Regulation No. 1, Section II.A.1). In the absence of credible evidence to the contrary, compliance with the opacity standard shall be presumed, provided the drift eliminators on the towers are operated and maintained in accordance with the manufacturers' recommendations and good engineering practices. A copy of operating and maintenance procedures, schedules for maintenance and/or inspection activities and records related to operation and maintenance of the drift eliminators and good engineering practices such as records of routine maintenance and/or inspection shall be made available to the Division upon request.

5.5 The **Unit 3 Cooling Water Tower** is subject to the requirements of the PSD program. Best available control technology (BACT) shall be applied for control and minimization of PM and PM_{10} emissions. BACT has been determined to be drift eliminators to achieve drift levels of 0.0005% or less (Colorado Construction Permit 04PB1016). The drift eliminators shall be operated, maintained and inspected in accordance with manufacturer's recommendations and good engineering practices. A copy of operating and maintenance procedures, schedules for maintenance and/or inspection activities and records related to operation and maintenance of the drift eliminators and good engineering practices such as records of routine maintenance and/or inspection shall be made available to the Division upon request.

6. NSPS General Provisions

6.1 At all times, including periods of startup, shutdown, and malfunction owners and operators shall to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether 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 (40 CFR Part 60 Subpart A § 60.11(d) as adopted by Reference in Colorado Regulation No. 6, Part A).

6.2 No article, machine, equipment or process shall be used to conceal an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gasses discharged to the atmosphere (40 CFR Part 60 Subpart A § 60.12, as adopted by reference in Colorado Regulation No. 6, Part A).

7. Particulate Matter Emission Periodic Monitoring Requirements

7.1 Baghouse Operation and Maintenance Requirements

7.1.1 The boiler baghouses shall be maintained and operated in accordance with good engineering practices. Any maintenance performed on the boiler baghouses shall be documented and made available to the Division upon request.

7.1.2 The baghouse and dust collectors associated with the coal handling system (Units 1 and 2 transfer tower dust collector, Unit 2 coal bunker dust collector and Unit 3 transfer tower baghouse) shall be operated and maintained in accordance with manufacturer's recommendations and good engineering practices. A copy of operating and maintenance procedures, schedules for maintenance and/or inspection activities and records related to operation and maintenance of the baghouse and dust collectors and good engineering practices such as records of routine maintenance and/or inspection shall be made available to the Division upon request.

7.2 Stack Testing

Performance testing for particulate emissions shall be performed in accordance with the requirements and procedures set forth in EPA Test Method 5 as set forth in 40 CFR Part 60, Appendix A. Frequency of testing shall be annual, except that: (1) if the first annual test or any subsequent test results indicate emissions are less than or equal to 50% of the emission limit, another test is required within five years; (2) if the first annual or any subsequent test results indicate emissions are more than 50%, but less than or equal to 75% of the emission limit, another test is required within three years; (3) if the first annual or any subsequent test results indicate emissions are greater than 75% of the emission limit, an annual test is required until the provisions of (1) or (2) are met.

Note that performance tests were conducted for Units 1 and 2 in February 2011. The results of the test indicates that PM emissions from each unit was less than 50% of the limitation (results were Unit 1 – 0.0026 lb/MMBtu (2.6 % of the standard), and Unit 2 – 0.0043 lb/MMBtu (4.3% of the standard), therefore, the next test is required within five years of the February 2011 test.

A stack testing protocol shall be submitted for Division approval at least thirty (30) calendar days prior to any performance of the test required under this condition. No stack test required herein shall be performed without prior written approval of the protocol by the Division. The Division reserves the right to witness the test. In order to facilitate the Division's ability to make plans to witness the test, notice of the date (s) for the stack test shall be submitted to the Division at least thirty (30) calendar days prior to the test. The Division may for good cause shown, waive this thirty (30) day notice requirement. In instances when a scheduling conflict is presented, the Division shall immediately contact the permittee in order to explore the possibility of making modifications to the stack test schedule. The required number of copies of the compliance test results shall be submitted to the Division within forty-five (45) calendar days of the completion of the test unless a longer period is approved by the Division.

8. Continuous Emission Monitoring and Continuous Opacity Monitoring Systems

The following requirements apply to the NO_X, SO_2 and CO continuous emission monitoring systems and the continuous opacity monitoring systems. Note that the continuous emission monitoring requirements identified in this Condition, are in addition to the continuous emission monitoring requirements required by the Acid Rain Program, which are identified in Section III of this permit.

8.1 Equipment and QA/QC Requirements

8.1.1 Except as provided for below, the **Unit 3 CO monitor is** subject to the applicable requirements of 40 CFR Part 60 (Colorado Construction Permit 04PB1015). The monitoring systems shall meet the equipment, installation and performance specifications of 40 CFR Part 60 Appendix B, Performance Specification 4/4A. This CEMS are subject to the quality assurance/quality control requirements in 40 CFR Part 60 Appendix F and Subpart A § 60.13 and Condition 8.1.7 of this permit.

8.1.1.1 The CO CEMS data shall meet the applicable "primary equipment hourly operating requirements" for hourly average calculation methodology specified in 40 CFR Part 75 Subpart B § 75.10(d).

8.1.1.2 Relative accuracy test audit (RATA) frequency will be determined according to 40 CFR Part 60 Appendix F.

8.1.2 The **SO_2, NO_X (and diluent) and flow monitors** are subject to the applicable requirements of 40 CFR Part 75. The monitoring systems shall meet the equipment, installation and performance specification requirements in 40 CFR Part 75, Appendix A. These CEMS shall meet the quality assurance/quality control requirements in 40

CFR Part 75, Appendix B and the conversion procedures of Appendix F and Condition 8.1.7 of this permit.

8.1.3 The **COMS** are subject to the requirements of 40 CFR Part 75. Each continuous opacity monitoring system shall meet the design, installation, equipment and performance specifications in 40 CFR Part 60, Appendix B, Performance Specification 1.

8.1.4 Quality assurance/quality control plans shall be prepared for the CEMS as follows:

8.1.4.1 The quality assurance/quality control plan for the **Unit 3 CO monitor** shall be prepared in accordance with the applicable requirements in 40 CFR Part 75, Appendix B.

8.1.4.2 The quality assurance /quality control plan for the **SO_2, NO_X (and diluent) and flow monitors** shall be prepared in accordance with the applicable requirements in 40 CFR Part 75, Appendix B.

The quality assurance/quality control plans shall be made available to the Division upon request. Revisions shall be made to the plans at the request of the Division.

8.1.5 **Unit 1 COMS:** The permittee shall check the zero and span drift of the system at least once per day and at such other times as designated by the Division, according to procedures approved by the Division. The Division may also make such determinations in order to assure proper quality assurance (Colorado Regulation No. 1, Section IV.F).

8.1.6 **Units 2 and 3 COMS:** The permittee shall follow the quality assurance and quality control procedures of 40 CFR Part 60, Subpart A § 60.13(d) and Subpart D § 60.45(c)(3) [Unit 2 only].

8.1.7 The **SO_2, NO_X and CO CEMS** are subject to the following requirements:

8.1.7.1 Relative Accuracy Test Audits (RATAs): RATAs shall be conducted in the units (e.g., lb/MMBtu) of the emission limitation for all of the emission limitations that are applicable to the emissions unit. The RATAs for emissions units that have annual emission limitations (tons/yr) will be conducted in terms of pounds per hour (lb/hr).

8.1.7.2 The DAHS shall be able to record and manipulate the data in the units (e.g., lb/MMBtu) of the emission limitation and meet the reporting requriements for all for the emissions limitations that are applicable to the emissions unit.

8.2 General Provisions

8.2.1 **NO_X (and diluent), SO_2, flow and opacity monitors:** The permittee shall ensure that all continuous emission and opacity monitoring systems required are in operation

and monitoring unit emissions or opacity at all times that the boiler combusts any fuel except as provided in 40 CFR Part 75 § 75.11(e) and during periods of calibration, quality assurance, or preventative maintenance performed pursuant to 40 CFR Part 75 § 75.21 and Appendix B, periods of repair, periods of backups of data from a data acquisition and handling system or recertification performed pursuant to 40 CFR Part 75 § 75.20. The permittee shall also ensure, subject to the exceptions just noted, that the continuous opacity monitoring systems required are in operation and monitoring opacity during the time following combustion when fans are still operating unless fan operation is not required to be included under any other applicable requirement (40 CFR Part 75 § 75.10(d)).

8.2.2 **Unit 3 CO monitor:** The permittee shall ensure that all continuous emission monitoring systems required are in operation and monitoring unit emissions at all times except for monitoring system breakdowns, repairs, calibration checks and zero and span adjustments required under 40 CFR Part 60 Subpart A § 60.13(d) (40 CFR Part 60 Subpart A § 60.13(e)).

8.2.3 Alternative monitoring system, alternative reference method, or any other alternative for the required continuous emission monitoring systems shall not be used without having obtained prior written approval from the appropriate agency, either the Division or the U.S. EPA, depending on which agency is authorized to approve such alternative under applicable law. Any alternative continuous emission monitoring systems or continuous opacity monitoring systems must be certified in accordance with the requirements of 40 CFR Part 60 or 40 CFR Part 75 prior to use.

8.2.4 All test and monitoring equipment, methods, procedures and reporting shall be subject to the review and approval by the appropriate agency, either the Division or the U.S.EPA, depending on which agency is authorized to approve such alternative under applicable law, prior to any official use. The Division shall have the right to inspect such equipment, methods and procedures and data obtained at any time. The Division shall provide a witness(s) for any and all tests as Division resources permit.

8.2.5 A file shall be maintained of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by applicable portions of 40 CFR Part 60 Subpart A and Appendices B and F and 40 CFR Part 75 recorded in a permanent form suitable for inspection.

8.2.6 Records shall be maintained of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the source; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative. (40 CFR Part 60 Subpart A § 60.7(b))

8.3 Data Replacement Requirements

8.3.1 **CEMS:** For periods when quality assured data is not available from the continuous emission monitoring systems the data replacement procedures in 40 CFR Part 75 Subpart D shall be used for determining the total (annual) emissions. Although CO emissions are not specifically referenced in the Subpart D procedures, the CEMS data acquisition system is programmed to substitute CO emissions using the same procedures specified for NO_X. For purposes of monitoring compliance with the annual emission limitations (tons/yr) replaced and bias-adjusted data shall be included when assessing compliance with the annual limitations.

8.3.2 **COMS:** When the opacity monitoring system is unable to provide quality assured data in accordance with 40 CFR Part 75 for more than eight (8) consecutive hours, the source shall utilize either a backup opacity monitor, EPA Reference Method 9, or an "Operating Report During Monitor Unavailability" to satisfy the requirements for periodic monitoring under 40 CFR 70 and Colorado Regulation No. 3.

If backup monitors are used, the next quarterly report submitted by the source shall identify the dates and times the backup monitors were in use.

If EPA Reference Method 9 observations are used, visual observations in accordance with the reference method shall be taken and recorded by the source whenever the source is in operation and while fuel is present in the boiler.

When such circumstances exist, the visual observations shall be performed by a certified opacity observer each 24 hour period thereafter over a thirty minute period until the opacity monitoring system is again able to provide quality assured data. If a visual emissions observation cannot be performed in accordance with EPA Reference Method 9, the source shall record the reasons why that is the case. Subject to the provisions of C.R.S. 25-7-123.1 and in the absence of credible evidence to the contrary, exceedance of the limit shall be considered to exist from the time a Method 9 reading is taken that shows an exceedance of the opacity limit until a Method 9 reading is taken that shows the opacity is less than the opacity limit.

If an "Operating Report During Monitor Unavailability" is used, the source shall record the opacity monitor registered reading prior to the monitor unavailability period and that immediately following such periods. A source must also record and maintain a description of unit operating characteristics that demonstrate the likelihood of compliance with the applicable opacity limitation. Such operating circumstances shall be identified on a unit specific basis and provided to the Division and shall include information related to the operation of the control equipment and any other operational parameters that may affect opacity.

8.4 Recordkeeping and Reporting Requirements

8.4.1 **Unit 1:** The owner or operator of a facility required to install, maintain, and calibrate continuous monitoring equipment shall submit to the division within 30 days following the end of each calendar quarter, a report of excess emissions for all pollutants monitored for that quarter. This report shall consist of the following information and/or other reporting requirements as specified by the division. (Colorado Regulation No. 1, Section IV.G) Excess emission and monitoring system information shall include the following information for all pollutants monitored for the quarterly period and all applicable limits of this permit.

8.4.1.1 The magnitude of excess emissions computed in accordance with division guidelines, any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. (Colorado Regulation No. 1, Section IV.G.1)

8.4.1.2 The nature and cause of the excess emissions, if known. (Colorado Regulation No. 1, Section IV.G.2)

8.4.1.3 The date and time identifying each period of equipment malfunction and the nature of the system repairs or adjustments, if any, made to correct the malfunction. (Colorado Regulation No. 1, Section IV.G.3)

8.4.1.4 A schedule of the calibration and maintenance of the continuous monitoring system. (Colorado Regulation No. 1, Section IV.G.4)

8.4.1.5 Compliance with the reporting requirements of this Section IV.G. shall not relieve the owner or operator of the reporting requirements of Section II.E. of the Common Provisions Regulation concerning affirmative defense provisions for excess emissions during malfunctions. (Colorado Regulation No. IV.G.5)

8.4.2 **Units 2 and 3:** Each owner or operator required to install a continuous monitoring device shall submit excess emissions and monitoring reports and/or summary reports as required by 40 CFR Part 60 Subpart A §§ 60.7(c) and (d). The frequency of submittal of such reports shall be quarterly and such reports shall be submitted to the Division, by the end of the calendar month following the end of each calendar quarter. Reports shall consist of the following information for all pollutants monitored for the quarterly period and all applicable limits of this permit:

8.4.2.1 Excess emission reports shall include the following information:

a. The magnitude of excess emissions computed in accordance with §60.13(h) and Division Guidelines, any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period. (§ 60.7(c)(1))

b. Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if

known), the corrective action taken or preventative measures adopted. (§ 60.7(c)(2))

c. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments. (§ 60.7(c)(3))

d. When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report. (§ 60.7(c)(4))

8.4.2.2 The summary report form shall contain the information and be in the format shown in figure 1 unless otherwise specified by the Division. One summary report form shall be submitted for each pollutant monitored at each affected facility. (§ 60.7(d))

a. If the total duration of excess emissions for the reporting period is less than 1 percent of the total operating time for the reporting period and CMS downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, only the summary report form shall be submitted and the excess emission report described in §60.7(c) need not be submitted unless requested by the Division. (§ 60.7(d)(1))

b. If the total duration of excess emissions for the reporting period is 1 percent or greater of the total operating time for the reporting period or the total CMS downtime for the reporting period is 5 percent or greater of the total operating time for the reporting period, the summary report form and the excess emission report described in §60.7(c) shall both be submitted. (§ 60.7(d)(2))

8.4.3 **Specific Reporting Requirements for NSPS Subpart Da (Unit 3):**

The reports specified below shall be submitted quarterly for Unit 3 with the reports required by Condition 8.4.2.

8.4.3.1 For SO_2 and NO_X, emissions, the performance test data and the results of monitoring system performance evaluations shall be submitted as required by § 60.51Da(a).

8.4.3.2 For SO_2 and NO_X, the information in § 60.51Da(b) shall be reported for each 24-hour period.

8.4.3.3 If the minimum quantity of data has not been obtained for any 30-day period, the information in § 60.51Da(c) shall be reported for each 30-day period.

8.4.3.4 If the SO_2 standards in Condition 2.4.3 are exceeded during emergency

conditions because of control system malfunction, the information in § 60.51Da(d) shall be reported.

8.4.3.5 For any periods in which opacity, SO_2 or NO_X emissions data are not available, the information required by § 60.51Da(f) shall be submitted.

8.4.3.6 A signed statement including the information specified in § 60.51Da(h) shall be submitted.

8.4.3.7 The reports required under Condition 8.4.3.2 may be submitted electronically as provided for in § 60.51Da(k).

8.5 Specific Provisions for NSPS Subpart Da (Unit 3)

8.5.1 If the owner or operator has installed and certified a SO_2 CEMS according to the requirements of §75.20(c)(1) of this chapter and appendix A to part 75 of this chapter, and is continuing to meet the ongoing quality assurance requirements of §75.21 of this chapter and appendix B to part 75 of this chapter, that CEMS may be used to meet the requirements of this section, provided that (§ 60.49Da(b)(4)):

8.5.1.1 A CO_2 or O_2 continuous monitoring system is installed, calibrated, maintained and operated at the same location, according to paragraph (d) of this section (§ 60.49Da(b)(4)(i)); and

8.5.1.2 The reporting requirements of §60.51Da are met. The SO_2 and, if required, CO_2 (or O_2) data reported to meet the requirements of §60.51Da shall not include substitute data values derived from the missing data procedures in subpart D of part 75 of this chapter, nor shall the SO_2data have been bias adjusted according to the procedures of part 75 of this chapter. (§ 60.49Da(b)(iii))

8.5.2 If the owner or operator has installed a NO_X emission rate CEMS to meet the requirements of part 75 of this chapter and is continuing to meet the ongoing requirements of part 75 of this chapter, that CEMS may be used to meet the requirements of this section, except that the owner or operator shall also meet the requirements of §60.51Da. Data reported to meet the requirements of §60.51Da shall not include data substituted using the missing data procedures in subpart D of part 75 of this chapter, nor shall the data have been bias adjusted according to the procedures of part 75 of this chapter. (§ 60.49Da(c)(2))

8.5.3 The CEMS under paragraphs (b), (c), and (d) of this section [Conditions 8.5.1 and 8.5.2 of this permit] are operated and data recorded during all periods of operation of the affected facility including periods of startup, shutdown, malfunction or emergency conditions, except for CEMS breakdowns, repairs, calibration checks, and zero and span adjustments. (§ 60.49Da(e))

8.5.4 For units that began construction, reconstruction, or modification after February 28, 2005, the owner or operator shall obtain emission data for at least 90 percent of all

operating hours for each 30 successive boiler operating days. If this minimum data requirement cannot be met with a CEMS, the owner or operator shall supplement emission data with other monitoring systems approved by the Administrator or the reference methods and procedures as described in paragraph (h) of this section. (§ 60.49Da(f)(2))

8.5.5 The 1-hour averages required under paragraph §60.13(h) are expressed in ng/J (lb/MMBtu) heat input and used to calculate the average emission rates under §60.48Da. The 1-hour averages are calculated using the data points required under §60.13(h)(2). (§ 60.49Da(g))

8.5.6 When it becomes necessary to supplement CEMS data to meet the minimum data requirements in paragraph (f) of this section [Condition 8.5.4 of this permit], the owner or operator shall use the reference methods and procedures as specified in § 60.49Da(h). Acceptable alternative methods and procedures are given in § 60.49Da(j). (§ 60.49Da(h))

8.5.7 The owner or operator shall use methods and procedures in this paragraph to conduct monitoring system performance evaluations under §60.13(c) and calibration checks under §60.13(d). Acceptable alternative methods and procedures are given in § 60.49Da(j). (§ 60.49Da(i))

8.5.8 The procedures specified below shall be used to determine gross output for sources demonstrating compliance with the output-based standard under §§60.42Da(c), 60.43Da(i) [Condition 2.4.3 of this permit], 60.43Da(j), 60.44Da(d)(1), and 60.44Da(e) [Condition 2.5.3 of this permit]. (§ 60.49Da(k))

8.5.8.1 The owner or operator of an affected facility with electricity generation shall install, calibrate, maintain, and operate a wattmeter; measure gross electrical output in MWh on a continuous basis; and record the output of the monitor. (§ 60.49Da(k)(1))

8.5.9 Alternatively, data from a continuous flow monitoring system certified according to the requirements of §75.20(c) of this chapter and appendix A to part 75 of this chapter, and continuing to meet the applicable quality control and quality assurance requirements of §75.21 of this chapter and appendix B to part 75 of this chapter, may be used. Flow rate data reported to meet the requirements of §60.51Da shall not include substitute data values derived from the missing data procedures in subpart D of part 75 of this chapter, nor shall the data have been bias adjusted according to the procedures of part 75 of this chapter. (§ 60.49Da(m))

8.5.10 The owner or operator shall comply with the requirements of the site-specific monitoring plan submitted in accordance with the requirements in § 60.49Da(s). The plan shall include the requirements specified in § 60.49Da(s)(1) through (6).

8.5.11 The owner or operator using a SO_2, NO_X, CO_2, and O_2CEMS to meet the requirements of this subpart shall install, certify, operate, and maintain the CEMS as specified in paragraphs (w)(1) through (w)(5) of this section. (§ 60.49Da(w))

9. Opacity Requirements and Periodic Monitoring

9.1 Opacity – Colorado Regulation No. 1, Section II.A.1

Except as provided for in Condition 9.2, below, no owner or operators of a source shall allow or cause the emission into the atmosphere of any air pollutant which is in excess of 20% opacity (Colorado Regulation No. 1, Section II.A.1). Compliance with the opacity requirements shall be monitored using the COMS required by Condition 1.9.

9.2 Opacity – Colorado Regulation No. 1, Section II.A.4

No owner or operator of a source shall allow or cause to be emitted into the atmosphere any air pollutant resulting from the building of a new fire, cleaning of fire boxes, soot blowing, start-up, process modifications or adjustment or occasional cleaning of control equipment which is in excess of 30% opacity for a period or periods aggregating more than six (6) minutes in any sixty (60) consecutive minutes (Colorado Regulation No. 1, Section II.A.4). Compliance with the opacity requirements shall be monitored using the COMS required by Condition 1.9.

A record shall be kept of the type, date and time of the commencement and completion of each and every condition subject to Colorado Regulation No. 1, Section II.A.4 that results in an exceedance. The records shall be made available for review upon request by the Division.

9.3 NSPS Opacity Requirements

Opacity of emissions shall not exceed 20% for any six-minute period, except for one six-minute period not to exceed 27% per hour (40 CFR Part 60 Subpart D § 60.42(a)(2), as adopted by reference in Colorado Regulation No. 6, Part A). Compliance with the opacity requirements shall be monitored using the COMS required by Condition 1.9.

Note that this opacity standard shall apply at all times except during periods of startup, shutdown and malfunction (40 CFR Part 60 Subpart A § 60.11(c), as adopted by reference in Colorado Regulation No. 6, Part A), however, those instances during startup, shutdown and malfunction when the opacity standard is exceeded shall be identified in the Excess Emission Report required by Condition 8.4.

Also note that this opacity standard is more stringent than the opacity standard identified in Condition 9.2 during periods of fire building, cleaning of fire boxes, soot blowing, process modifications, and adjustment and occasional cleaning of control equipment.

9.4 Unit 3 BACT Opacity Requirements

For purposes of BACT, opacity of emissions from Unit 3 are subject to the following requirements (Colorado Construction Permit 04PB1015):

9.4.1 Except as otherwise provided for below, opacity of emissions shall not exceed 10%, on a 6-minute average.

9.4.2 During periods of startup, opacity of emissions shall not exceed 30 % opacity for a period or periods aggregating more than six (6) minutes in any sixty (60) consecutive minutes.

9.4.3 During periods of shutdown, opacity of emissions shall not exceed 20% opacity, on a 6-minute average.

9.4.4 "Startup" means the setting in operation of any air pollution source for any purpose. Setting in operation for this unit begins when the fans are put into operation for purposes of starting the boiler and ends when the minimum stable operation load is achieved. The minimum stable operating load means operation at or above 340 gross MW.

9.4.5 "Shutdown" means the cessation of operation of any air pollution source for any purpose. The cessation of operation for this unit begins when the command signal is initiated to shutdown the unit and ends when fuel is no longer fired in the boiler and the fans are no longer being operated for the purpose of cooling the boiler.

Compliance with the opacity requirements shall be monitored using the COMS required by Condition 2.12.

10. Lead Periodic Monitoring

Lead emissions from the facility are subject to the General Conditions in Section V of this Permit including Recordkeeping and Reporting requirements and Fee Payment listed under Conditions 22 and 8. Annual emissions for the purposes of APEN reporting and payment of annual fees shall be based on the information submitted in the annual Toxic Release Inventory (TRI) report. The TRI report and calculation methodology shall be made available to the Division upon request.

11. Coal Sampling Requirements

Coal shall be sampled to determine the heat content, weight percent sulfur, weight percent ash and moisture content of the coal. Vendor receipts used for contractual purposes to insure fuel is delivered within specifications shall be adequate to provide the necessary data for the purposes of emission calculations and monitoring compliance with permit conditions. The permittee shall use vendor sample results from all shipments of coal received.

12. Emission Factors

The permittee shall comply with the provisions of Regulation No. 3 concerning APEN reporting. Emission factors that are approved compliance factors specified within this permit cannot be adjusted without requiring a permit modification. Emission factors and/or other emission estimating methods used only to comply with the reporting requirements of this regulation can be updated and modified as specified. These changes by themselves, do not require any permitting activities though the resulting emission estimate may trigger permitting activities.

13. Compliance Assurance Monitoring (CAM) Requirements

The Compliance Assurance Monitoring (CAM) requirements in 40 CFR Part 64, as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV, apply to Units 1, 2 and 3 as indicated in Conditions 1.18 and 2.20 and to the recycle ash silos (P007) as indicated in Condition 14.6 as follows:

13.1 For Units 1 and 2, the permittee shall follow the CAM Plan provided in Appendix G of this permit. Excursions, for purposes of reporting are as follows:

13.1.1 An opacity value greater than 15% occurring for 60 seconds or more; or

13.1.2 Any 24-hour period in which the average opacity exceeds the baseline level established by the performance tests required by Conditions 1.1.4 and/or 1.19.3.2; or

The baseline opacities set by the February 2011 performance tests required by Condition 1.1.4 are as follows: Unit 1 – 7.7% and Unit 2 – 8.0%. These values serve as the baseline opacity until the next required performance tests as specified in Conditions 1.1.4 and/or 1.19.3.2.

13.1.3 Failure to perform the semi-annual internal baghouse inspection within 60 days of the scheduled completion date.

13.2 For Unit 3 with respect to particulate matter emissions CAM has been determined as follows:

13.2.1 Prior to operation of the PM CEMS, the permittee shall follow the CAM plan provided in Appendix G for the particulate matter emission limitations. Excursions, for purposes of reporting are as follows:

13.2.1.1 Any 24-hour period in which the average opacity exceeds the baseline level established as required by Condition 2.2.4.3; or

The baseline opacity set by Condition 2.2.4.3 [based on the May 2011 performance test] is 5%. This value serves as the baseline opacity until the next required performance test is conducted as required by Condition 2.2.4.2 and the new baseline opacity is determined in accordance with Condition 2.2.4.3.

13.2.1.2 Failure to perform the semi-annual internal baghouse inspection within 60

days of the scheduled completion date.

13.2.2 Upon operation of the PM CEMS, the permittee shall monitor PM emissions using the PM CEMS required by Condition 2.14. Exceedances, for the purposes of CAM, shall be any 24-hour rolling average for which measured PM emissions exceed the PM limit in Condition 2.2.1.

Note that since the filterable PM limit in Condition 2.2.1 equals the filterable PM_{10} limit in Condition 2.3.1 the CAM requirements for the filterable PM limitation also satisfies CAM for the filterable PM_{10} limitation.

13.3 For Unit 3, the permittee shall monitor the NO_X and SO_2 concentration (lb/MMBtu) and mass emissions (lb/hr, tons/yr) using the CEMS required by Condition 2.12. Exceedances, for the purposes of CAM shall be:

13.3.1 Any 3-hr average that exceeds the SO_2 emission limitation in Condition 2.4.1 [0.4 lb/MMBtu]; or

13.3.2 Any 30-day averages of SO_2 and/or NO_X that exceed the emission limitations in Conditions 2.4.2 [SO_2 – 0.10 lb/MMBtu] and 2.5.1 [NO_X – 0.08 lb/MMBtu]; or

13.3.3 Any annual average of NO_X that exceeds the emission limitation in Condition 2.5.2 [0.07 lb/MMBtu]; or

13.3.4 Any twelve month total of SO_2 and/or NO_X that exceeds the emission limitations in Conditions 2.4.4 [SO_2 – 3,250 tons/yr] and 2.5.5 [NO_X – 2,600 tons/yr].

13.4 For Unit 3, the permittee shall follow the CAM plan provided in Appendix H for the acid gas emission limitations. Excursions, for purposes of reporting are as follows:

13.4.1 Any 30-day average of SO_2 emissions that exceed the emission limitations in Condition 2.4.2 [0.10 lb/MMBtu].

13.5 For the recycle ash silos, the permittee shall follow the CAM plan provided in Appendix I of this permit. Excursions, for purposes of reporting are as follows:

13.5.1 Any calendar day (midnight to midnight) in which visible emissions are observed, or

13.5.2 Any calendar day (midnight to midnight) in which a silo (or silos) were operating but no visible emission observation was conducted.

13.6 Excursions and/or exceedances shall be reported as required by Section V, Conditions 21 and 22.d of this permit.

13.7 Operation of Approved Monitoring

13.7.1 At all times, the owner or operator shall maintain the monitoring, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment (40 CFR Part 64 § 64.7(b), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).

13.7.2 Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of these CAM requirements, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions (40 CFR Part 64 § 64.7(c), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).

13.7.3 Response to excursions or exceedances

13.7.3.1 Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable (40 CFR Part 64 § 64.7(d)(1), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).

13.7.3.2 Determination of whether the owner of operator has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process (40 CFR Part 64 § 64.7(d)(2), as adopted by reference in Colorado

Regulation No. 3, Part C, Section XIV).

13.7.4 After approval of the monitoring required under the CAM requirements, if the owner or operator identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the owner or operator shall promptly notify the Division and, if necessary submit a proposed modification for this permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters (40 CFR Part 64 § 64.7(e), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).

13.8 Quality Improvement Plan (QIP) Requirements

13.8.1 Based on the results of a determination made under the provisions of Condition 13.7.3.2, the Division may require the owner or operator to develop and implement a QIP (40 CFR Part 64 § 64.8(a), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).

13.8.2 The owner or operator shall maintain a written QIP, if required, and have it available for inspection (40 CFR Part 64 § 64.8(b)(1), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).

13.8.3 The QIP initially shall include procedures for evaluating the control performance problems and, based on the results of the evaluation procedures, the owner or operator shall modify the plan to include procedures for conducting one or more of the following actions, as appropriate:

13.8.3.1 Improved preventative maintenance practices (40 CFR Part 64 § 64.8(b)(2)(i), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).

13.8.3.2 Process operation changes (40 CFR Part 64 § 64.8(b)(2)(ii), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).

13.8.3.3 Appropriate improvements to control methods (40 CFR Part 64 § 64.8(b)(2)(iii), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).

13.8.3.4 Other steps appropriate to correct control performance (40 CFR Part 64 § 64.8(b)(2)(iv), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).

13.8.3.5 More frequent or improved monitoring (only in conjunction with one or more steps under Conditions 13.8.3.1 through 4 above) (40 CFR Part 64 §

64.8(b)(2)(v), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).

13.8.4 If a QIP is required, the owner or operator shall develop and implement a QIP as expeditiously as practicable and shall notify the Division if the period for completing the improvements contained in the QIP exceeds 180 days from the date on which the need to implement the QIP was determined (40 CFR Part 64 § 64.8(c), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).

13.8.5 Following implementation of a QIP, upon any subsequent determination pursuant to Condition 13.7.3.2, the Division or the U.S. EPA may require that an owner or operator make reasonable changes to the QIP if the QIP is found to have:

13.8.5.1 Failed to address the cause of the control device performance problems (40 CFR Part 64 § 64.8(d)(1), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV); or

13.8.5.2 Failed to provide adequate procedures for correcting control device performance problems as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions (40 CFR Part 64 § 64.8(d)(2), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).

13.8.6 Implementation of a QIP shall not excuse the owner or operator of a source from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the federal clean air act (40 CFR Part 64 § 64.8(e), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).

13.9 Reporting and Recordkeeping Requirements

13.9.1 <u>Reporting Requirements:</u> The reports required by Section IV, Condition 22.d, shall contain the information specified in Appendix B of the permit and the following information, as applicable:

13.9.1.1 Summary information on the number, duration and cause (including unknown cause, if applicable), for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable) ((40 CFR Part 64 § 64.9(a)(2)(ii), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV); and

13.9.1.2 The owner or operator shall submit, if necessary, a description of the actions taken to implement a QIP during the reporting period as specified in Condition 13.8 of this permit. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood

of similar levels of excursions or exceedances occurring (40 CFR Part 64 § 64.9(a)(2)(iii), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).

13.9.2 General Recordkeeping Requirements: In addition to the recordkeeping requirements in Section IV, Condition 22.a through c.

13.9.2.1 The owner or operator shall maintain records of any written QIP required pursuant to Condition 13.8 and any activities undertaken to implement a QIP, and any supporting information required to be maintained under these CAM requirements (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions) (40 CFR Part 64 § 64.9(b)(1), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).

13.9.2.2 Instead of paper records, the owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements (40 CFR Part 64 § 64.9(b)(2), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).

13.10 Savings Provisions

13.10.1 Nothing in these CAM requirements shall excuse the owner or operator of a source from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the federal clean air act. These CAM requirements shall not be used to justify the approval of monitoring less stringent than the monitoring which is required under separate legal authority and are not intended to establish minimum requirements for the purposes of determining the monitoring to be imposed under separate authority under the federal clean air act, including monitoring in permits issued pursuant to title I of the federal clean air act. The purpose of the CAM requirements is to require, as part of the issuance of this Title V operating permit, improved or new monitoring at those emissions units where monitoring requirements do not exist or are inadequate to meet the requirements of CAM (40 CFR Part 64 § 64.10(a)(1), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).

13.10.2 Nothing in these CAM requirements shall restrict or abrogate the authority of the U.S. EPA or the Division to impose additional or more stringent monitoring, recordkeeping, testing or reporting requirements on any owner or operator of a source under any provision of the federal clean air act, including but not limited to sections 114(a)(1) and 504(b), or state law, as applicable (40 CFR Part 64 § 64.10(a)(2), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).

13.10.3 Nothing in these CAM requirements shall restrict or abrogate the authority of the U.S. EPA or the Division to take any enforcement action under the federal clean air act for any violation of an applicable requirement or of any person to take action under section 304 of the federal clean air act (40 CFR Part 64 § 64.10(a)(2), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).

14. Particulate Matter Emissions - Sources Supporting the SO_2 and Hg Control Systems

P007 – Recycle Ash Handling Operations: 6 Silos and 6 Mixers (2 Silos and 2 Mixers for each Unit)

Unless otherwise specified limits apply to each Unit (2 Silos and 2 Mixers for each Unit)

Parameter	Permit Condition Number	Limitations		Compliance Emission Factor	Monitoring	
		Short Term	Long Term		Method	Interval
BACT Requirements	14.1	N/A	N/A	N/A	See Condition 14.1	
PM/PM_{10}[1]	14.2	**Each Silo:** 0.01 gr/dscf **Each Mixer:** 0.015 gr/dscf	**Unit 1**: Silos 2.06 tons/yr Mixers 0.86 tons/yr **Unit 2:** Silos 2.06 tons/yr Mixers 0.86 tons/yr **Unit 3:** Silos 2.91 tons/yr Mixers 0.85 tons/yr	**Units 1 & 2:** Silos: 0.47 lb/hr Mixers: 0.10 lb.hr **Unit 3:** Silos: 0.67 lb/hr Mixers: 0.10 lb/hr	Recordkeeping and Calculation	Monthly
Recycle Ash Throughput[2]	14.3	N/A	**Unit 1** 523,340 tons/yr **Unit 2** 540,334 tons/yr **Unit 3** 847,657 tons/yr	N/A	Recordkeeping	Monthly
Hours of Operation	14.4	N/A	N/A	N/A	Recordkeeping	Monthly
Opacity	14.5	Not to Exceed 20%		N/A	See Condition 14.5	
CAM Requirements – **Silos only**	14.6	See Condition 14.6		N/A	See Condition 14.6	

[1]PM = PM_{10}
[2]Throughput limits for each Unit apply to the silos and mixers together.

P008 – Lime Handling Operations: 2 Silos and 3 Ball Mill Slakers

Parameter	Permit Condition Number	Limitations		Compliance Emission Factor	Monitoring	
		Short Term	Long Term		Method	Interval
BACT Requirements	14.1	N/A	N/A	N/A	See Condition 14.1	
PM/PM_{10}[1]	14.2	**Each Silo:** 0.01 gr/dscf **Each Slaker:** 0.015 gr/dscf	**Each Silo:** 0.075 tons/yr **Each Slaker:** 0.40 tons/yr	Silos: 0.017 lb/hr Slakers: 0.091 lb/hr	Recordkeeping and Calculation	Monthly
Lime Throughput	14.3	N/A	**Silos and Slakers Together** 55,000 tons/yr	N/A	Recordkeeping	Monthly
Hours of Operation	14.4	N/A	N/A	N/A	Recordkeeping	Monthly
Opacity	14.5	Not to Exceed 20%		N/A	See Condition 14.5	

[1]PM = PM_{10}

P009 – Sorbent Handling Operations: 2 Silos for Units 1 and 2 and 2 Silos for Unit 3

Parameter	Permit Condition Number	Limitations		Compliance Emission Factor	Monitoring	
		Short Term	Long Term		Method	Interval
BACT Requirements	14.1	N/A	N/A	N/A	See Condition 14.1	
PM/PM_{10}[1]	14.2	**Each Silo:** 0.01 gr/dscf	**Each Silo**: 0.19 tons/yr	**Each Silo:** 0.01 gr/dscf	Recordkeeping and Calculation	Monthly
Sorbent Throughput	14.3	N/A	**Units 1 and 2 Silos Together**: 5,000 tons/yr **Unit 3 Silos Together:** 5,500 tons/yr	N/A	Recordkeeping	Monthly
Hours of Operation	14.4	N/A	N/A	N/A	Recordkeeping	Monthly
Opacity	14.5	Not to Exceed 20%		N/A	See Condition 14.5	

[1]PM = PM_{10}

14.1 The recycle ash silos and mixers, lime silos and slakers and the sorbent silos are subject to the requirements of the PSD Program. BACT shall be applied for control and minimization of PM and PM_{10} emissions. BACT has been determined to be the use of baghouses on each silo and scrubbers on each mixer and slaker to achieve the outlet grain-loading limits specified in Condition 14.2.1. (Colorado Construction Permits 04PB1018 (recycle ash silos & mixers), 04PB1019 (lime silos & slakers), and 04PB1020 (sorbent silos))

14.2 Particulate Matter (PM and PM_{10}) emissions from the recycle ash silos and mixers, lime silos and slakers and sorbent silos are subject to the following limitations:

14.2.1 For purposes of BACT, PM and PM_{10} emissions shall not exceed the following limitations:

14.2.1.1 For each silo 0.01 gr/dscf

14.2.1.2 For each mixer or slaker 0.015 gr/dscf

(Colorado Construction Permits 04PB1018 (recycle ash silos & mixers), 04PB1019 (lime silos & slakers), and 04PB1020 (sorbent silos))

In the absence of credible evidence to the contrary, compliance with the BACT emission limitations shall be presumed provided the baghouses and scrubbers are operated and maintained in accordance with manufacturer's recommendations and good engineering practices. A copy of operating and maintenance procedures, schedules for maintenance and/or inspection activities and records related to the operation and maintenance of the baghouses and scrubbers and good engineering practices such as records of routine maintenance and/or inspection shall be made available to the Division upon request.

14.2.2 Annual emissions (tons/yr) from the recycle ash silos and mixers, lime silos and slakers and sorbent silos shall not exceed the annual (tons/yr) limitations specified in the above tables. (Colorado Construction Permits 04PB1018 (recycle ash silos & mixers), 04PB1019 (lime silos & slakers), and 04PB1020 (sorbent silos), as modified under the provisions of Section I, Condition 1.3 to remove the monthly emission limitations. 04PB1018 was modified under the provisions of Section I, Condition 1.3 to revise the PM and PM_{10} emission limits for the recycle ash silos and recycle mixers to the requested levels indicated on the APEN submitted April 29, 2011) Monthly emissions shall be calculated using the Unit's hours of operation (as required by Condition 14.4) and the emission factors listed in the above tables (BACT emission limitations, converted to lb/hr, based on the maximum air flow for each silo, mixer or slaker (or with respect the recycle ash silos total blower air flow per Unit)) in the equations below:

$$\text{tons/month} = \frac{\text{EF (lb/hr) x Unit hours of operation (hrs/month)}}{\text{2000 lb/ton}}$$

Note that above calculations are per silo, mixer or slaker for the recycle ash mixers, lime silos and slakers and the sorbent silos (each silo, slaker or mixer is equipped with a blower). For the recycle ash silos (2 per Unit) the blowers can serve only one silo at a time and because emissions are based on the blower operation, the above calculation estimates emissions from the pair of silos serving the Unit.

Monthly emissions **from each lime silo, sorbent silo, and lime slaker and from the each Unit's recycle ash silos and mixers** shall be used in a twelve month rolling total to monitor compliance with the annual emission limitations. Monthly emissions **from each Unit's recycle ash mixers** are determined by summing emissions from

both mixers together. Each month new twelve month rolling totals shall be calculated using the previous twelve months data.

14.3 The quantity of materials processed through the recycle ash silo and mixers, the lime silos and slakers and the sorbent silos shall not exceed the above limitations (Colorado Construction Permits 04PB1018 (recycle ash silos & mixers), 04PB1019 (lime silos & slakers) and 04PB1020 (sorbent silos), as modified under the provisions of Section I, Condition 1.3 and Colorado Regulation No. 3, Part C, Sections I.A.7 and III.B.7, to revise the throughput limits for the recycle ash silos and recycle mixers to requested levels on the APEN submitted on September 23, 2008). Compliance with the annual limitations shall be monitored by recording the quantity of material processed through the recycle ash silos, recycle mixers, lime storage silos and lime slakers monthly. The monthly quantity of material processed shall be maintained in a rolling twelve month total to monitor compliance with the annual limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

14.4 Hours of operation for each Unit (e.g. Unit 1) shall be monitored and recorded monthly. Monthly hours of operation shall be used to calculate emissions as require by Condition 14.2.2.

14.5 Opacity of emissions **from each silo, mixer and slaker exhaust point** shall not exceed 20% (Colorado Construction Permits 04PB1018 (recycle ash silos & mixers), 04PB1019 (lime silos & slakers) and 04PB1020 (sorbent silos)). Compliance with the opacity requirement shall be monitored as follows:

14.5.1 In the absence of credible evidence to the contrary, each silo shall be presumed to be in compliance with the 20% opacity limit provided each silo baghouse is operated and maintained as required by Condition 14.2.1.

14.5.2 In the absence of credible evidence to the contrary, each recycle ash mixer and lime slaker shall be presumed to be in compliance with the 20% opacity limit provided the scrubbers are operated and maintained as required by Condition 14.2.1.

14.6 The recycle ash silos are subject to CAM requirements with respect to the PM limitations in Condition 14.2. Compliance with the CAM requirements shall be monitored in accordance with the requirements in Condition 13 and the CAM Plan in Appendix I.

15. F003 – Fugitive Particulate Emissions from Vehicle Traffic on Paved and Unpaved Roads

Parameter	Permit Condition Number	Limitations		Compliance Emission Factor	Monitoring	
		Short Term	Long Term		Method	Interval
BACT Requirements	15.1	N/A	N/A	N/A	See Condition 15.1	
PM and PM_{10}	15.2	N/A	PM - 17.3 tons/yr PM_{10} - 4.48 tons/yr	See Condition 15.2	Recordkeeping and Calculation	Monthly
Hauling Restrictions	15.3	Traffic on haul roads shall occur between 6 am and 6 pm only		N/A	Recordkeeping	Daily
		Haul truck capacity shall be 35 tons or greater			Certification	Semi-Annually
		Number of haul trips shall be limited to 100 per day			Recordkeeping	Daily
Materials Hauled	15.4	N/A	Fly ash/FGD waste/spent sorbent: 549,536 tons/yr Bottom Ash 97,350 tons/yr	N/A	Recordkeeping	Monthly
Vehicle Miles Traveled	15.5	N/A	N/A	N/A	Recordkeeping	Daily
Fugitive Particulate Matter Control Plan	15.6	See Condition 15.6		N/A	See Condition 15.6	

15.1 The paved and unpaved haul roads are subject to the requirements of the PSD Program. BACT shall be applied for control and minimization of PM and PM_{10} emissions. The fugitive particulate matter control measures specified in Condition 15.6 have been determined to be BACT. (Colorado Construction Permit 04PB1022)

15.2 Particulate Matter (PM and PM_{10}) emissions shall not exceed the limitations listed in the above table. (Colorado Construction Permit 04PB1022, as modified under the provisions of Section I, Condition 1.3 to remove the monthly limitations) Monthly emissions shall be calculated using the monthly quantity of vehicle miles traveled (as required by condition 15.5) in the following equations:

$E = k \times (s/12)^a \times (W/3)^b \times ((365-p)/365)$

Tons/mo = (E x VMT)/2000 lb/ton

where: E = particulate emissions, in lb/VMT. E is from AP-42, Section 13.2.2 (dated 11/06), equations 1a and 2

VMT = vehicle miles traveled per month
k = constant, dimensionless, see table below (from AP-42, Section 13.2.2 (dated 11/06), Table 13.2.2-2)
a = constant, dimensionless, see table below
b = constant, dimensionless, see table below
s = silt content of road surface material, in % (PSCo used 5.1, per AP-42, Table 13.2.2-1, for coal mine plant road)
p = number of days with > 0.01 inches of precip. (PSCo – used 80 from AP-42, figure 13.2.2-1)
W = mean weight of vehicle, in tons (per PSCo 78.5, the average of empty 53.5 and full 103.5 weights)

A control efficiency of 90% can be applied for the paved road portions and a control efficiency of 80% can be applied for application of chemical stabilizers to the unpaved roads.

Constant	PM_{10}	PM
k	1.5	4.9
a	0.9	0.7
B	0.45	0.45

Monthly emissions shall be used in a twelve month rolling total to monitor compliance with the annual limitations. Each month a new twelve month total shall be determined using the previous twelve months data.

15.3 Hauling on the plant haul roads are subject to the following restrictions:

15.3.1 Traffic from haul trucks on the haul roads shall occur between the periods of 6 am and 6 pm only. (Colorado Construction Permit 04PB1022)

15.3.2 Haul truck capacity shall be 35 tons or greater. (Colorado Construction Permit 04PB1022)

15.3.3 The number of haul truck trips shall be limited to 100 trips per day. (Colorado Construction Permit 04PB1022)

The number of haul truck trips shall be monitored and recorded daily in order to monitor compliance with the daily limitation. Recorded information for each trip will indicate the truck route (e.g. from Unit 2 ash silo to landfill), whether the trip was one-way or round-trip, and the time of day that the trip occurred. These records shall be maintained on site and made available to the Division upon request. The source shall certify semi-annually that the requirement in Condition 15.3.2 has been met.

15.4 The quantity of materials hauled shall not exceed the limitations specified in the above table (Colorado Construction Permit 04PB1022, as modified under the provisions of Section I, condition 1.3 to remove the monthly limitations). The quantity of materials hauled shall be monitored and recorded monthly as follows:

15.4.1 The monthly quantity of fly ash/FGD waste/spent sorbent shall be determined as specified in Condition 4.5.3.

15.4.2 The monthly quantity of bottom ash from Unit 3 shall be determined using the average ash content of the coal for the month (determined through coal sampling required by Condition 2.11) and the quantity of coal burned by the unit during the month (as required by condition 2.10). A 20% bottom ash factor shall be assumed. The quantity of bottom ash shall be increased by 10% due to moisture.

15.4.3 The quantity of bottom ash from the Units 1 and 2 holding ponds shall be determined by weighing at least two trucks per day. Trucks shall be weighed empty and weighed again when they are full. The quantity of bottom ash per truck shall be estimated by subtracting the empty truck weight from the full truck weight and averaging the two truck weights together. Thereafter, bottom ash hauled shall be determined by multiplying the number of truck trips during the day by the quantity of bottom ash in a truck. Daily quantities of bottom ash hauled shall be summed together to determine the monthly quantity of bottom ash hauled.

Monthly quantities of materials hauled shall be used in twelve month rolling totals to monitor compliance with the annual limitations. Each month a new twelve month rolling total shall be calculated using the previous twelve months data.

15.5 Daily vehicle miles traveled (VMT) shall be determined by multiplying the number of daily trips (as required by condition 15.3) by the following mileage estimates per trip;

Source	Road Length – one way (miles)	
	Paved	Unpaved
Unit 1 Ash/FGD Haul from waste silo to landfill	0.0729	0.797
Unit 2 Ash/FGD Haul from waste silo to landfill	0.0751	0.496
Unit 3 Ash/FGD and Bottom Ash haul from waste silo and bottom ash storage area to landfill	0.0646	0.467
Units 1 and 2 Bottom Ash Haul from ponds to landfill	N/A	0.762

Daily VMT shall be summed together to determine the monthly VMT, which will be used to calculate emissions as required by Condition 15.2.

15.6 The haul roads are subject to the following fugitive particulate matter emissions requirements.

15.6.1 Every owner or operator of a source or activity which is required to obtain an emission permit under Regulation No. 3, Part B shall operate under an approved fugitive particulate emission control plan (Colorado Regulation No. 1, Section III.D.1.b). The following measures shall be utilized to minimize fugitive particulate matter emissions at the waste ash landfill. (Colorado Construction Permit 04PB1022)

15.6.1.1 Haul roads shall be graveled or have a hard bottom ash surface.

15.6.1.2 Vehicle speed shall not exceed 10 mph. This limit shall be posted.

15.6.1.3 Haul trucks shall be loaded in a manner to prevent spillage.

15.6.1.4 Chemical stabilizers shall be applied to unpaved active haul roads at least semi-annually. Chemical stabilizers shall be applied in accordance with good engineering practices. Records of good engineering practices, such as records of chemical stabilizer application and manufacturer's recommendations for application shall be maintained and made available to the Division upon request.

15.6.1.5 Water shall be applied to unpaved haul roads as necessary to reduce particulate matter emissions.

15.6.1.6 Paved roads shall be swept or watered as necessary to control particulate matter emissions.

The source shall certify semi-annually that the above control measures have been followed to minimized particulate matter emissions from the haul roads. Records shall be kept of the dates and times that water is applied to any haul road, the dates and times that chemical stabilizers are applied to the unpaved haul roads and the dates and times that any paved roads are swept.

15.6.2 A fugitive particulate emission control plan, or a modification to an existing plan, shall be required to be submitted if the Division determines that for this source or activity visible emissions are in excess of 20% opacity; or visible emissions are being transported off the property; or if this source or activity is operating with emissions that create a nuisance. The control plan shall be submitted to the Division within the time period specified by the Division (Colorado Regulation No. 1, Section III.D.1.c). The 20% opacity, no off-property transport, and nuisance emission limitations are guidelines and not enforceable standards and no person shall be cited for violation thereof pursuant to C.R.S. 25-7-115 (Colorado Regulation No. 1, Section III.D.1.e.(iii)).

16. E001 – Emergency Generator Rated at 2,937 hp

Parameter	Permit Condition Number	Limitations Short Term	Limitations Long Term	Compliance Emission Factor	Monitoring Method	Monitoring Interval
BACT Requirements	16.1.	N/A	N/A	N/A	See Condition 16.1	
NO_X	16.2	N/A	4.20 tons/yr	0.3 lb/gal	Recordkeeping and Calculation	Monthly
Diesel Fuel Consumption	16.3	N/A	27,800 gal/yr	N/A	Calculation	Monthly
Hours of Operation	16.4	N/A	N/A	N/A	Recordkeeping	Monthly
Opacity	16.5	Not to Exceed 20% Except as Provided for Below		N/A	EPA Method 9	Annually
		For Startup – Not to Exceed 30%, for a Period or Periods Aggregating More than Six (6) Minutes in any 60 Consecutive Minutes		N/A	See Condition 16.5	
NSPS Requirements	16.6	NO_X + NMHC – 4.8 g/hp-hr CO – 2.6 g/hp-hr PM – 0.15 g/hp-hr		N/A	See Condition 16.6	

16.1 This emergency generator is subject to the requirements of the PSD Program. BACT shall be applied for control and minimization of PM, PM_{10}, CO and VOC. BACT has been determined to be an engine certified and operated in accordance with the requirements in 40 CFR Part 60 Subpart IIII as required by Condition 16.6. (Colorado Construction Permit 08PB1178) BACT limits consist of the emission limitations in Condition 16.6.1 and the fuel limitations in Condition 16.6.3.

16.2 Nitrogen Oxide (NO_X) emissions from this engine shall not exceed the limitations specified in the above table. (Colorado Construction Permit 08PB1178) Compliance with the emission limitations shall be monitored by calculating emissions monthly using the emission factors listed above (NO_X from manufacturer "not to exceed data" at 100% load, converted to lb/gal by dividing lb/hr rate by max fuel rate (139 gal/hr)).

Monthly emissions shall be calculated by the end of the subsequent month, using the above emissions factor and the monthly diesel fuel consumption (as required by Condition 16.3) in the following equation.

$$\text{tons/mo} = \frac{\text{EF (lb/gal) x diesel fuel consumption (gal/mo)}}{\text{2000 lb/ton}}$$

Monthly emissions shall be used in a twelve month rolling total to monitor compliance with the annual limitation. Each month a new twelve month total shall be calculated using the previous twelve months data.

16.3 Consumption of Diesel Fuel shall not exceed the limitations in the above table. (Colorado Construction Permit 08PB1178) Compliance with the limitation shall be monitored by determining monthly fuel consumption from the engine by the end of the subsequent month. Monthly fuel consumption shall be determined by multiplying the maximum hourly fuel consumption rate of the engine (139 gallons/hr) by the hours the engine was operated in the month.

Monthly fuel consumption shall be used in a twelve month rolling total to monitor compliance with the annual limitation. Each month a new twelve month total shall be calculated using the previous twelve months data.

16.4 Hours of operation shall be recorded monthly and used to calculate the monthly fuel consumption as required by Condition 16.3.

16.5 Opacity of emissions shall not exceed the following:

16.5.1 Except as provided for in Condition 16.5.2 below, no owner or operator of a source shall allow or cause the emission into the atmosphere of any air pollutant which is in excess of 20% opacity (Colorado Construction Permit 08PB1178 and Colorado Regulation No. 1, Section II.A.1).

16.5.2 No owner or operator of a source shall allow or cause to be emitted into the atmosphere any air pollutant resulting from startup which is in excess of 30% opacity for a period or periods aggregating more than six (6) minutes in any sixty (60) consecutive minutes (Colorado Regulation No. 1, Section II.A.4).

Compliance with these limitations shall be monitored by conducting visual emission observations in accordance with EPA Reference Method 9 as follows:

16.5.3 Engine startup shall not exceed 30 minutes. An engine startup period of less than 30 minutes shall not require an opacity observation to monitor compliance with the opacity limit in Condition 16.5.2. A record shall be kept of the date and time the engine started and when it was shutdown.

16.5.4 An opacity observation shall be conducted annually (calendar year period) to monitor compliance with the opacity limit in Condition 16.5.1. If the engine is operated more than 250 hours in any calendar year period, a second opacity observation shall be conducted. If two opacity readings are conducted in the annual (calendar year) period, such readings shall be conducted at least thirty days apart.

16.5.5 If the engine is not operated during the annual (calendar year) period, then no opacity observations are required.

16.5.6 Subject to the provisions of C.R.S. 25-7-123.1 and in the absence of credible evidence to the contrary, exceedance of the opacity limit shall be considered to exist from the time a Method 9 reading is taken that shows an exceedance of the opacity limit until a Method 9 reading is taken that shows the opacity is less than the opacity limit.

16.5.7 All Method 9 opacity observations shall be performed by an observer with current and valid Method 9 certification. Results of Method 9 readings and a copy of the certified Method 9 reader's certificate shall be kept on site and made available to the Division upon request.

16.6 This engine is subject to the requirements in 40 CFR Part 60 Subpart IIII, "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines", as adopted by reference in Colorado Regulation No. 6, Part A, including but not limited to the following requirements:

What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine? (§ 60.4205)

16.6.1 Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in §60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE. (§ 60.4205(b))

Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (a)(1) through (2) of this section. (§ 60.4202(a))

For engines with a maximum engine power greater than or equal to 37 KW (50 HP), the certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants beginning in model year 2007. (§ 60.4202(a)(2))

The specific emission limitations in 40 CFR 89.112 that apply to this unit are as follows:

Tier II requirements for Model Engines Greater than 560 kW					
Emission Standards (g/kW-hr)			Emission Standards (g/hp-hr)		
NMHC + NOX	CO	PM	NMHC + NOX	CO	PM
6.4	3.5	0.2	4.77	2.61	0.15

Note that the smoke standards in 40 CFR 89.113 do not apply because the engine is a constant speed engine (89.113(c)(3)).

How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine? (§ 60.4206)

16.6.2 Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in §§60.4204 and 60.4205 according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer, over the entire life of the engine

What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart? (§ 60.4207)

16.6.3 Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel. ((§ 60.4207(a))

The fuel limitations in 80.510(b) are: sulfur content of 15 ppm maximum for NR diesel fuel and 500 ppm maximum for LM diesel fuel and a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.

The diesel fuel in the engine's day tank shall be sampled and analyzed within 60 days of permit issuance to determine the sulfur and cetane and/or aromatic content using appropriate ASTM methods, or equivalent if approved in advance by the Division. If the tank is empty prior to permit issuance, sampling of the day tank is not required, compliance shall be monitored by sampling each shipment of diesel fuel as specified below.

Thereafter compliance with the fuel limitations shall be monitored by sampling and analyzing each shipment of diesel fuel to determine the sulfur and cetane and/or aromatic content using appropriate ASTM methods, or equivalent if approved in advance by the Division. In lieu of sampling, vendor data may be used to determine the sulfur and cetane and/or aromatic content, provided that the sampling and analysis was performed using the appropriate ASTM methods.

What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine? (§ 60.4209)

If you are an owner or operator, you must meet the monitoring requirements of this section. In addition, you must also meet the monitoring requirements specified in §60.4211.

16.6.4 If you are an owner or operator of an emergency stationary CI internal combustion engine, you must install a non-resettable hour meter prior to startup of the engine. (§ 60.4209(a))

16.6.5 If you are an owner or operator of a stationary CI internal combustion engine equipped with a diesel particulate filter to comply with the emission standards in §60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached. (§ 60.4209(b))

What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine? (§ 60.4211)

16.6.6 If you are an owner or operator and must comply with the emission standards specified in this subpart, you must operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer. In addition, owners and operators may only change those settings that are permitted by the manufacturer. You must also meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply to you. (§ 60.4211(a))

16.6.7 If you are an owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in §60.4204(b) or §60.4205(b), or if you are an owner or operator of a CI fire pump engine that is manufactured during or after the model year that applies to your fire pump engine power rating in table 3 to this subpart and must comply with the emission standards specified in §60.4205(c), you must comply by purchasing an engine certified to the emission standards in §60.4204(b), or §60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's specifications. (§ 60.4211(c))

16.6.8 Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations. Anyone may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency ICE beyond 100 hours per year. For owners and operators of emergency engines meeting standards under §60.4205 but not §60.4204, any operation other than emergency operation, and maintenance and testing as permitted in this section, is prohibited. (§ 60.4211(e))

What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine? (§ 60.4214)

16.6.9 If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to this subpart, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time. (§ 60.4214(b))

16.6.10 If the stationary CI internal combustion engine is equipped with a diesel particulate filter, the owner or operator must keep records of any corrective action taken after the backpressure monitor has notified the owner or operator that the high backpressure limit of the engine is approached. (§ 60.4214(c))

What parts of the general provisions apply to me? (§ 60.4218)

16.6.11 Table 8 of this subpart shows which parts of the General Provisions in §§ 60.1 through 60.19 apply to you. (§ 60.4218) The relevant general provision is included in Condition 6.2.

SECTION III - Acid Rain Requirements

1. Designated Representative and Alternate Designated Representative

Designated Representative:		Alternate Designated Representative:	
Name:	George Hess	Name:	Gary Magno
Title:	General Manager, Power Generation, Colorado	Title:	Manager Environmental Services - Air Quality Compliance
Phone:	(303) 571-7282	Phone:	(303) 294-2177

2. Sulfur Dioxide Emission Allowances and Nitrogen Oxide Emission Limitations

	2012	2013	2014	2015	2016	2017
Unit 1 - SO_2 Allowances, per 40 CFR Part 73.10(b), Table 2	7363*	7363*	7363*	7363*	7363*	7363*
Unit 1 – NO_X Limits, per 40 CFR Part 76.7(a)(1)	0.40 lb/MMBtu	0.40 lb/MMBtu	0.40 lb/MMBtu	0.40 lb/MMBtu	0.40 lb/MMBtu	0.40 lb/MMBtu
Unit 2 - SO_2 Allowances, per 40 CFR Part 73.10(b), Table 2	6450*	6450*	6450*	6450*	6861*	6450*
Unit 2 – NO_X Limits, per 40 CFR Part 76.7(a)(2)	0.46 lb/MMBtu	0.46 lb/MMBtu	0.46 lb/MMBtu	0.46 lb/MMBtu	0.46 lb/MMBtu	0.46 lb/MMBtu
Unit 3 - SO_2 Allowances, per 40 CFR Part 73.10(b), Table 2	0*	0*	0*	0*	0*	0*
Unit 3 – NO_X limits	This Unit Has No Acid Rain Program NO_X Limits (See Section 5)					

* Under the provisions of § 72.84(a) any allowance allocations to, transfers to and deductions from an affected unit's Allowance Tracking System account is considered an automatic permit amendment and as such no revision to the permit is necessary. Numerical allowances shown in this table are from the July 2001 edition of the CFR (total annual allowances for years 2010 and beyond in table 2 of § 73.10(b)).

3. Standard Requirements

Units 1, 2 and 3 of this facility are subject to and the source has certified that they will comply with the following standard conditions.

Permit Requirements.

(1) The designated representative of each affected source and each affected unit at the source shall:
   (i) Submit a complete Acid Rain permit application (including a compliance plan) under 40 CFR part 72 in accordance with the deadlines specified in 40 CFR 72.30; and
   (ii) Submit in a timely manner any supplemental information that the Division determines is necessary in order to review an Acid Rain permit application and issue or deny an Acid Rain permit;

(2) The owners and operators of each affected source and each affected unit at the source shall:
   (i) Operate the unit in compliance with a complete Acid Rain permit application or a superseding Acid Rain permit issued by the Division; and
   (ii) Have an Acid Rain Permit.

Monitoring Requirements.

(1) The owners and operators and, to the extent applicable, designated representative of each affected source and each affected unit at the source shall comply with the monitoring requirements as provided in 40 CFR part 75.

(2) The emissions measurements recorded and reported in accordance with 40 CFR part 75 shall be used to determine compliance by the source or unit, as appropriate, with the Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program.

(3) The requirements of 40 CFR part 75 shall not affect the responsibility of the owners and operators to monitor emissions of other pollutants or other emissions characteristics at the unit under other applicable requirements of the Federal Clean Air Act and other provisions of the operating permit for the source.

Sulfur Dioxide Requirements.

(1) The owners and operators of each source and each affected unit at the source shall:
   (i) Hold allowances, as of the allowance transfer deadline, in the source's compliance account (after deductions under 40 CFR 73.34(c)), not less than the total annual emissions of sulfur dioxide for the previous calendar year from the affected units at the source; and
   (ii) Comply with the applicable Acid Rain emissions limitations for sulfur dioxide.

(2) Each ton of sulfur dioxide emitted in excess of the Acid Rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Federal Clean Air Act.

(3) An affected unit shall be subject to the requirements under paragraph (1) of the sulfur dioxide requirements as follows:
   (i) Starting January 1, 2000, an affected unit under 40 CFR 72.6(a)(2); or
   (ii) Starting on the later of January 1, 2000 or the deadline for monitor certification under 40 CFR part 75, an affected unit under 40 CFR 72.6(a)(3).

(4) Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program.

(5) An allowance shall not be deducted in order to comply with the requirements under paragraph (1) of the sulfur dioxide requirements prior to the calendar year for which the allowance was allocated.

(6) An allowance allocated by the Administrator under the Acid Rain Program is a limited authorization to emit sulfur dioxide in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the Acid Rain permit application, the Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization.

(7) An allowance allocated by the Administrator under the Acid Rain Program does not constitute a property right.

Nitrogen Oxides Requirements. The owners and operators of the source and each affected unit at the source shall comply with the applicable Acid Rain emissions limitation for nitrogen oxides.

Excess Emissions Requirements.

(1) The designated representative of an affected source that has excess emissions in any calendar year shall submit a proposed offset plan to the Administrator of the U. S. EPA, as required under 40 CFR part 77.

(2) The owners and operators of an affected source that has excess emissions in any calendar year shall:
   - (i) Pay without demand, to the Administrator of the U. S. EPA, the penalty required, and pay upon demand the interest on that penalty, as required by 40 CFR part 77; and
   - (ii) Comply with the terms of an approved offset plan, as required by 40 CFR part 77.

Recordkeeping and Reporting Requirements.

(1) Unless otherwise provided, the owners and operators of the source and each affected unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 5 years, in writing by the Administrator or the Division:
   - (i) The certificate of representation for the designated representative for the source and each affected unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation changing the designated representative;
   - (ii) All emissions monitoring information, in accordance with 40 CFR part 75, provided that to the extent that 40 CFR provides for a 3-year period of recordkeeping, the 3-year period shall apply.
   - (iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the Acid Rain Program; and,
   - (iv) Copies of all documents used to complete an Acid Rain permit application and any other submission under the Acid Rain Program or to demonstrate compliance with the requirements of the Acid Rain Program.

(2) The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR part 72 subpart I and 40 CFR part 75.

Liability.

(1) Any person who knowingly violates any requirement or prohibition of the Acid Rain Program, a complete Acid Rain permit application, an Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8, including any requirement for the payment of any penalty owed to the United States, shall be subject to enforcement pursuant to section 113(c) of the Federal Clean Air Act.
(2) Any person who knowingly makes a false, material statement in any record, submission, or report under the Acid Rain Program shall be subject to criminal enforcement pursuant to section 113(c) of the Federal Clean Air Act and 18 U.S.C. 1001.
(3) No permit revision shall excuse any violation of the requirements of the Acid Rain Program that occurs prior to the date that the revision takes effect.
(4) Each affected source and each affected unit shall meet the requirements of the Acid Rain Program.
(5) Any provision of the Acid Rain Program that applies to an affected source (including a provision applicable to the designated representative of an affected source) shall also apply to the owners and operators of such source and of the affected units at the source.
(6) Any provision of the Acid Rain Program that applies to an affected unit (including a provision applicable to the designated representative of an affected usnit) shall also apply to the owners and operators of such unit.
(7) Each violation of a provision of 40 CFR parts 72, 73, 74, 75, 76, 77, and 78 by an affected source or affected unit, or by an owner or operator or designated representative of such source or unit, shall be a separate violation of the Federal Clean Air Act.

Effect on Other Authorities. No provision of the Acid Rain Program, an Acid Rain permit application, an Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8 shall be construed as:

(1) Except as expressly provided in title IV of the Federal Clean Air Act, exempting or excluding the owners and operators and, to the extent applicable, the designated representative of an affected source or affected unit from compliance with any other provision of the Federal Clean Air Act, including the provisions of title I of the Federal Clean Air Act relating to applicable National Ambient Air Quality Standards or State Implementation Plans;
(2) Limiting the number of allowances a unit can hold; *provided*, that the number of allowances held by the unit shall not affect the source's obligation to comply with any other provisions of the Federal Clean Air Act;
(3) Requiring a change of any kind in any State law regulating electric utility rates and charges, affecting any State law regarding such State regulation, or limiting such State regulation, including any prudence review requirements under such State law;
(4) Modifying the Federal Power Act or affecting the authority of the Federal Energy Regulatory Commission under the Federal Power Act; or,
(5) Interfering with or impairing any program for competitive bidding for power supply in a State in which such program is established.

4. Reporting Requirements

Reports shall be submitted to the addresses identified in Appendix D.

Pursuant to 40 CFR Part 75.64 quarterly reports and compliance certification requirements shall be submitted to the Administrator **within 30 days after the end of the calendar quarter**. The contents of these reports shall meet the requirements of 40 CFR 75.64.

Pursuant to 40 CFR Part 75.65 excess emissions of opacity shall be reported to the Division. These reports shall be submitted in a format approved by the Division.

Revisions to this permit shall be made in accordance with 40 CFR Part 72, Subpart H, §§ 72.80 through 72.85 (as adopted by reference in Colorado Regulation 18). Permit modification requests shall be submitted to the Division at the address identified in Appendix D.

5. Comments, Notes and Justifications

Unit 3 does not meet the definition of a coal-fired utility unit in 40 CFR Part 76, since no coal or coal-derived fuel was burned in this unit in calendar years 1990 – 1995. The NO_X limitations in 40 CFR Part 76 are only applicable to coal-fired utility units and thus do not apply to Unit 3.

SECTION IV - Permit Shield

Regulation No. 3, 5 CCR 1001-5, Part C, §§ I.A.4, V.D., & XIII.B and § 25-7-114.4(3)(a), C.R.S.

1. Specific Non-Applicable Requirements

Based on the information available to the Division and supplied by the applicant, the following parameters and requirements have been specifically identified as non-applicable to the facility to which this permit has been issued. This shield does not protect the source from any violations that occurred prior to or at the time of permit issuance. In addition, this shield does not protect the source from any violations that occur as a result of any modifications or reconstruction on which construction commenced prior to permit issuance.

Emission Unit Description & Number	Applicable Requirement	Justification
Unit B001	40 CFR Part 60, Subparts D, Da, Db, and Dc (as adopted by reference in Colorado Regulation No. 6, Part A)	These requirements are not applicable as construction commenced prior to August 17, 1971 (D, Da and Db) and this boiler is not a small industrial-commercial-institutional steam generating unit (Dc).
Unit B002	40 CFR Part 60, Subparts Da, Db, and Dc (as adopted by reference in Colorado Regulation No. 6, Part A)	These requirements are not applicable as construction commenced prior to September 18, 1978 (Da and Db) and this boiler is not a small industrial-commercial-institutional steam generating units (Dc).
Units 1 and 2 coal handling equipment (from pile to units).	40 CFR Part 60, Subpart Y (as adopted by reference in Colorado Regulation No. 6, Part A)	This requirement is not applicable because the facility commenced construction prior to October 24, 1974.
Rail Car Unloader, Conveying to Piles, Storage Piles		Open storage piles, which include the equipment used in loading, unloading and conveying to the pile, that commenced construction prior to May 27, 2009 are not subject to the requirements in 40 CFR Part 60 Subpart Y.
Facility	Colorado Regulation No. 6, Part B, Section II	These requirements are not applicable as construction commenced prior to January 30, 1979.
Facility	40 CFR Part 63, Subpart Q (as adopted by reference in Colorado Regulation No. 8, Part E)	These requirements are not applicable because the cooling towers do not use chromium-based water treatment chemicals.
Facility	Colorado Regulation No. 7 (except for Section V, Paragraphs VI.B.1 and 2, and Subsection VII.C)	These requirements are not applicable because this facility is not located in an ozone non-attainment area.
Facility	Colorado Regulation No. 7, Section V.B	This requirement is not applicable since the facility is not a bulk gasoline terminal, bulk gasoline plant or gas dispensing facility.
Facility	Colorado Regulation No. 7, Sections VI.B.1 and 2	These requirements are not applicable as the liquids stored in tanks greater than 40,000 gallons are exempt from the provisions of Section VI.B.2 per Section VI.B.1.a.
Facility	Colorado Regulation No. 7, Section VII.C	This requirement is not applicable as crude oil is not stored in tanks exceeding 40,000 gallons.

2. General Conditions

Compliance with this Operating Permit shall be deemed compliance with all applicable requirements specifically identified in the permit and other requirements specifically identified in the permit as not applicable to the source. This permit shield shall not alter or affect the following:

2.1 The provisions of §§ 25-7-112 and 25-7-113, C.R.S., or § 303 of the federal act, concerning enforcement in cases of emergency;

2.2 The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;

2.3 The applicable requirements of the federal Acid Rain Program, consistent with § 408(a) of the federal act;

2.4 The ability of the Air Pollution Control Division to obtain information from a source pursuant to § 25-7-111(2)(I), C.R.S., or the ability of the Administrator to obtain information pursuant to § 114 of the federal act;

2.5 The ability of the Air Pollution Control Division to reopen the Operating Permit for cause pursuant to Regulation No. 3, Part C, § XIII.

2.6 Sources are not shielded from terms and conditions that become applicable to the source subsequent to permit issuance.

3. Streamlined Conditions

The following applicable requirements have been subsumed within this operating permit using the pertinent streamlining procedures approved by the U.S. EPA. For purposes of the permit shield, compliance with the listed permit conditions will also serve as a compliance demonstration for purposes of the associated subsumed requirements.

Permit Condition(s)	Streamlined (Subsumed) Requirements
Section II, Conditions 2.16 and 9.4	Colorado Regulation No. 1, Section II.A.1 [20% opacity requirement]
Section II, Conditions 2.16 and 9.4	Colorado Regulation No. 1, Section II.A.4 [30% opacity requirements, under certain conditions]
Section II, Condition 2.2.1	Colorado Regulation No. 1, Section II.A.1.c [particulate matter emissions shall not exceed 0.1 lb/MMBtu]
Section II, Conditions 8.1, and 8.2	Colorado Regulation No. 1, Sections IV.A & B [general continuous emission monitoring requirements]
Section V, Conditions 22.b & c	Colorado Regulation No. 1, Section IV. H [continuous emission monitoring requirements - maintaining a file of continuous emission monitoring records]
Section II, Conditions 8.1 and 8.4.2	Colorado Regulation No. 1, Section IV. F and G [continuous emission monitoring requirements – calibration requirements and excess emission reporting requirements] **for Units 2 and 3 Only**

Permit Condition(s)	Streamlined (Subsumed) Requirements
Section II, Condition 16.6.3	Colorado Regulation No. 1, Section VI.B.4.b.(i) [SO_2 emissions shall not exceed 0.8 lb/MMBtu]
Section II, Condition 13.5	Colorado Regulation No. 3, Part F, Section VII.E [ONLY the paragraph related to submittal of semi-annual reports for any excursions under CAM]
Section II, Condition 1.19.5.3.	Colorado Regulation No. 3, Part F, Section VII.E [ONLY the paragraph related to submittal of PM performance test results within 60 days]
Section II, Condition 1.1	40 CFR Part 60 Subpart D § 60.42(a), as adopted by reference in Colorado Regulation No. 6, Part A [particulate matter emissions shall not exceed 0.1 lb/MMBtu] **for Unit 2 Only**
Section II, Condition 1.3	40 CFR Part 60 Subpart D § 60.43(a)(2), as adopted by reference in Colorado Regulation No. 6, Part A [SO_2 emissions shall not exceed 1.2 lb/MMBtu, when burning coal] **for Unit 2 Only**
Section II, Conditions 8.1 and 8.2	40 CFR Part 60 Subpart D §§ 60.45(a), (c) **EXCEPT (c)(3) as it applies to COMS**, (e) and (f) as adopted by reference in Colorado Regulation No. 6, Part A [continuous emission monitoring requirements] **for Unit 2 Only**
Section II, Conditions 2.16 and 9.4	40 CFR Part 60 Subpart Da § 60.42Da(b) [opacity not to exceed 20%, except for one 6-minute period per hour of not more than 27%]
Section II, Condition 2.2.1	40 CFR Part 60 Subpart Da § 60.42(c)(1) [particulate matter emissions not to exceed 0.015 lb/MMBtu]
Section II, Conditions 2.2.5 and 2.14	40 CFR Part 60 Subpart Da §§ 60.48Da(g)(3) and (p) and 60.49Da(t) and (v) [PM CEMS option for monitoring compliance NSPS Da PM emission limitation]
Section II, Condition 2.2.4	40 CFR Part 60 Subpart Da § 60.48Da(o)(1) and (2) [PM monitoring via annual stack test and 24-hour opacity option for monitoring compliance with NSPS Da PM emission limitation]
Section II, Condition 6	Colorado Regulation No. 6, Part B, Section I [general provisions] – **State-only Requirement**
Section II, Conditions 2.16 and 9.4	Colorado Regulation No. 6, Part B, Section II.C.3 [20% opacity limit] **State-only Requirement**
Section II, Condition 2.4.1	Colorado Regulation No. 6, Part B, Section II.D.1.c [SO_2 emissions shall not exceed 0.4 lb/MMBtu] **State-only Requirement**
Section II, Condition 2.15.1	Colorado Construction Permit 04PB1015, Condition 15.d [Hg emissions shall not exceed 20 x 10^{-6} lb/MWh, on a 12-month rolling average]

SECTION V - General Permit Conditions

11/16/10 version

1. Administrative Changes

Regulation No. 3, 5 CCR 1001-5, Part A, § III.

The permittee shall submit an application for an administrative permit amendment to the Division for those permit changes that are described in Regulation No. 3, Part A, § I.B.1. The permittee may immediately make the change upon submission of the application to the Division.

2. Certification Requirements

Regulation No. 3, 5 CCR 1001-5, Part C, §§ III.B.9., V.C.16.a.& e. and V.C.17.

a. Any application, report, document and compliance certification submitted to the Air Pollution Control Division pursuant to Regulation No. 3 or the Operating Permit shall contain a certification by a responsible official of the truth, accuracy and completeness of such form, report or certification stating that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.

b. All compliance certifications for terms and conditions in the Operating Permit shall be submitted to the Air Pollution Control Division at least annually unless a more frequent period is specified in the applicable requirement or by the Division in the Operating Permit.

c. Compliance certifications shall contain:

(i) the identification of each permit term and condition that is the basis of the certification;

(ii) the compliance status of the source;

(iii) whether compliance was continuous or intermittent;

(iv) method(s) used for determining the compliance status of the source, currently and over the reporting period; and

(v) such other facts as the Air Pollution Control Division may require to determine the compliance status of the source.

d. All compliance certifications shall be submitted to the Air Pollution Control Division and to the Environmental Protection Agency at the addresses listed in Appendix D of this Permit.

e. If the permittee is required to develop and register a risk management plan pursuant to § 112(r) of the federal act, the permittee shall certify its compliance with that requirement; the Operating Permit shall not incorporate the contents of the risk management plan as a permit term or condition.

3. Common Provisions

Common Provisions Regulation, 5 CCR 1001-2 §§ II.A., II.B., II.C., II,.E., II.F., II.I, and II.J

a. To Control Emissions Leaving Colorado

When emissions generated from sources in Colorado cross the State boundary line, such emissions shall not cause the air quality standards of the receiving State to be exceeded, provided reciprocal action is taken by the receiving State.

b. Emission Monitoring Requirements

The Division may require owners or operators of stationary air pollution sources to install, maintain, and use instrumentation to monitor and record emission data as a basis for periodic reports to the Division.

c. Performance Testing

The owner or operator of any air pollution source shall, upon request of the Division, conduct performance test(s) and furnish the Division a written report of the results of such test(s) in order to determine compliance with applicable emission control regulations.

Performance test(s) shall be conducted and the data reduced in accordance with the applicable reference test methods unless the Division:

(i) specifies or approves, in specific cases, the use of a test method with minor changes in methodology;

(ii) approves the use of an equivalent method;

(iii) approves the use of an alternative method the results of which the Division has determined to be adequate for indicating where a specific source is in compliance; or

(iv) waives the requirement for performance test(s) because the owner or operator of a source has demonstrated by other means to the Division's satisfaction that the affected facility is in compliance with the standard. Nothing in this paragraph shall be construed to abrogate the Commission's or Division's authority to require testing under the Colorado Revised Statutes, Title 25, Article 7, and pursuant to regulations promulgated by the Commission.

Compliance test(s) shall be conducted under such conditions as the Division shall specify to the plant operator based on representative performance of the affected facility. The owner or operator shall make available to the Division such records as may be necessary to determine the conditions of the performance test(s). Operations during period of startup, shutdown, and malfunction shall not constitute representative conditions of performance test(s) unless otherwise specified in the applicable standard.

The owner or operator of an affected facility shall provide the Division thirty days prior notice of the performance test to afford the Division the opportunity to have an observer present. The Division may waive the thirty day notice requirement provided that arrangements satisfactory to the Division are made for earlier testing.

The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:

(i) Sampling ports adequate for test methods applicable to such facility;

(ii) Safe sampling platform(s);

(iii) Safe access to sampling platform(s); and

(iv) Utilities for sampling and testing equipment.

Each performance test shall consist of at least three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic mean of results of at least three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the owner or operator's control, compliance may, upon the Division's approval, be determined using the arithmetic mean of the results of the two other runs.

Nothing in this section shall abrogate the Division's authority to conduct its own performance test(s) if so warranted.

d. Affirmative Defense Provision for Excess Emissions during Malfunctions

Note that until such time as the U.S. EPA approves this provision into the Colorado State Implementation Plan (SIP), it shall be enforceable only by the State.

An affirmative defense to a claim of violation under these regulations is provided to owners and operators for civil penalty actions for excess emissions during periods of malfunction. To establish the affirmative defense and to be relieved of a civil penalty in any action to enforce an applicable requirement, the owner or operator of the facility must meet the notification requirements below in a timely manner and prove by a preponderance of evidence that:

(i) The excess emissions were caused by a sudden, unavoidable breakdown of equipment, or a sudden, unavoidable failure of a process to operate in the normal or usual manner, beyond the reasonable control of the owner or operator;

(ii) The excess emissions did not stem from any activity or event that could have reasonably been foreseen and avoided, or planned for, and could not have been avoided by better operation and maintenance practices;

(iii) Repairs were made as expeditiously as possible when the applicable emission limitations were being exceeded;

(iv) The amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions;

(v) All reasonably possible steps were taken to minimize the impact of the excess emissions on ambient air quality;

(vi) All emissions monitoring systems were kept in operation (if at all possible);

(vii) The owner or operator's actions during the period of excess emissions were documented by properly signed, contemporaneous operating logs or other relevant evidence;

(viii) The excess emissions were not part of a recurring pattern indicative of inadequate design, operation, or maintenance;

(ix) At all times, the facility was operated in a manner consistent with good practices for minimizing emissions. This section is intended solely to be a factor in determining whether an affirmative defense is available to an owner or operator, and shall not constitute an additional applicable requirement; and

(x) During the period of excess emissions, there were no exceedances of the relevant ambient air quality standards established in the Commissions' Regulations that could be attributed to the emitting source.

The owner or operator of the facility experiencing excess emissions during a malfunction shall notify the division verbally as soon as possible, but no later than noon of the Division's next working day, and shall submit written notification following the initial occurrence of the excess emissions by the end of the source's next reporting period. The notification shall address the criteria set forth above.

The Affirmative Defense Provision contained in this section shall not be available to claims for injunctive relief.

The Affirmative Defense Provision does not apply to failures to meet federally promulgated performance standards or emission limits, including, but not limited to, new source performance standards and national emission standards for hazardous air pollutants. The affirmative defense provision does not apply to state implementation plan (sip) limits or permit limits that have been set taking into account potential emissions during malfunctions, including, but not necessarily limited to, certain limits with 30-day or longer averaging times, limits that indicate they apply during malfunctions, and limits that indicate they apply at all times or without exception.

e. Circumvention Clause

A person shall not build, erect, install, or use any article, machine, equipment, condition, or any contrivance, the use of which, without resulting in a reduction in the total release of air pollutants to the atmosphere, reduces or conceals an emission which would otherwise constitute a violation of this regulation. No person shall circumvent this regulation by using more openings than is considered normal practice by the industry or activity in question.

f. Compliance Certifications

For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in the Colorado State Implementation Plan, nothing in the Colorado State Implementation Plan shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed. Evidence that has the effect of making any relevant standard or permit term more stringent shall not be credible for proving a violation of the standard or permit term.

When compliance or non-compliance is demonstrated by a test or procedure provided by permit or other applicable requirement, the owner or operator shall be presumed to be in compliance or non-compliance unless other relevant credible evidence overcomes that presumption.

g. Affirmative Defense Provision for Excess Emissions During Startup and Shutdown

Note that until such time as the U.S. EPA approves this provision into the Colorado State Implementation Plan (SIP), it shall apply only to State-Only permit terms and conditions and shall be enforceable only by the State.

An affirmative defense is provided to owners and operators for civil penalty actions for excess emissions during periods of startup and shutdown. To establish the affirmative defense and to be relieved of a civil penalty in any action to enforce an applicable requirement, the owner or operator of the facility must meet the notification requirements below in a timely manner and prove by a preponderance of the evidence that:

(i) The periods of excess emissions that occurred during startup and shutdown were short and infrequent and could not have been prevented through careful planning and design;

(ii) The excess emissions were not part of a recurring pattern indicative of inadequate design, operation or maintenance;

(iii) If the excess emissions were caused by a bypass (an intentional diversion of control equipment), then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(iv) The frequency and duration of operation in startup and shutdown periods were minimized to the maximum extent practicable;

(v) All possible steps were taken to minimize the impact of excess emissions on ambient air quality;

(vi) All emissions monitoring systems were kept in operation (if at all possible);

(vii) The owner or operator's actions during the period of excess emissions were documented by properly signed, contemporaneous operating logs or other relevant evidence; and,

(viii) At all times, the facility was operated in a manner consistent with good practices for minimizing emissions. This subparagraph is intended solely to be a factor in determining whether an affirmative defense is available to an owner or operator, and shall not constitute an additional applicable requirement.

The owner or operator of the facility experiencing excess emissions during startup and shutdown shall notify the Division verbally as soon as possible, but no later than two (2) hours after the start of the next working day, and shall

submit written quarterly notification following the initial occurrence of the excess emissions. The notification shall address the criteria set forth above.

The Affirmative Defense Provision contained in this section shall not be available to claims for injunctive relief.

The Affirmative Defense Provision does not apply to State Implementation Plan provisions or other requirements that derive from new source performance standards or national emissions standards for hazardous air pollutants, or any other federally enforceable performance standard or emission limit with an averaging time greater than twenty-four hours. In addition, an affirmative defense cannot be used by a single source or small group of sources where the excess emissions have the potential to cause an exceedance of the ambient air quality standards or Prevention of Significant Deterioration (PSD) increments.

In making any determination whether a source established an affirmative defense, the Division shall consider the information within the notification required above and any other information the Division deems necessary, which may include, but is not limited to, physical inspection of the facility and review of documentation pertaining to the maintenance and operation of process and air pollution control equipment

4. Compliance Requirements

Regulation No. 3, 5 CCR 1001-5, Part C, §§ III.C.9., V.C.11. & 16.d. and § 25-7-122.1(2), C.R.S.

a. The permittee must comply with all conditions of the Operating Permit. Any permit noncompliance relating to federally-enforceable terms or conditions constitutes a violation of the federal act, as well as the state act and Regulation No. 3. Any permit noncompliance relating to state-only terms or conditions constitutes a violation of the state act and Regulation No. 3, shall be enforceable pursuant to state law, and shall not be enforceable by citizens under § 304 of the federal act. Any such violation of the federal act, the state act or regulations implementing either statute is grounds for enforcement action, for permit termination, revocation and reissuance or modification or for denial of a permit renewal application.

b. It shall not be a defense for a permittee in an enforcement action or a consideration in favor of a permittee in a permit termination, revocation or modification action or action denying a permit renewal application that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

c. The permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of any request by the permittee for a permit modification, revocation and reissuance, or termination, or any notification of planned changes or anticipated noncompliance does not stay any permit condition, except as provided in §§ X. and XI. of Regulation No. 3, Part C.

d. The permittee shall furnish to the Air Pollution Control Division, within a reasonable time as specified by the Division, any information that the Division may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Division copies of records required to be kept by the permittee, including information claimed to be confidential. Any information subject to a claim of confidentiality shall be specifically identified and submitted separately from information not subject to the claim.

e. Any schedule for compliance for applicable requirements with which the source is not in compliance at the time of permit issuance shall be supplemental, and shall not sanction noncompliance with, the applicable requirements on which it is based.

f. For any compliance schedule for applicable requirements with which the source is not in compliance at the time of permit issuance, the permittee shall submit, at least every 6 months unless a more frequent period is specified in the applicable requirement or by the Air Pollution Control Division, progress reports which contain the following:

(i) dates for achieving the activities, milestones, or compliance required in the schedule for compliance, and dates when such activities, milestones, or compliance were achieved; and

(ii) an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

g. The permittee shall not knowingly falsify, tamper with, or render inaccurate any monitoring device or method required to be maintained or followed under the terms and conditions of the Operating Permit.

5. Emergency Provisions

Regulation No. 3, 5 CCR 1001-5, Part C, § VII.

An emergency means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed the technology-based emission limitation under the permit due to unavoidable increases in emissions attributable to the emergency. "Emergency" does not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error. An emergency constitutes an affirmative defense to an enforcement action brought for noncompliance with a technology-based emission limitation if the permittee demonstrates, through properly signed, contemporaneous operating logs, or other relevant evidence that:

a. an emergency occurred and that the permittee can identify the cause(s) of the emergency;

b. the permitted facility was at the time being properly operated;

c. during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and

d. the permittee submitted oral notice of the emergency to the Air Pollution Control Division no later than noon of the next working day following the emergency, and followed by written notice within one month of the time when emissions limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

This emergency provision is in addition to any emergency or malfunction provision contained in any applicable requirement.

6. Emission Controls for Asbestos

Regulation No. 8, 5 CCR 1001-10, Part B

The permittee shall not conduct any asbestos abatement activities except in accordance with the provisions of Regulation No. 8, Part B, “asbestos control.”

7. Emissions Trading, Marketable Permits, Economic Incentives

Regulation No. 3, 5 CCR 1001-5, Part C, § V.C.13.

No permit revision shall be required under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are specifically provided for in the permit.

8. Fee Payment

C.R.S. §§ 25-7-114.1(6) and 25-7-114.7

a. The permittee shall pay an annual emissions fee in accordance with the provisions of § 25-7-114.7. A 1% per month late payment fee shall be assessed against any invoice amounts not paid in full on the 91st day after the date of invoice, unless a permittee has filed a timely protest to the invoice amount.

b. The permittee shall pay a permit processing fee in accordance with the provisions of C.R.S § 25-7-114.7. If the Division estimates that processing of the permit will take more than 30 hours, it will notify the permittee of its estimate of what the actual charges may be prior to commencing any work exceeding the 30 hour limit.

c. The permittee shall pay an APEN fee in accordance with the provisions of § 25-7-114.1(6) for each APEN or revised APEN filed.

9. Fugitive Particulate Emissions

Regulation No. 1, 5 CCR 1001-3, § III.D.1.

The permittee shall employ such control measures and operating procedures as are necessary to minimize fugitive particulate emissions into the atmosphere, in accordance with the provisions of Regulation No. 1, § III.D.1.

10. Inspection and Entry

Regulation No. 3, 5 CCR 1001-5, Part C, § V.C.16.b.

Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Air Pollution Control Division, or any authorized representative, to perform the following:

a. enter upon the permittee's premises where an Operating Permit source is located, or emissions-related activity is conducted, or where records must be kept under the terms of the permit;

b. have access to, and copy, at reasonable times, any records that must be kept under the conditions of the permit;

c. inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the Operating Permit;

d. sample or monitor at reasonable times, for the purposes of assuring compliance with the Operating Permit or applicable requirements, any substances or parameters.

11. Minor Permit Modifications

Regulation No. 3, 5 CCR 1001-5, Part C, §§ X. & XI.

The permittee shall submit an application for a minor permit modification before making the change requested in the application. The permit shield shall not extend to minor permit modifications.

12. New Source Review

Regulation No. 3, 5 CCR 1001-5, Part B

The permittee shall not commence construction or modification of a source required to be reviewed under the New Source Review provisions of Regulation No. 3, Part B, without first receiving a construction permit.

13. No Property Rights Conveyed

Regulation No. 3, 5 CCR 1001-5, Part C, § V.C.11.d.

This permit does not convey any property rights of any sort, or any exclusive privilege.

14. Odor

Regulation No. 2, 5 CCR 1001-4, Part A

As a matter of state law only, the permittee shall comply with the provisions of Regulation No. 2 concerning odorous emissions.

15. Off-Permit Changes to the Source

Regulation No. 3, 5 CCR 1001-5, Part C, § XII.B.

The permittee shall record any off-permit change to the source that causes the emissions of a regulated pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from the change, including any other data necessary to show compliance with applicable ambient air quality standards. The permittee shall provide contemporaneous notification to the Air Pollution Control Division and to the Environmental Protection Agency at the addresses listed in Appendix D of this Permit . The permit shield shall not apply to any off-permit change.

16. Opacity

Regulation No. 1, 5 CCR 1001-3, §§ I., II.

The permittee shall comply with the opacity emissions limitation set forth in Regulation No. 1, §§ I.-II.

17. Open Burning

Regulation No. 9, 5 CCR 1001-11

The permittee shall obtain a permit from the Division for any regulated open burning activities in accordance with provisions of Regulation No. 9.

18. Ozone Depleting Compounds

Regulation No. 15, 5 CCR 1001-17

The permittee shall comply with the provisions of Regulation No. 15 concerning emissions of ozone depleting compounds. Sections I., II.C., II.D., III. IV., and V. of Regulation No. 15 shall be enforced as a matter of state law only.

19. Permit Expiration and Renewal

Regulation No. 3, 5 CCR 1001-5, Part C, §§ III.B.6., IV.C., V.C.2.

a. The permit term shall be five (5) years. The permit shall expire at the end of its term. Permit expiration terminates the permittee's right to operate unless a timely and complete renewal application is submitted.

b. Applications for renewal shall be submitted at least twelve months, but not more than 18 months, prior to the expiration of the Operating Permit. An application for permit renewal may address only those portions of the permit that require revision, supplementing, or deletion, incorporating the remaining permit terms by reference from the previous permit. A copy of any materials incorporated by reference must be included with the application.

20. Portable Sources

Regulation No. 3, 5 CCR 1001-5, Part C, § II.D.

Portable Source permittees shall notify the Air Pollution Control Division at least 10 days in advance of each change in location.

21. Prompt Deviation Reporting

Regulation No. 3, 5 CCR 1001-5, Part C, § V.C.7.b.

The permittee shall promptly report any deviation from permit requirements, including those attributable to malfunction conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken.

"Prompt" is defined as follows:

a. Any definition of "prompt" or a specific timeframe for reporting deviations provided in an underlying applicable requirement as identified in this permit; or

b. Where the underlying applicable requirement fails to address the time frame for reporting deviations, reports of deviations will be submitted based on the following schedule:

(i) For emissions of a hazardous air pollutant or a toxic air pollutant (as identified in the applicable regulation) that continue for more than an hour in excess of permit requirements, the report shall be made within 24 hours of the occurrence;

(ii) For emissions of any regulated air pollutant, excluding a hazardous air pollutant or a toxic air pollutant that continue for more than two hours in excess of permit requirements, the report shall be made within 48 hours; and

(iii) For all other deviations from permit requirements, the report shall be submitted every six (6) months, except as otherwise specified by the Division in the permit in accordance with paragraph 22.d. below.

c. If any of the conditions in paragraphs b.i or b.ii above are met, the source shall notify the Division by telephone (303-692-3155) or facsimile (303-782-0278) based on the timetables listed above. *[Explanatory note: Notification by telephone or facsimile must specify that this notification is a deviation report for an Operating Permit.]* A written notice, certified consistent with General Condition 2.a. above (Certification Requirements), shall be submitted within 10 working days of the occurrence. All deviations reported under this section shall also be identified in the 6-month report required above.

"Prompt reporting" does not constitute an exception to the requirements of "Emergency Provisions" for the purpose of avoiding enforcement actions.

22. Record Keeping and Reporting Requirements

Regulation No. 3, 5 CCR 1001-5, Part A, § II.; Part C, §§ V.C.6., V.C.7.

a. Unless otherwise provided in the source specific conditions of this Operating Permit, the permittee shall maintain compliance monitoring records that include the following information:

(i) date, place as defined in the Operating Permit, and time of sampling or measurements;

(ii) date(s) on which analyses were performed;

(iii) the company or entity that performed the analysis;

(iv) the analytical techniques or methods used;

(v) the results of such analysis; and

(vi) the operating conditions at the time of sampling or measurement.

b. The permittee shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of the monitoring sample, measurement, report or application. Support information, for this purpose, includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the Operating Permit. With prior approval of the Air Pollution Control Division, the permittee may maintain any of the above records in a computerized form.

c. Permittees must retain records of all required monitoring data and support information for the most recent twelve (12) month period, as well as compliance certifications for the past five (5) years on-site at all times. A permittee shall make available for the Air Pollution Control Division's review all other records of required monitoring data and support information required to be retained by the permittee upon 48 hours advance notice by the Division.

d. The permittee shall submit to the Air Pollution Control Division all reports of any required monitoring at least every six (6) months, unless an applicable requirement, the compliance assurance monitoring rule, or the Division requires submission on a more frequent basis. All instances of deviations from any permit requirements must be clearly identified in such reports.

e. The permittee shall file an Air Pollutant Emissions Notice ("APEN") prior to constructing, modifying, or altering any facility, process, activity which constitutes a stationary source from which air pollutants are or are to be emitted, unless such source is exempt from the APEN filing requirements of Regulation No. 3, Part A, § II.D. A revised APEN shall be filed annually whenever a significant change in emissions, as defined in Regulation No. 3, Part A, § II.C.2., occurs; whenever there is a change in owner or operator of any facility, process, or activity; whenever new control equipment is installed; whenever a different type of control equipment replaces an existing type of control equipment; whenever a permit limitation must be modified; or before the APEN expires. An APEN is valid for a period of five years. The five-year period recommences when a revised APEN is received by the Air Pollution Control Division. Revised APENs shall be submitted no later than 30 days before the five-year term expires. Permittees submitting revised APENs to inform the Division of a change in actual emission rates must do so by April 30 of the following year. Where a permit revision is required, the revised APEN must be filed along with a request for permit revision. APENs for changes in control equipment must be submitted before the change occurs. Annual fees are based on the most recent APEN on file with the Division.

23. Reopenings for Cause

Regulation No. 3, 5 CCR 1001-5, Part C, § XIII.

a. The Air Pollution Control Division shall reopen, revise, and reissue Operating Permits; permit reopenings and reissuance shall be processed using the procedures set forth in Regulation No. 3, Part C, § III., except that proceedings to reopen and reissue permits affect only those parts of the permit for which cause to reopen exists.

b. The Division shall reopen a permit whenever additional applicable requirements become applicable to a major source with a remaining permit term of three or more years, unless the effective date of the requirements is later than the date on which the permit expires, or unless a general permit is obtained to address the new requirements; whenever additional requirements (including excess emissions requirements) become applicable to an affected source under the acid rain program; whenever the Division determines the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit; or whenever the Division determines that the permit must be revised or revoked to assure compliance with an applicable requirement.

c. The Division shall provide 30 days' advance notice to the permittee of its intent to reopen the permit, except that a shorter notice may be provided in the case of an emergency.

d. The permit shield shall extend to those parts of the permit that have been changed pursuant to the reopening and reissuance procedure.

24. Section 502(b)(10) Changes

Regulation No. 3, 5 CCR 1001-5, Part C, § XII.A.

The permittee shall provide a minimum 7-day advance notification to the Air Pollution Control Division and to the Environmental Protection Agency at the addresses listed in Appendix D of this Permit. The permittee shall attach a copy of each such notice given to its Operating Permit.

25. Severability Clause

Regulation No. 3, 5 CCR 1001-5, Part C, § V.C.10.

In the event of a challenge to any portion of the permit, all emissions limits, specific and general conditions, monitoring, record keeping and reporting requirements of the permit, except those being challenged, remain valid and enforceable.

26. Significant Permit Modifications

Regulation No. 3, 5 CCR 1001-5, Part C, § III.B.2.

The permittee shall not make a significant modification required to be reviewed under Regulation No. 3, Part B ("Construction Permit" requirements) without first receiving a construction permit. The permittee shall submit a complete Operating Permit application or application for an Operating Permit revision for any new or modified source within twelve months of commencing operation, to the address listed in Item 1 in Appendix D of this permit. If the permittee chooses to use the "Combined Construction/Operating Permit" application procedures of Regulation No. 3, Part C, then the Operating Permit must be received prior to commencing construction of the new or modified source.

27. Special Provisions Concerning the Acid Rain Program

Regulation No. 3, 5 CCR 1001-5, Part C, §§ V.C.1.b. & 8

a. Where an applicable requirement of the federal act is more stringent than an applicable requirement of regulations promulgated under Title IV of the federal act, 40 Code of Federal Regulations (CFR) Part 72, both provisions shall be incorporated into the permit and shall be federally enforceable.

b. Emissions exceeding any allowances that the source lawfully holds under Title IV of the federal act or the regulations promulgated thereunder, 40 CFR Part 72, are expressly prohibited.

28. Transfer or Assignment of Ownership

Regulation No. 3, 5 CCR 1001-5, Part C, § II.C.

No transfer or assignment of ownership of the Operating Permit source will be effective unless the prospective owner or operator applies to the Air Pollution Control Division on Division-supplied Administrative Permit Amendment forms, for reissuance of the existing Operating Permit. No administrative permit shall be complete until a written agreement containing a specific date for transfer of permit, responsibility, coverage, and liability between the permittee and the prospective owner or operator has been submitted to the Division.

29. Volatile Organic Compounds

Regulation No. 7, 5 CCR 1001-9, §§ III & V.

The requirements in paragraphs a, b and e apply to sources located in an ozone non-attainment area or the Denver 1-hour ozone attainment/maintenance area. The requirements in paragraphs c and d apply statewide.

a. All storage tank gauging devices, anti-rotation devices, accesses, seals, hatches, roof drainage systems, support structures, and pressure relief valves shall be maintained and operated to prevent detectable vapor loss except when opened, actuated, or used for necessary and proper activities (e.g. maintenance). Such opening, actuation, or use shall be limited so as to minimize vapor loss.

Detectable vapor loss shall be determined visually, by touch, by presence of odor, or using a portable hydrocarbon analyzer. When an analyzer is used, detectable vapor loss means a VOC concentration exceeding 10,000 ppm. Testing shall be conducted as in Regulation No. 7, Section VIII.C.3.

b. Except when otherwise provided by Regulation No. 7, all volatile organic compounds, excluding petroleum liquids, transferred to any tank, container, or vehicle compartment with a capacity exceeding 212 liters (56 gallons), shall be transferred using submerged or bottom filling equipment. For top loading, the fill tube shall reach within six inches of the bottom of the tank compartment. For bottom-fill operations, the inlet shall be flush with the tank bottom.

c. The permittee shall not dispose of volatile organic compounds by evaporation or spillage unless Reasonably Available Control Technology (RACT) is utilized.

d. No owner or operator of a bulk gasoline terminal, bulk gasoline plant, or gasoline dispensing facility as defined in Colorado Regulation No. 7, Section VI, shall permit gasoline to be intentionally spilled, discarded in sewers, stored in open containers, or disposed of in any other manner that would result in evaporation.

e. Beer production and associated beer container storage and transfer operations involving volatile organic compounds with a true vapor pressure of less than 1.5 PSIA actual conditions are exempt from the provisions of paragraph b, above.

30. Wood Stoves and Wood burning Appliances

Regulation No. 4, 5 CCR 1001-6

The permittee shall comply with the provisions of Regulation No. 4 concerning the advertisement, sale, installation, and use of wood stoves and wood burning appliances.

OPERATING PERMIT APPENDICES

A - INSPECTION INFORMATION
B – MONITORING AND PERMIT DEVIATION REPORT
C - COMPLIANCE CERTIFICATION REPORT
D - NOTIFICATION ADDRESSES
E - PERMIT ACRONYMS
F - PERMIT MODIFICATIONS
G - UNITS 1, 2 AND 3 PARTICULATE MATTER COMPLIANCE ASSURANCE MONITORING PLAN
H - UNIT 3 ACID GAS COMPLIANCE ASSURANCE MONITORING PLAN
I - RECYCLE ASH SILOS COMPLIANCE ASSURANCE MONITORING PLANT

*DISCLAIMER:

None of the information found in these Appendices shall be considered to be State or Federally enforceable, except as otherwise provided in the permit, and is presented to assist the source, permitting authority, inspectors, and citizens.

APPENDIX A - Inspection Information

Directions to Plant:

This facility is located at 2005 South Lime Road. The plant is south and east of Pueblo.

Safety Equipment Required:

Eye Protection
Hard Hat
Safety Shoes
Hearing Protection

Facility Plot Plan:

Figures 1 and 2 (following pages) show the site plans submitted during processing of the renewal permit issued on June 1, 2012.

List of Insignificant Activities:

The following list of insignificant activities was provided by the source to assist in the understanding of the facility layout. Since there is no requirement to update such a list, activities may have changed since the last filing.

<u>Units with emissions less than APEN de minimis - criteria pollutants (Reg 3 Part C.II.E.3.a)</u>

Solvent Cold Cleaners (VOC emissions < 2 tpy)
Venting of Natural Gas and Leaks (VOC emissions < 2 tpy)
Sulfuric Acid Tanks, 15,000, 5,000 and 4,500 gallons, all aboveground (each with emissions < 2 tpy)
Boiler Steam Vents - emit VOC from injection of VOCs as treatment chemicals (< 2 tpy of VOC used)

<u>Units with emissions less than APEN de minims – non-criteria reportable pollutants (Reg 3, Part C.II.E.3.b)</u>

Aqueous Ammonia Tank, 30,000 gal

<u>Air conditioning or ventilation systems not designed to remove air pollutants (Reg 3 Part C.II.E.3.c)</u>

Plant Air Conditioning and Ventilation System

<u>In-house experimental and analytical laboratory equipment (Reg 3 Part C.II.E.3.i)</u>

Plant Laboratory

Fuel (gaseous) burning equipment < 5 MMBtu/hr (Reg 3 Part C.II.E.3.k)

Propane Portable Heaters
Administration Building Heater
Hot Water Heater
Two (2) Southern Substation Building Heaters

Welding, soldering and brazing operations using no lead-based compounds (Reg 3 Part C.II.E.3.r)

Maintenance Welding Machine

Chemical storage tanks or containers < 500 gal (Reg 3 Part C.II.E.3.n)

Small Chemical Storage Tanks

Battery recharging areas (Reg 3 Part C.II.E.3.t)

Battery Storage Area

Landscaping and site housekeeping devices < 10 hp (Reg 3 Part C.II.E.3.bb)

Mowers, Snowblowers, Etc.

Fugitive emissions from landscaping activities (Reg 3 Part C.II.E.3.cc)

Emergency events such as accidental fires (Reg 3 Part C.II.E.3.ff)

Operations involving acetylene, butane, propane or other flame cutting torches (Reg 3 Part C.II.E.3.kk)

Portable Welding Torches

Chemical storage areas < 5,000 gal capacity (Reg 3 Part C.II.E.3.mm)

Oil Drum Storage Area

Emissions of air pollutants which are not criteria or non-criteria reportable pollutants (Reg 3 Part C.II.E.3.oo)

Liquid Alum Tanks, 8,000 and 2,500 gal, both aboveground
Wastewater Operations (no VOC emissions)
10% Sodium Hypochlorite Tanks, 6,000, 4,500 and 8,000 gal
Carbon Dioxide Tanks, 12,000 and 15,000 lbs
Depositrol PY5200 Tank, 1,000 gal

Janitorial activities and products (Reg 3 Part C.II.E.3.pp)

Office emissions including cleaning, copying, and restrooms (Reg 3 Part C.II.E.3.tt)

Fuel storage and dispensing equipment in ozone attainment areas throughput < 400 gal/day averaged over 30 days (Reg 3 Part C.II.E.3.ccc)

Diesel Fuel Tank (2,000 gal) for Refueling Heavy Coal Handling Equipment
Diesel Fuel Tank (300 gal) for Plant Vehicles
Unleaded Gasoline Tank (300 gal) for Plant Vehicles

Storage tanks with annual throughput less than 400,000 gal/yr and meeting content specifications (Reg 3 Part C.II.E.3.fff)

Diesel Fuel Tank (1,034 gal) for Units 1 and 2 Emergency Generator
Diesel Fuel Tank (363 gal) for Emergency Fire Water Pump
Diesel Fuel Tank (2,600 gal) for Unit 3 Emergency Generator

Emergency Power Generators operated < 250 hrs/yr (Reg 3 Part C.II.E.3.nnn.(ii))

Detroit Diesel, Model No. 7163-7305, Serial No. 16VA-2381, Diesel Fuel-Fired Emergency Generator Engine, Rated at 530 hp, installed in 1975*.

***Note that if emissions from this unit exceed 2 tons/yr an APEN must be filed.**

Stationary Internal Combustion Engines with actual, uncontrolled emissions < 5 tons/yr (Reg 3, Part C.II.E.3.nnn(iii))

John Deere, Model No. 6081HF001, Serial No. RG6081HF001 Diesel Fuel-Fired Emergency Fire Pump Engine, Rated at 350 hp and 15 gal/hr*

*Note that this engine is subject to the RICE MACT. As specified in 40 CFR Part 63 Subpart ZZZZ § 63.6590(c)(6) this engine meets the MACT requirements by meeting the requirements in NSPS Subpart IIII but is not subject to requirements under NSPS Subpart IIII. Therefore this engine is not subject any requirements under the RICE MACT and has been included as an insignificant activity. **In addition if emissions from this unit exceed 2 tons/yr an APEN must be filed.**

Sandblast equipment where blast media is recycled and blasted material is collected (Reg 3 Part C.II.E.3.www)

Sandblasting Machine

Not sources of emissions

Turbine 1, lube oil system (closed system)
Turbine 1, lube oil system (closed system)

APPENDIX B

Reporting Requirements and Definitions

no codes ver 2/20/07

Please note that, pursuant to 113(c)(2) of the federal Clean Air Act, any person who knowingly:

(A) makes any false material statement, representation, or certification in, or omits material information from, or knowingly alters, conceals, or fails to file or maintain any notice, application, record, report, plan, or other document required pursuant to the Act to be either filed or maintained (whether with respect to the requirements imposed by the Administrator or by a State);

(B) fails to notify or report as required under the Act; or

(C) falsifies, tampers with, renders inaccurate, or fails to install any monitoring device or method required to be maintained or followed under the Act shall, upon conviction, be punished by a fine pursuant to title 18 of the United States Code, or by imprisonment for not more than 2 years, or both. If a conviction of any person under this paragraph is for a violation committed after a first conviction of such person under this paragraph, the maximum punishment shall be doubled with respect to both the fine and imprisonment.

The permittee must comply with all conditions of this operating permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

The Part 70 Operating Permit program requires three types of reports to be filed for all permits.
All required reports must be certified by a responsible official.

Report #1: Monitoring Deviation Report (due at least every six months)

For purposes of this operating permit, the Division is requiring that the monitoring reports are due every six months unless otherwise noted in the permit. All instances of deviations from permit monitoring requirements must be clearly identified in such reports.

For purposes of this operating permit, monitoring means any condition determined by observation, by data from any monitoring protocol, or by any other monitoring which is required by the permit as well as the recordkeeping associated with that monitoring. This would include, for example, fuel use or process rate monitoring, fuel analyses, and operational or control device parameter monitoring.

Report #2: Permit Deviation Report (must be reported "promptly")

In addition to the monitoring requirements set forth in the permits as discussed above, each and every requirement of the permit is subject to deviation reporting. The reports must address deviations from permit requirements, including those attributable to upset conditions and malfunctions as defined in this Appendix, the

probable cause of such deviations, and any corrective actions or preventive measures taken. All deviations from any term or condition of the permit are required to be summarized or referenced in the annual compliance certification.

For purposes of this operating permit, "malfunction" shall refer to both emergency conditions and malfunctions. Additional discussion on these conditions is provided later in this Appendix.

For purposes of this operating permit, the Division is requiring that the permit deviation reports are due as set forth in General Condition 21. Where the underlying applicable requirement contains a definition of prompt or otherwise specifies a time frame for reporting deviations, that definition or time frame shall govern. For example, quarterly Excess Emission Reports required by an NSPS or Regulation No. 1, Section IV.

In addition to the monitoring deviations discussed above, included in the meaning of deviation for the purposes of this operating permit are any of the following:

(1) A situation where emissions exceed an emission limitation or standard contained in the permit;

(2) A situation where process or control device parameter values demonstrate that an emission limitation or standard contained in the permit has not been met;

(3) A situation in which observations or data collected demonstrates noncompliance with an emission limitation or standard or any work practice or operating condition required by the permit; or,

(4) A situation in which an excursion or exceedance as defined in 40CFR Part 64 (the Compliance Assurance Monitoring (CAM) Rule) has occurred. (only if the emission point is subject to CAM)

For reporting purposes, the Division has combined the Monitoring Deviation Report with the Permit Deviation Report.

Report #3: Compliance Certification (annually, as defined in the permit)

Submission of compliance certifications with terms and conditions in the permit, including emission limitations, standards, or work practices, is required not less than annually.

Compliance Certifications are intended to state the compliance status of each requirement of the permit over the certification period. They must be based, at a minimum, on the testing and monitoring methods specified in the permit that were conducted during the relevant time period. In addition, if the owner or operator knows of other material information (i.e. information beyond required monitoring that has been specifically assessed in relation to how the information potentially affects compliance status), that information must be identified and addressed in the compliance certification. The compliance certification must include the following:

- The identification of each term or condition of the permit that is the basis of the certification;
- Whether or not the method(s) used by the owner or operator for determining the compliance status with each permit term and condition during the certification period was the method(s) specified in the permit. Such methods and other means shall include, at a minimum, the methods

and means required in the permit. If necessary, the owner or operator also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Federal Clean Air Act, which prohibits knowingly making a false certification or omitting material information;

- The status of compliance with the terms and conditions of the permit, and whether compliance was continuous or intermittent. The certification shall identify each deviation and take it into account in the compliance certification. Note that not all deviations are considered violations.[1]

- Such other facts as the Division may require, consistent with the applicable requirements to which the source is subject, to determine the compliance status of the source.

The Certification shall also identify as possible exceptions to compliance any periods during which compliance is required and in which an excursion or exceedance as defined under 40 CFR Part 64 (the Compliance Assurance Monitoring (CAM) Rule) has occurred. (only for emission points subject to CAM)

Note the requirement that the certification shall identify each deviation and take it into account in the compliance certification. Previously submitted deviation reports, including the deviation report submitted at the time of the annual certification, may be referenced in the compliance certification.

Startup, Shutdown, Malfunctions and Emergencies

Understanding the application of Startup, Shutdown, Malfunctions and Emergency Provisions, is very important in both the deviation reports and the annual compliance certifications.

Startup, Shutdown, and Malfunctions

Please note that exceedances of some New Source Performance Standards (NSPS) and Maximum Achievable Control Technology (MACT) standards that occur during Startup, Shutdown or Malfunctions may not be considered to be non-compliance since emission limits or standards often do not apply unless specifically stated in the NSPS. Such exceedances must, however, be reported as excess emissions per the NSPS/MACT rules and would still be noted in the deviation report. In regard to compliance certifications, the permittee should be confident of the information related to those deviations when making compliance determinations since they are subject to Division review. The concepts of Startup, Shutdown and Malfunctions also exist for Best Available Control Technology (BACT) sources, but are not applied in the same fashion as for NSPS and MACT sources.

Emergency Provisions

Under the Emergency provisions of Part 70, certain operational conditions may act as an affirmative defense against enforcement action if they are properly reported.

[1] For example, given the various emissions limitations and monitoring requirements to which a source may be subject, a deviation from one requirement may not be a deviation under another requirement which recognizes an exception and/or special circumstances relating to that same event.

DEFINITIONS

Malfunction (NSPS) means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

Malfunction (SIP) means any sudden and unavoidable failure of air pollution control equipment or process equipment or unintended failure of a process to operate in a normal or usual manner. Failures that are primarily caused by poor maintenance, careless operation, or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions.

Emergency means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

Monitoring and Permit Deviation Report - Part I

1. Following is the **required** format for the Monitoring and Permit Deviation report to be submitted to the Division as set forth in General Condition 21. The Table below must be completed for all equipment or processes for which specific Operating Permit terms exist.

2. Part II of this Appendix B shows the format and information the Division will require for describing periods of monitoring and permit deviations, or malfunction or emergency conditions as indicated in the Table below. One Part II Form must be completed for each Deviation. Previously submitted reports (e.g. EER's or malfunctions) may be referenced and the form need not be filled out in its entirety.

FACILITY NAME: Public Service Company of Colorado – Comanche Station
OPERATING PERMIT NO: 96OPPB133
REPORTING PERIOD:_____ (see first page of the permit for specific reporting period and dates)

Operating Permit Unit ID	Unit Description	Deviations noted During Period?[1]		Malfunction/ Emergency Condition Reported During Period?	
		YES	NO	YES	NO
B001	Boiler No. 1 (Unit 1), Combustion Engineering, Model and Serial No. NB21062, Tangentially-Fired Dry Bottom Pulverized Coal-Fired Boiler, Rated at 3,531 MMBtu/hr (maximum continuous rating). Natural Gas is Used for Startup, Shutdown and/or Flame Stabilization.				
B002	Boiler No. 2 (Unit 2), Babcock and Wilcox, Model and Serial No. NB23761, Wall-Fired Dry Bottom Pulverized Coal-Fired Boiler, Rated at 3,482 MMBtu/hr (maximum continuous rating). Natural Gas is Used for Startup, Shutdown and/or Flame Stabilization.				
B003	Unit 3, Alstom, Model and Serial No. 63000105-3, Tangentially Fired Dry Bottom Super Critical Pulverized Coal-Fired Boiler. Rated at 6,973 MMBtu/hr (maximum continuous rating). Natural Gas is Used for Startup, Shutdown and Flame Stabilization.				
F001	Fugitive Particulate Emissions from Coal Handling and Storage (Railcar Unloading, Storage Pile and Coal Dozing)				
F002	Fugitive Particulate Emissions from Ash Handling and Disposal				
F003	Fugitive Particulate Emissions from Paved and Unpaved Roads				
P001	Ash Silo No. 1				
P002	Ash Silo No. 2				
P005	Ash Silo No. 3				
P003	Unit No. 1 Coal Handling System (Conveying and Crushing)				
P004	Unit No. 2 Coal Handling System (Conveying and Crushing)				
P006	Unit No. 3 Coal Handling System (Conveying and Crushing)				

Operating Permit Unit ID	Unit Description	Deviations noted During Period?[1]		Malfunction/ Emergency Condition Reported During Period?	
		YES	NO	YES	NO
P007	Recycle Ash Handling Operations. Six (6) Recycle Ash Silos and Six (6) Recycle Ash Mixers. Two (2) Silos and Two (2) Mixers Serve Each Unit.				
P008	Lime Handling Operations. Two (2) Lime Storage Silos and Three (3) Ball Mill Slakers. The Lime Handling Equipment Serves All Three Units.				
P009	Sorbent Handling Operations. Two (2) Sorbent Silos for Units 1 and 2. Two (2) Sorbent Silos for Unit 3.				
M001 & M002	Units No. 1 and 2 Cooling Water Towers (Each Rated at 140,000 GPM) and Service Water Towers (Each Rated at 17,000 GPM)				
M003	Unit No. 3 Cooling Tower. GEA Power Cooling, Model No. 545439-91-34-FCF, Hybrid Cooling System consisting of both a wet condenser and cooling tower and a dry condenser. Rated at 169,970 gal/min.				
E001	Caterpillar, Model No. 3516DITA, Diesel Fuel-Fired Emergency Generator Set. Serial No. SBJ00412. Rated at 2,937 hp (2,000 kw) and 18.8 MMBtu/hr (139 gal/hr)				
	General Conditions				
	Insignificant Activities				

[1] See previous discussion regarding what is considered to be a deviation. Determination of whether or not a deviation has occurred shall be based on a reasonable inquiry using readily available information.

Monitoring and Permit Deviation Report - Part II

FACILITY NAME: Public Service Company of Colorado – Comanche Station
OPERATING PERMIT NO: 96OPPB133
REPORTING PERIOD:

Is the deviation being claimed as an: Emergency _____ Malfunction _____ N/A _____

(For NSPS/MACT) Did the deviation occur during: Startup _____ Shutdown _____ Malfunction ____
Normal Operation _____

OPERATING PERMIT UNIT IDENTIFICATION:

Operating Permit Condition Number Citation

Explanation of Period of Deviation

Duration (start/stop date & time)

Action Taken to Correct the Problem

Measures Taken to Prevent a Reoccurrence of the Problem

Dates of Malfunctions/Emergencies Reported (if applicable)

Deviation Code (for Division Use Only)

SEE EXAMPLE ON THE NEXT PAGE

EXAMPLE

FACILITY NAME: Acme Corp.
OPERATING PERMIT NO: 96OPZZXXX
REPORTING PERIOD: 1/1/06 - 6/30/06

Is the deviation being claimed as an: Emergency _____ Malfunction __XX____ N/A ____

(For NSPS/MACT) Did the deviation occur during: Startup _____ Shutdown _____ Malfunction ____
Normal Operation _____

OPERATING PERMIT UNIT IDENTIFICATION:

Asphalt Plant with a Scrubber for Particulate Control - Unit XXX

Operating Permit Condition Number Citation

Section II, Condition 3.1 - Opacity Limitation

Explanation of Period of Deviation

Slurry Line Feed Plugged

Duration

START- 1730 4/10/06
END- 1800 4/10/06

Action Taken to Correct the Problem

Line Blown Out

Measures Taken to Prevent Reoccurrence of the Problem

Replaced Line Filter

Dates of Malfunction/Emergencies Reported (if applicable)

5/30/06 to A. Einstein, APCD

Deviation Code (for Division Use Only)

Monitoring and Permit Deviation Report - Part III

REPORT CERTIFICATION

SOURCE NAME: Public Service Company of Colorado – Comanche Station

FACILITY IDENTIFICATION NUMBER: 1010003

PERMIT NUMBER: 96OPPB133

REPORTING PERIOD:_____ (see first page of the permit for specific reporting period and dates)

All information for the Title V Semi-Annual Deviation Reports must be certified by a responsible official as defined in Colorado Regulation No. 3, Part A, Section I.B.38. This signed certification document must be packaged with the documents being submitted.

STATEMENT OF COMPLETENESS

I have reviewed the information being submitted in its entirety and, based on information and belief formed after reasonable inquiry, I certify that the statements and information contained in this submittal are true, accurate and complete.

Please note that the Colorado Statutes state that any person who knowingly, as defined in Sub-Section 18-1-501(6), C.R.S., makes any false material statement, representation, or certification in this document is guilty of a misdemeanor and may be punished in accordance with the provisions of Sub-Section 25-7 122.1, C.R.S.

Printed or Typed Name | Title

Signature | Date Signed

Note: Deviation reports shall be submitted to the Division at the address given in Appendix D of this permit. No copies need be sent to the U.S. EPA.

APPENDIX C

Required Format for Annual Compliance Certification Report

no codes ver 2/20/07

Following is the format for the Compliance Certification report to be submitted to the Division and the U.S. EPA annually based on the effective date of the permit. The Table below must be completed for all equipment or processes for which specific Operating Permit terms exist.

FACILITY NAME: Public Service Company of Colorado – Comanche Station

OPERATING PERMIT NO: 96OPPB133
REPORTING PERIOD:

I. Facility Status

___ During the entire reporting period, this source was in compliance with **ALL** terms and conditions contained in the Permit, each term and condition of which is identified and included by this reference. The method(s) used to determine compliance is/are the method(s) specified in the Permit.

___ With the possible exception of the deviations identified in the table below, this source was in compliance with all terms and conditions contained in the Permit, each term and condition of which is identified and included by this reference, during the entire reporting period. The method used to determine compliance for each term and condition is the method specified in the Permit, unless otherwise indicated and described in the deviation report(s). Note that not all deviations are considered violations.

Operating Permit Unit ID	Unit Description	Deviations Reported [1]		Monitoring Method per Permit?[2]		Was Compliance Continuous or Intermittent[3]	
		Previous	Current	YES	NO	Continuous	Intermittent
B001	Boiler No. 1 (Unit 1), Combustion Engineering, Model and Serial No. NB21062, Tangentially-Fired Dry Bottom Pulverized Coal-Fired Boiler, Rated at 3,531 MMBtu/hr (maximum continuous rating). Natural Gas is Used for Startup, Shutdown and/or Flame Stabilization.						
B002	Boiler No. 2 (Unit 2), Babcock and Wilcox, Model and Serial No. NB23761, Wall-Fired Dry Bottom Pulverized Coal-Fired Boiler, Rated at 3,482 MMBtu/hr (maximum continuous rating). Natural Gas is Used for Startup, Shutdown and/or Flame Stabilization.						

Operating Permit Unit ID	Unit Description	Deviations Reported [1]		Monitoring Method per Permit?[2]		Was Compliance Continuous or Intermittent[3]	
		Previous	Current	YES	NO	Continuous	Intermittent
B003	Unit 3, Alstom, Model and Serial No. 63000105-3, Tangentially Fired Dry Bottom Super Critical Pulverized Coal-Fired Boiler. Rated at 6,973 MMBtu/hr (maximum continuous rating). Natural Gas is Used for Startup, Shutdown and Flame Stabilization.						
F001	Fugitive Particulate Emissions from Coal Handling and Storage (Railcar Unloading, Storage Pile and Coal Dozing)						
F002	Fugitive Particulate Emissions from Ash Handling and Disposal						
F003	Fugitive Particulate Emissions from Paved and Unpaved Roads						
P001	Ash Silo No. 1						
P002	Ash Silo No. 2						
P005	Ash Silo No. 3						
P003	Unit No. 1 Coal Handling System (Conveying and Crushing)						
P004	Unit No. 2 Coal Handling System (Conveying and Crushing)						
P006	Unit No. 3 Coal Handling System (Conveying and Crushing)						
P007	Recycle Ash Handling Operations. Six (6) Recycle Ash Silos and Six (6) Recycle Ash Mixers. Two (2) Silos and Two (2) Mixers Serve Each Unit.						
P008	Lime Handling Operations. Two (2) Lime Storage Silos and Three (3) Ball Mill Slakers. The Lime Handling Equipment Serves All Three Units.						
P009	Sorbent Handling Operations. Two (2) Sorbent Silos for Units 1 and 2. Two (2) Sorbent Silos for Unit 3.						
M001 & M002	Units No. 1 and 2 Cooling Water Towers (Each Rated at 140,000 GPM) and Service Water Towers (Each Rated at 17,000 GPM)						
M003	Unit No. 3 Cooling Tower. GEA Power Cooling, Model No. 545439-91-34-FCF, Hybrid Cooling System consisting of both a wet condenser and cooling tower and a dry condenser. Rated at 169,970 gal/min.						

Operating Permit Unit ID	Unit Description	Deviations Reported [1]		Monitoring Method per Permit?[2]		Was Compliance Continuous or Intermittent[3]	
		Previous	Current	YES	NO	Continuous	Intermittent
E001	Caterpillar, Model No. 3516DITA, Diesel Fuel-Fired Emergency Generator Set. Serial No. SBJ00412. Rated at 2,937 hp (2,000 kw) and 18.8 MMBtu/hr (139 gal/hr)						
	General Conditions						
	Insignificant Activities [4]						

[1] If deviations were noted in a previous deviation report, put an "X" under "previous". If deviations were noted in the current deviation report (i.e. for the last six months of the annual reporting period), put an "X" under "current". Mark both columns if both apply.

[2] Note whether the method(s) used to determine the compliance status with each term and condition was the method(s) specified in the permit. If it was not, mark "no" and attach additional information/explanation.

[3] Note whether the compliance status with of each term and condition provided was continuous or intermittent. "Intermittent Compliance" can mean either that noncompliance has occurred or that the owner or operator has data sufficient to certify compliance only on an intermittent basis. Certification of intermittent compliance therefore does not necessarily mean that any noncompliance has occurred.

NOTE:

The Periodic Monitoring requirements of the Operating Permit program rule are intended to provide assurance that even in the absence of a continuous system of monitoring the Title V source can demonstrate whether it has operated in continuous compliance for the duration of the reporting period. Therefore, if a source 1) conducts all of the monitoring and recordkeeping required in its permit, even if such activities are done periodically and not continuously, and if 2) such monitoring and recordkeeping does not indicate non-compliance, and if 3) the Responsible Official is not aware of any credible evidence that indicates non-compliance, then the Responsible Official can certify that the emission point(s) in question were in continuous compliance during the applicable time period.

[4] Compliance status for these sources shall be based on a reasonable inquiry using readily available information.

II. Status for Accidental Release Prevention Program:

A. This facility _____ is subject _____ is not subject to the provisions of the Accidental Release Prevention Program (Section 112(r) of the Federal Clean Air Act)

B. If subject: The facility _____ is _____ is not in compliance with all the requirements of section 112(r).

1. A Risk Management Plan _____ will be _____ has been submitted to the appropriate authority and/or the designated central location by the required date.

III. Certification

All information for the Title V Semi-Annual Deviation Reports must be certified by a responsible official as defined in Colorado Regulation No. 3, Part A, Section I.B.38. This signed certification document must be packaged with the documents being submitted.

I have reviewed this certification in its entirety and, based on information and belief formed after reasonable inquiry, I certify that the statements and information contained in this certification are true, accurate and complete.

Please note that the Colorado Statutes state that any person who knowingly, as defined in § 18-1-501(6), C.R.S., makes any false material statement, representation, or certification in this document is guilty of a misdemeanor and may be punished in accordance with the provisions of § 25-7 122.1, C.R.S.

_____

Printed or Typed Name Title

_____

Signature Date Signed

NOTE: All compliance certifications shall be submitted to the Air Pollution Control Division and to the Environmental Protection Agency at the addresses listed in Appendix D of this Permit.

APPENDIX D

Notification Addresses

1. **Air Pollution Control Division**

Colorado Department of Public Health and Environment
Air Pollution Control Division
Operating Permits Unit
APCD-SS-B1
4300 Cherry Creek Drive S.
Denver, CO 80246-1530

ATTN: Matt Burgett

2. **United States Environmental Protection Agency**

Compliance Notifications:

Office of Enforcement, Compliance and Environmental Justice
Mail Code 8ENF-T
U.S. Environmental Protection Agency, Region VIII
1595 Wynkoop Street
Denver, CO 80202-1129

Permit Modifications, Off Permit Changes:

Office of Partnerships and Regulatory Assistance
Air and Radiation Programs, 8P-AR
U.S. Environmental Protection Agency, Region VIII
1595 Wynkoop Street
Denver, CO 80202-1129

APPENDIX E

Permit Acronyms

Listed Alphabetically:

AIRS -	Aerometric Information Retrieval System
AP-42 -	EPA Document Compiling Air Pollutant Emission Factors
APEN -	Air Pollution Emission Notice (State of Colorado)
APCD -	Air Pollution Control Division (State of Colorado)
ASTM -	American Society for Testing and Materials
BACT -	Best Available Control Technology
BTU -	British Thermal Unit
CAA -	Clean Air Act (CAAA = Clean Air Act Amendments)
CCR -	Colorado Code of Regulations
CEM -	Continuous Emissions Monitor
CEMS -	Continuous Emissions Monitoring System
CF -	Cubic Feet (SCF = Standard Cubic Feet)
CFR -	Code of Federal Regulations
CO -	Carbon Monoxide
COM -	Continuous Opacity Monitor
COMS -	Continuous Opacity Monitoring System
CRS -	Colorado Revised Statute
DAHS -	Data Acquisition and Handling System
EF -	Emission Factor
EPA -	Environmental Protection Agency
FI -	Fuel Input Rate in MMBtu/hr
FR -	Federal Register
G -	Grams
Gal -	Gallon
GPM -	Gallons per Minute
HAPs -	Hazardous Air Pollutants
HP -	Horsepower
HP-HR -	Horsepower Hour (G/HP-HR = Grams per Horsepower Hour)
LAER -	Lowest Achievable Emission Rate
LB -	Pound(s)
M -	Thousand
MM -	Million
MMscf -	Million Standard Cubic Feet
MMscfd -	Million Standard Cubic Feet per Day
N/A or NA -	Not Applicable
NOx -	Nitrogen Oxides
NESHAP -	National Emission Standards for Hazardous Air Pollutants
NSPS -	New Source Performance Standards

P -	Process Weight Rate in Tons/Hr
PE -	Particulate Emissions
PM -	Particulate Matter
PM_{10} -	Particulate Matter Under 10 Microns
PSD -	Prevention of Significant Deterioration
PTE -	Potential To Emit
RACT -	Reasonably Available Control Technology
SCC -	Source Classification Code
SCF -	Standard Cubic Feet
SIC -	Standard Industrial Classification
SO_2 -	Sulfur Dioxide
TPY -	Tons Per Year
TSP -	Total Suspended Particulate
VOC -	Volatile Organic Compounds

APPENDIX F

Permit Modifications

DATE OF REVISION	TYPE OF MODIFICATION	SECTION NUMBER, CONDITION NUMBER	DESCRIPTION OF REVISION

APPENDIX G

Units 1, 2 and 3 Particulate Matter Compliance Assurance Monitoring Plan

I. Background

a. Emission Unit Description:

Unit 1, Combustion Engineering, Model and Serial No. NB21062, Tangentially-Fired Dry Bottom Pulverized Coal-Fired Boiler, Rated at 3,531 MMBtu/hr. Natural Gas Used is used for startup, shutdown and/or flame stabilization.

Unit 2, Babcock and Wilcox, Model and Serial No. NB23761, Wall-Fired Dry Bottom Pulverized Coal-Fired Boiler, Rated at 3,482 MMBtu/hr. Natural Gas Used is used for startup, shutdown and/or flame stabilization.

Unit 3, Alstom, Model and Serial No. 63000105-3, Tangentially-Fired Dry Bottom Pulverized Coal-Fired Boiler, Rated at 6,973 MMBtu/hr. Natural Gas Used is used for startup, shutdown and/or flame stabilization.

b. Applicable Regulation, Emission Limit, Monitoring Requirements:

Regulations:

Units 1 and 2:
Operating Permit Conditions 1.1.1 (Colorado Regulation No. 1, Section III.A.1.c), 1.1.2 and 1.2 (underlying Colorado Construction Permits 04PB1439 and 11PB859) and 1.19.1.1 (Colorado Regulation No. 3, Part F, Section VI.A.2)

Unit 3:
Operating Permit Conditions 2.21 and 2.3.1 (underlying Colorado Construction Permit 04PB1015, as modified under the provisions of Section I, Condition 1.3 to revise filterable PM limit)

Emission Limitations:

Unit 1	PM	0.1 lb/MMBtu
	PM	1,546 tons/yr
	PM_{10}	1,423 tons/yr
	PM	0.03 lb/MMBtu (future requirement)
Unit 2	PM	0.1 lb/MMBtu
	PM	1,525 tons/yr
	PM_{10}	1,403 tons/yr
	PM	0.03 lb/MMBtu (future requirement)
Unit 3	PM	0.0120 lb/MMBtu
	PM_{10}	0.0120 lb/MMBtu

Note that all of the above PM and PM_{10} limitations are for filterable PM or PM_{10} only.

Monitoring Requirements: Visible Emissions (Opacity) and Preventative Maintenance

c. Control Technology:

Each boiler is equipped with a fabric filter dust collector (FFDC) to control filterable particulate matter emissions generated from the combustion of coal. The FFDCs have a particulate removal efficiency greater than 99%.

II. Monitoring Approach

	Indicator 1	Indicator 2
I. Indicator	Visible Emissions (Opacity)	Preventative Maintenance
Measurement Approach	Opacity emissions will be monitored by a Continuous Opacity Monitor (COM).	Internal inspections of the baghouses will be conducted semi-annually. The baghouse is inspected visually for deterioration and areas of corrosion or erosion. The bags are inspected for holes and tears, and are repaired and replaced as necessary. Door seals are inspected for tightness.

	Indicator 1	Indicator 2
II. Indicator Range	An excursion is defined as an opacity value greater than 15% for 60 seconds or more. When this occurs, the last compartment to be cleaned in automatic cycle is investigated. (This indicator applies to Units 1 and 2 only). An excursion is also defined as any 24-hour period in which the average opacity exceeds the baseline level established as required by Conditions 1.1.4 and/or 1.19.3.2 and 2.2.4.3. The baseline opacities set by the February 2011 performance tests for Units 1 and 2, as required by Condition 1.1.4 are as follows: Unit 1 – 7.7% and Unit 2 – 8.0%. The baseline opacity set by the May 2011 performance tests for Unit 3, as required by Condition 2.2.4.3 is 5%. These values serve as the baseline opacities until the baselines are re-established as specified in Conditions 1.1.4 and/or 1.19.3.2 and 2.2.4.3. In addition to the above, when an excursion occurs, the appropriate corrective action is made and repairs and/or replacements are made as necessary. A history of the corrective action(s) will be maintained at the facility and made available upon request.	An excursion is defined as failure to perform the semi-annual inspection within 60 days of its scheduled completion date. An excursion triggers an immediate inspection.
III. Performance Criteria		
a. Data Representativeness	An increase in visible emissions (opacity) under steady-state operating conditions is an indirect indication of a potential increase in particulate matter emissions.	Internal inspections can be used to identify torn bags and/or bags with diminished integrity. Torn bags and/or bags with diminished integrity can be an indication of baghouse issues and potentially an increase in particulate matter emissions.
b. Verification of Operational Status	Operational status shall be demonstrated through the continuous process on/off signal recorded by the Data Acquisition and Handling System (DAHS).	Documentation in plant records will serve as the verification that the semi-annual inspection has been performed.

	Indicator 1	Indicator 2
c. QA/QC Practices and Criteria	The COM equipment and data quality assurance is in conformation with the applicable requirements in 40 CFR Part 60 and the internal CEM Quality Control/Quality Assurance program developed in accordance with 40 CFR Part 75.	Trained personnel perform inspections and maintenance using an established procedures and checklist. Such procedures and checklists shall be made available to the Division upon request.
d. Monitoring Frequency	Continuous	Semi-Annual
e. Data Collection Procedures	Opacity measurements will be performed in accordance with the requirements in 40 CFR Part 60 Subpart A § 60.13. The emissions data will be stored in the unit's DAHS.	Results of inspections and maintenance activities are recorded by the plant and made available upon request.
f. Averaging Time	COM data shall be reduced to 6-minute averages as required by 40 CFR Part 60 Subpart A § 60.13. All 6-minute averages in each 24-hour period (7 am to 7 am) will be averaged together to get a 24-hour average.	N/A

III. Justification

a. Background:

The pollutant specific emission unit is three (3) coal fired boilers, that burn natural gas for startup, shutdown and/or flame stabilization. The boilers are equipped with a FFDC to control particulate matter emissions.

Particulate matter removal is accomplished by passing the flue gases through a porous fabric material. The solid particles buildup on the fabric surface to form a thin porous layer of solids. This layer works in conjunction with the fabric material to trap the particulate matter. The results of the performance tests conducted for these units are indicated below:

Unit	Particulate Matter Emissions (lb/MMBtu)			
	Performance Test Result			Emission Limitation
	2003	2010	2011	
Unit 1	0.00729	N/A	0.0026	0.1
Unit 2	0.00514	N/A	0.0043	0.1
Unit 3	N/A	PM – 0.000747 PM_{10} – 0.000286	PM – 0.000639 PM_{10} – 0.000639	0.0120

Note that the 24-hour opacity indicators included in the CAM plan are based on the 2011 performance tests.

b. Rationale for Selection of Performance Indicators

Monitoring of the baghouse operational parameters is intended to keep the baghouse operating within the manufacturer's specifications. Based on the manufacturer's guarantees and actual performance test data on these units, it can be concluded that when the baghouse emissions controls are operated as designed, particulate emissions are controlled to levels well below the applicable particulate emission standard. As such, the requirements of compliance assurance monitoring for particulate matter emissions from these units can be accomplished through the monitoring of the selected performance indicators. Monitoring these indicators will signal the potential need for corrective actions to avoid potential problems with any of these factors.

Potential issues in the operation of a baghouse that can compromise its ability to effectively control particulate emissions can generally be categorized as issues with torn and/or broken bags or seals, and characteristics of the ash cake on the bags. The indicators described below were selected for their ability to provide an indication or warning of potential problems with any of these factors.

Visible Emissions (Opacity)

Based on the relationship between particulate matter in a flue gas stream and opacity, an increase in opacity is a valid indication of increased particulate emissions due to compromised baghouse performance. Increased opacity emissions from typical levels, such as a sudden spike or a gradual increase are an indication that baghouse performance has decreased.

Preventative Maintenance

Preventative maintenance is performed on the baghouses to ensure that they are operated and maintained in accordance with the manufacturer's guidelines.

c. Rationale for Selection of Indicator Ranges

Visible emissions (opacity)

Units 1 and 2

In their September 7, 2010 application to modify the Title V permit to incorporate the Unit 3 requirements, a CAM plan was submitted (with respect to PM emission limitations) for all three units. This replaced the CAM plan submitted with the April 27, 2006 renewal application. In the September 7, 2010 application, the source proposed visible emissions (short-term and long term opacity) and preventative maintenance (semi-annual internal baghouse inspections) as indicators.

The source proposed that a spike in opacity, defined as an opacity reading greater than 15% for sixty (60) seconds or more is an indication of potential reduction in baghouse performance. In response to this indicator, the last compartment to be cleaned in automatic cycle is investigated.

The Division agrees that a sudden spike in opacity is a reasonable indicator that the baghouse operation may have been compromised. The 15% indicator level is below the opacity limitations set for Units 1 and 2. PSCo submitted information indicating that the 15% opacity indicator is based on operating experience. In their submittal, PSCo indicated that based on their years of operating experience an opacity spike of 15% opacity for 60 seconds or more is generally an indicator that there is a problem with the baghouse and that an opacity spike below that set point would pick up spikes in opacity that are seen with normal operation. Although PSCo has not correlated 15% to a level of PM emissions, this is a short term (one minute or more) indicator of baghouse performance and as specified in 40 CFR Part 64 § 64.4(c)(1), emission testing is not required to be conducted over the indicator range or range of potential emissions. Given that the PM standard is based on the average of three one (1) hour tests and past performance tests indicate that the PM emissions are less than 50% of the standard, the short term 15% opacity indicator serves to provide an indication of proper baghouse operation and as such can be a reasonable indicator that Units 1 and 2 are in compliance with the PM limitations.

The source also proposed a second "long-term" opacity indicator (24-hour average opacity that exceeds the baseline level established by performance testing). The Division also accepts this second opacity indicator. The 24-hr average opacity indicator is similar to the monitoring required for control devices (e.g. baghouses) used to meet the particulate matter standards under NSPS Da. For new (constructed after February 28, 2005) electric utility steam generating units NSPS Subpart Da specifies that a baseline opacity level be established and that any 24-hr average opacity value that exceeds the baseline level shall be cause for investigating the control device.

The 24-hr average opacity indicator range will be set in a manner similar to the methodology specified in 40 CFR Part 60 Subpart Da § 60.48Da(o)(2)(iii), which states that the baseline opacity is established during the performance test by averaging all 6-minute average opacity values from the COMS recorded during each of the test runs and then adding a 2.5% opacity to the calculated average opacity. If the NSPS Da baseline opacity (average during test run plus 2.5%) is less than 5%, then the baseline opacity is set at 5%. Since these units are subject to less stringent particulate matter standards than the NSPS Da standards for new units (0.1 lb/MMBtu vs. 0.015 lb/MMBtu), the Division is allowing an opacity value up to 5% to be added to the calculated opacity average from the performance test. The actual allowable opacity add-on is based on the results of the performance tests. Also, as provided for in NSPS Da, if the baseline opacity (COMS average plus add-on) is less than 5%, then the baseline opacity (i.e., the indicator range) is set at 5%. Note that when the more stringent Regional Haze limit takes effect, the maximum opacity add-on shall be set at 3.5% rather than 5%. Since the Regional Haze limit is less stringent than the NSPS Da standard for new units (0.03 lb/MMBtu vs. 0.015 lb/MMBtu), the Division is allowing for a higher value for the opacity add-on than provided for in NSPS Da.

Since the 24-hr opacity indicator for Units 1 and 2 is very similar to the control device monitoring required for new units under NSPS Da, the Division considers that the 24-hr opacity indicator is acceptable for CAM.

Unit 3

In their September 7, 2010 application to incorporate the Unit 3 provisions into the Title V permit, the source proposed as CAM, a short term opacity indicator of 15% (for 60 seconds or more), a 24-hour baseline opacity indicator and semi-annual baghouse inspections.

Although the Division approved the short term (60 seconds) opacity indicator for Units 1 and 2, this indicator is not appropriate for Unit 3 as the 15% opacity level is higher than the BACT opacity limit of 10% (on a 6-minute average). Therefore, there will be no short-term opacity indicator for Unit 3.

Unit 3 is a new electric utility unit that is subject to the NSPS Da PM limit, which was streamlined in favor of the filterable PM BACT limit which is more stringent. Although the Division streamlined both the NSPS Da PM limit and the NSPS Da PM monitoring requirements, the 24-hour average opacity indicator will be set in the same manner as specified in NSPS Da § 60.48Da(o)(2)(iii). Since the 24-hr opacity indicator is essentially the same as the monitoring under NSPS Da, the Division considers that 24-hr average opacity indicator is acceptable for CAM.

When PSCo begins using their PM CEMS for Unit 3, the PM CEMS will be used as CAM and excursions shall be defined as any exceedence of the limitations. As specified in 40 CFR Part 64 § 64.3(d)(1), if a CEMS is required, the source shall use such system to satisfy the CAM requirements. Note that a CAM plan will not be included in the permit for the filterable PM and PM_{10} limitations, when the PM CEMS is used to satisfy the CAM requirements. Under the CAM requirements CEMS that meet the requirements in 40 CFR Part 60 meet the general design criteria in § 64.3(a) and (b) (see 40 CFR Part 64 § 64.3(d)(2)).

Preventative Maintenance

Units 1, 2 and 3

The CAM plan submitted for all three units in the September 7, 2010 application proposed semi-annual internal baghouse inspections for a preventative maintenance indicatro. The Division accepts PSCo's proposal for semi-annual internal baghouse inspections. The Division considers that internal baghouse inspections will ensure proper baghouse function and facilitate required repairs and maintenance of the bags as needed.

APPENDIX H

Unit 3 Acid Gas Compliance Assurance Monitoring Plan

I. Background

a. Emission Unit Description:

Unit 3, Alstom, Model and Serial No. 63000105-3, Tangentially-Fired Dry Bottom Pulverized Coal-Fired Boiler, Rated at 6,973 MMBtu/hr. Natural Gas Used is used for startup, shutdown and/or flame stabilization.

d. Applicable Regulation, Emission Limit, Monitoring Requirements:

Regulations: Operating Permit Conditions 2.8 and 2.15.3 (underlying Construction Permit 04PB1015)

Emission Limitations:	H_2SO_4	0.0034 lb/MMBtu
	H_2SO_4	136.5 tons/yr
	HF	0.00049 lb/MMBtu
	HF	4.0 x 10-4 lb/MMBtu (case-by-case MACT)*
	HF	15.9 tons/yr
	HCl	0.00064 lb/MMBtu
	HCl	6.2×10^{-4} lb/MMBtu (case-by-case MACT)*

*These limits are case-by-case MACT (112(g)) limits. Upon the compliance date for the EPA-promulgated MACT requirements, these limits will no longer be in effect. Any emission limitations under an EPA promulgated MACT are exempt from CAM as provided for in 40 CFR Part 64 § 64.2(b)(1)(i).

Monitoring Requirements: Monitor SO_2 emissions as a surrogate for acid gas emissions.

e. Control Technology:

Unit 3 is equipped with a flue gas desulfurization (FGD) device (i.e. a lime spray dryer) to reduce SO_2 emissions. The lime spray dryer also reduces acid gas emissions.

II. Monitoring Approach

	Indicator 1
I. Indicator	SO_2 Emissions
Measurement Approach	SO_2 emissions will be monitored using a continuous emissions monitoring system (CEMS)

	Indicator 1
II. Indicator Range	An excursion is defined as any 30-day average of SO_2 emissions that exceed 0.10 lb/MMBtu. When this occurs, the permittee shall conduct an investigation of the lime spray dryer performance. Records of the investigation and any maintenance activities or corrective actions conducted shall be recorded by the plant and made available to the Division upon request. If three excursions occur in a semi-annual calendar period (January – June, July - December, a performance test shall be conducted within 60 days after the end of the semi-annual period to assess compliance with the acid gas emission limitations.
III. Performance Criteria	
a. Data Representativeness	SO_2 emissions are measured at the stack outlet. SO_2 emissions is considered an appropriate surrogate for acid gas emissions.
b. Verification of Operational Status	Operational status shall be demonstrated through the continuous process on/off signal recorded by the Data Acquisition and Handling System (DAHS).
c. QA/QC Practices and Criteria	The CEMS equipment and data quality assurance is in conformation with the applicable requirements in 40 CFR Parts 60 and 75.
d. Monitoring Frequency	Continuous
e. Data Collection Procedures	SO_2 emission measurements will be performed in accordance with the requirements in 40 CFR Part 75. The emissions data will be stored in the unit's DAHS.
f. Averaging Time	CEMS data shall be reduced to 1-hour averages as required by 40 CFR Part 75. The 1-hr averages shall be used in 30-day rolling averages.

III. Justification

a. Background:

The pollutant specific emission unit is a coal-fired boiler. The boiler is equipped with a lime spray dryer reduces SO_2 and acid gas emissions.

b. Rational for the Selection of Performance Indicators

The primary purpose of an FGD is to control SO_2 emissions. However, FGDs also reduce acid gas emissions such as HCl, HF and H_2SO_4. Under the CAM requirements, monitoring included for standards that are exempt from CAM are considered "presumptively acceptable" monitoring so long as the monitoring is applicable to the performance of the control device for the pollutant specific emission unit. Emission limitations or standards proposed by the Administrator after November 15, 1990 pursuant to Section 111 or 112 of the Act are exempt from the CAM requirements as provided for in § 63.2(b)(1)(i). The Division considers that monitoring that is very similar to the monitoring required for an exempt standard is acceptable for CAM.

The final MACT for coal-fired electric utility steam generating units was signed by the EPA Administrator on December 16, 2011. The MACT (40 CFR Part 63 Subpart UUUUU) sets standards for acid gases (the limit is set for HCl) and for emission units equipped with an (FGD), there is an alternate

SO_2 limit (SO_2 is the surrogate for acid gases). The MACT acid gas limit is 0.0020 lb/MMBtu HCl and for units equipped with a FGD and an SO_2 CEMS, the alternate acid gas limit is 0.20 lb/MMBtu SO_2. Sources using the SO_2 limit as an alternate (or surrogate) to the HCl limit must conduct an initial performance test to measure SO_2 (using the SO_2 CEMS and converting hourly emissions to 30-day boiler operating day average in lb/MMBty) and thereafter monitor compliance with the SO_2 limit using the SO_2 CEMS (maintaining a 30-boiler operating day rolling average). Sources using the SO_2 alternate must have an FGD and must operate the FGD in accordance with the requirements in 40 CFR Part 63 Subpart UUUUU § 63.10000(b) (operate in a manner consistent with safety and good air pollution control practices for minimizing emissions).

Since Unit 3 is equipped with an SO_2 CEMS and is equipped with a dry FGD, which is operated in a manner consistent with safety and good air pollution control practices for minimizing emissions, the Division considers that monitoring compliance with the SO_2 BACT limit (which is on a 30-day rolling average) is acceptable monitoring for CAM.

Although the final MACT does not require any performance testing for HCl for sources using the SO_2 compliance operation, the CAM plan requires that performance testing for acid gases be conducted if three (3) excursions occur in any semi-annual calendar period (January – June, July – December). Such testing shall be conducted within 60 days after the end of the semi-annual period.

c. Rational for Selection of Indicator Ranges

As discussed previously, the CAM monitoring is based on the one of the allowable compliance options for acid gas emissions in the final MACT for coal-fired electric utility steam generating units (signed by the EPA Administrator on December 16, 2011) set an acid gas limit for HCl of 0.002 lb/MMBtu and allowed an alternate SO_2 limits for units with SO_2 CEMS and FGDs of 0.20 lb/MMBtu (on a 30-day rolling average basis). Both the HCl and SO_2 emission limits included in this permit are lower than the HCl and SO_2 emission limits included in the final MACT for electric utility steam generating units. Performance testing has been conducted on this unit and the results of the test are as follows:

Pollutant/Test Date	Emissions (lb/MMBtu)				
	Run 1	Run 2	Run 3	Average	Limit[1]
HCl and HF/ May 2010	$< 6.04 \times 10^{-6}$ $< 2.95 \times 10^{-6}$	$< 5.23 \times 10^{-6}$ $< 2.55 \times 10^{-6}$	$< 5.69 \times 10^{-6}$ $< 2.78 \times 10^{-6}$	$< 5.66 \times 10^{-6}$ $< 2.76 \times 10^{-6}$	6.2×10^{-4} 4.0×10^{-4}
SO_2[2] / May 2010	0.024	0.021	0.014	0.020	0.10
H_2SO_4 / May 2010	1.71×10^{-4}	3.38×10^{-5}	4.23×10^{-5}	8.23×10^{-5}	0.0034
SO_2[3] / May 2010	0.0246	0.0246	0.0249	0.0247	0.10
HCl, HF and H_2SO_4 / May 2011	$< 1.17 \times 10^{-5}$ $< 1.76 \times 10^{-5}$ 8.22×10^{-5}	$< 1.27 \times 10^{-5}$ $< 1.91 \times 10^{-5}$ 8.98×10^{-5}	$< 1.39 \times 10^{-5}$ $< 2.10 \times 10^{-5}$ 8.45×10^{-5}	$< 1.28 \times 10^{-5}$ $< 1.92 \times 10^{-5}$ 8.55×10^{-5}	6.2×10^{-4} 4.0×10^{-4} 0.0034
SO_2 / May 2011	0.072	0.072	0.074	0.073	0.10

[1]For HCl and HF limits shown are the case-by-case 112(g) MACT limits, which are slightly lower than the HCl Settlement Agreement limit of 6.4×10^{-4} lb/MMBtu and the HF BACT limit of 4.9×10^{-4} lb/MMBtu. For SO_2, this is the Settlement Agreement limit.

[2]SO_2 emissions shown are the results of the SO_2 emissions recorded on the CEMS during the test period. Values shown are average, except for Run 1, which is based on maximum SO_2 emissions rate over the period (note that for Run 1, data from 4:02 through 4:44 is invalid data – due to instrument calibration).
[3]SO_2 emissions shown are as noted in Table 2-4 of the 2010 Stack Test Report.

Therefore, the Division considers that the indicator range of 0.10 lb/MMBtu SO_2, on a 30-day rolling average is appropriate.

APPENDIX I

Recycle Ash Silos Compliance Assurance Monitoring Plan

I. Background

a. Emission Unit Description:

P007: Six (6) recycle ash silos. Two silos serve each Unit.

b. Applicable Regulations, Emission Limits, Monitoring Requirements

Regulation: Operating Permit Conditions 14.2.1.1 and 14.2.2 (underlying Colorado Construction Permit 04PB1018)

Emission Limitations: All Silos: PM = PM_{10} = 0.01 gr/dscf
Unit 1 Silos: PM = PM_{10} = 2.06 tons/yr
Unit 2 Silos: PM = PM_{10} = 2.06 tons/yr
Units 3 Silos: PM = PM_{10} = 2.91 tons/yr

Monitoring Requirements: Visible Emissions

c. Control Technology

Each of the recycle ash silos are equipped with a baghouse (bin vent filter). The baghouses (bin vent filters) for the Unit 3 recycle ash silos were undersized for the Unit 3 ash blower system. So an additional baghouse (bin vent filter) will be installed on each silo in the Fall of 2011.

II. Monitoring Approach

	Indicator
I. Indicator	Visible Emissions
Measurement Approach	Visible emissions from each baghouse will be monitored daily by conducting a six minute visible emission observation in accordance with the procedures in Method 22.
	An Excursion is identified as any visible emissions. Excursions require the source to investigate the baghouse performance and make any repairs or adjustments necessary. A log of any repairs shall be maintained and made available upon request.
III. Performance Criteria	
a. Data Representativeness	Visual observations are being made at each emission point (baghouse exhaust stack).
b. QA/QC Practices and Criteria	Certification is not required for Method 22 observations, but personnel shall be trained in general procedures for the determination of visible emissions. Persons performing visible emission observations shall be trained in determining the presence of visible emissions. A list of observers trained to perform the visible emission observations shall be maintained.

	Indicator
c. Monitoring Frequency	Six (6) minute visible emission observations using Method 22 are conducted daily. Results of visible emissions shall be recorded in a log book.
	Failure to conduct a visible emission observation on any day for any emission unit shall be reported as an excursion. If the emission unit is not operating on a given day, visible emission observations are not required for that day.

III. Justification

a. Background:

The recycle ash silos are used in conjunction with lime in the lime spray dryers to reduce SO_2 emissions from Units 1, 2 and 3. The construction permits for the recycle ash silos did not require that a recycle ash silo be tested specifically to demonstrate compliance with the BACT limit of 0.01 gr/dscf. However, the construction permits for the Unit 3 project specified that a representative silo be tested (any of the lime, sorbent or recycle ash silos, since they all had the same BACT limit). A performance test was conducted on one of the recycle ash silos (Unit 2, Silo B) and the results of that test are as follows:

Unit	Particulate Matter Emissions	
	Performance Test Result	Emission Limitation
Unit 2 "B" Recycle Ash Silo	0.001 gr/dscf	0.01 gr/dscf
	0.27 tons/yr	1.25 tons/yr*

*testing was done prior to revising the permit limits for the recycle ash silo, so the results were compared to the limit at the time of the test.

Note that while visible emission observations were not recorded during the performance test for the recycle ash silo, the Method 9 visible emission observations conducted on the recycle ash silos (as well as the lime and sorbent silos) for self-certification of the construction permits all indicated no visible emissions for the duration of the 6 minute tests.

b. Rationale for Selection of Performance Indicators:

Visible emissions were selected as an indicator because the presence of visible emissions is indicative of baghouse performance. If the baghouse is performing properly, then there should be no visible emissions or visible emissions should be minimal.

c. Rationale for Selection of Indicator Ranges:

An indicator range of no visible emissions was selected for the recycle ash silos. This level was selected because an increase in visible emissions indicates an increase in particulate matter emissions, therefore, the presence of visible emissions is used as an indicator. When visible emissions are detected, corrective action will be initiated, beginning with reporting the excursion to maintenance. Corrective action will be initiated according to manufacturer's recommendations and any corrective

action taken will be recorded in a log. As indicated previously, emissions from the silos are well below the permitted limitations and past opacity observations have indicated they that the units typically operate with no visible emissions.