

PNM EXHIBIT RND-4

Consisting of 54 pages



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NEW SOURCE REVIEW PERMIT

Issued under 20.2.72 NMAC

Certified Mail No: 7005 1820 0001 5771 0255

Return Receipt Requested

NSR Permit No: 0063-M8
Facility Name: San Juan Generating Station

Facility Owners: Unit 1: Public Service Company of New Mexico; Tucson Electric Power
Unit 2: Public Service Company of New Mexico; Tucson Electric Power
Unit 3: Public Service Company of New Mexico; Southern California Public
Power Authority; Tri-State Generation and Transmission Association, Inc.
Unit 4: Public Service Company of New Mexico; Utah Associated Municipal
Power Systems; City of Farmington, New Mexico; M-S-R Public Power
Authority; City of Anaheim, California; Los Alamos County, New Mexico

Operator/Permittee Name: Public Service Company of New Mexico (PNM)
Mailing Address: Alvarado Square, Albuquerque, NM 87158

TEMPO/IDEA ID No: 1421-PRN20120001
AIRS No: 35-045-00902
Permitting Action: NSR Significant Permit Revision
Source Classification: Major-TV and Major-PSD
Facility Location: 36°48'2" N and -108°26'19" W
County: San Juan

Air Quality Bureau Contact: Joseph Kimbrell
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AUG 31 2012

Date

TABLE OF CONTENTS

Part A	FACILITY SPECIFIC REQUIREMENTS	3
A100	Introduction.....	3
A101	Permit Duration (expiration).....	3
A102	Facility: Description.....	3
A103	Facility: Applicable Regulations.....	5
A104	Facility: Regulated Sources	9
A105	Facility: Control Equipment	12
A106	Facility: Allowable Emissions	12
A107	Facility: Allowable Startup, Shutdown, & Maintenance (SSM)	20
A108	Facility: Allowable Operations	20
A109	Facility: Reporting Schedules	21
A110	Facility: Fuel Sulfur Requirements – not required	21
A111	Facility: 20.2.61 NMAC Opacity – not required	21
A112	Construction Options	21
A113	Compliance Plan	22
A114	Reducing Facility Emissions.....	22
	EQUIPMENT SPECIFIC REQUIREMENTS	23
	Oil and Gas Industry	23
A200	Oil and Gas Industry – not required.....	23
	Construction Industry.....	23
A300	Construction Industry - not required.....	23
	Power Generation Industry	23
A400	Power Generation Industry	23
A401	Turbines - Not Required	24
A402	Boilers	24
A403	Engines.....	31
A404	Heaters - Not Required	31
A405	Cooling Towers.....	32
A406	Haul Roads/Storage piles (Coal-Fired Plants).....	32
A407	Storage Silos (activated carbon, fly ash).....	34
Part B	GENERAL CONDITIONS	36
B100	Introduction.....	36
B101	Legal	36
B102	Authority.....	37
B103	Annual Fee.....	37
B104	Appeal Procedures	38
B105	Submittal of Reports and Certifications.....	38
B106	NSPS and/or MACT Startup, Shutdown, and Malfunction Operations	38
B107	Startup, Shutdown, and Maintenance Operations.....	39
B108	General Monitoring Requirements	39
B109	General Recordkeeping Requirements	41
B110	General Reporting Requirements.....	42

B111	General Testing Requirements.....	43
B112	Compliance	46
B113	Permit Cancellation and Revocation.....	46
B114	Notification to Subsequent Owners	47
B115	Asbestos Demolition.....	47
B116	Short Term Engine Replacement	47
Part C	MISCELLANEOUS	51
C100	Supporting On-Line Documents	51
C101	Definitions.....	51
C102	Acronyms	53

PART A FACILITY SPECIFIC REQUIREMENTS

A100 Introduction

- A. This permit NSR 0063-M8 supersedes all portions of Air Quality Permit 0063-M7, issued 12/14/2011, except the portion requiring compliance tests. Compliance test conditions from previous permits, if not completed, are still in effect, in addition to compliance test requirements contained in this permit.

A101 Permit Duration (expiration)

- A. The term of this permit is permanent unless withdrawn or cancelled by the Department.

A102 Facility: Description

- A. This facility consists of four coal-fired electric generating units and associated support facilities. Each coal-fired unit burns pulverized coal and No. 2 Diesel oil in a boiler and produces high-pressure steam which powers a steam turbine coupled with an electrical generator. Electrical power produced by the units is supplied to the electric power grid for sale. Coal for the units is supplied by the adjacent San Juan Mine and is delivered to the facility by conveyor. For the purposes of this permit, the four generating units at San Juan Generating Station are designated Unit 1, Unit 2, Unit 3, and Unit 4.
- B. This facility is located approximately 3 miles north-northeast of Waterflow, New Mexico in San Juan County.
- C. This modification has two distinct permitting scenarios that are mutually exclusive, i.e., if one scenario becomes final the other scenario becomes moot. Scenario A is the permitting scenario required to implement the SJGS Federal Implementation Plan

(FIP) published in 40 CFR 52.1628 (dated August 22, 2011, effective on September 21, 2011). The provisions of this FIP are under judicial review, but the FIP implementation date makes it necessary to proceed with obtaining the authority-to-construct air permit immediately to insure construction of the required equipment (SCR) can begin in time to meet the FIP operational deadline. Scenario B of this permit application is intended to implement the requirements of the State of New Mexico Regional Haze State Implementation Plan, (SIP) adopted pursuant to 40 CFR 51.309, which specifies controls for SJGS that are different than the FIP. If the judicial review of the FIP results in vacatur of the FIP requirements, PNM would implement the SIP requirements which require installation and operation of an SNCR control system, rather than SCR. SNCR is represented in this permit application as Scenario B. While permitting scenarios A and B are distinct, some permit modifications are common to both scenarios. Add Units E520, E521, and E522 for Scenario A. Combine AUX1 and AUX2 into Unit E410 and delete Unit E411. Add Compliance Schedule for 5-year construction period approved by FIP. Pre-construction emission limits shall remain in effect until the new control equipment for each unit becomes operational. This description is for informational purposes only and is not enforceable.

Conditions related to this modification

Condition Number	Pollutant	Limit	Condition implementation date begins or requirement end date
Table 106.A	NOx	Current-0.30 lb/MMBtu	Scenario A/B - Ends no later than 9/20/16
Table 106.A	NOx	Scenario A - 0.05 lb/MMBtu	Begins no later than 9/20/16
Table 106.A	NOx	Scenario B - 0.23 lb/MMBtu	Begins no later than 9/20/16
Table 106.A	H ₂ SO ₄	Scenario A - 0.00026 lb/MMBtu	Begins no later than 9/20/16
Table 106.A	Ammonia Slip	Ammonia Slip wet - Each Scenario A - 2 ppm Scenario B - 10 ppm	Scenario A/B - Begins no later than 9/20/16
Table 106.A	Ammonia Slip	Ammonia Slip (pph) - Each Scenario A - units 1-2 (4.78 pph), units 3-4 (7.31 pph) Scenario B - units 1-2 (23.91 pph); units 3-4 (36.03 pph)	Scenario A/B - Begins no later than 9/20/16
Table 106.A	Ammonia Slip	Ammonia Slip - Combined Scenario A - 105.9 tpy Scenario B - 525.0 tpy	Scenario A/B - Begins no later than 9/20/16
Table 106.C	See Table 106.C	See Table 106.C	Scenario A/B - Ends no later than 9/20/16
Table 106.J	See Table 106.J	See Table 106.J	Scenario A/B - Begins no later than 9/20/16

- D. Table 102.A and Table 102.B show the total potential emissions from this facility for information only, not an enforceable condition, excluding exempt sources or activities.

Table 102.A: Total Potential Criteria Pollutant Emissions from Entire Facility

Pollutant	Emissions (tons per year)
Nitrogen Oxides (NOx) (Pre-construction)	24,703.0
Nitrogen Oxides (NOx) (Scenario A, SCR)	4118.0
Nitrogen Oxides (NOx) (Scenario B, SNCR)	18,941.0
Carbon Monoxide (CO)	39,420.0
Volatile Organic Compounds (VOC)	248.0
Sulfur Dioxide (SO ₂)	12,352.0
Total Suspended Particulates (TSP) Total	3381.0
Particulate Matter less than 10 microns (PM ₁₀) Filterable	1,550.0
Particulate Matter less than 2.5 microns (PM _{2.5}) Total	2836.0

Table 102.B: Total Potential HAPS that exceed 1.0 ton per year

Pollutant	Emissions (tons per year)
Ammonia (Scenario A, SCR) (NM-TAP)	105.9
Ammonia (Scenario B, SNCR) (NM-TAP)	525.0
Hydrochloric acid (HCl)	21.3
Hydrofluoric Acid; (Hydrogen fluoride)	44.7
Sulfuric Acid (H ₂ SO ₄) (Scenario A, SCR Only) (HAP&TAP)	21.6
Total HAPs (Scenario A, SCR Only)	88.2
Total HAPs (Scenario B, SNCR)	66.8
Total HAPs** (Pre-construction)	74.6

* HAP emissions are already included in the VOC emission total.

** The total HAP emissions may not agree with the sum of individual HAPs because only individual HAPs greater than 1.0 tons per year are listed here.

A103 Facility: Applicable Regulations

- A. The permittee shall comply with all applicable sections of the requirements listed in Table 103.A.

Table 103.A: Applicable Requirements

Applicable Requirements	Federally Enforceable	Unit No.
20.2.1 NMAC General Provisions	X	Entire Facility

Applicable Requirements	Federally Enforceable	Unit No.
20.2.3 NMAC Ambient Air Quality Standards	X	Entire Facility
20.2.7 NMAC Excess Emissions	X	Entire Facility
20.2.14 NMAC Coal Burning Equipment – Particulate Emissions	X	E301, E302, E303, E304
20.2.31 NMAC Coal Burning Equipment – Sulfur Dioxide	X	E301, E302, E303, E304
20.2.32 NMAC Coal Burning Equipment – Nitrogen Dioxide	X	E301, E302, E303, E304
20.2.61 NMAC Smoke and Visible Emissions	X	E602, E603, E604, E605, E606
20.2.70 NMAC Operating Permits	X	Entire Facility
20.2.71 NMAC Operating Permit Emission Fees	X	Entire Facility
20.2.72 NMAC Construction Permit	X	Entire Facility
20.2.73 NMAC Notice of Intent and Emissions Inventory Requirements	X	Entire Facility
20.2.74 NMAC Permits – Prevention of Significant Deterioration (PSD)	X	Entire Facility
20.2.77 NMAC New Source Performance	X	E301, E302, E303, E304, E803, E804, E805
20.2.300 NMAC, Reporting of Greenhouse Gas Emissions – Effective Jan 1, 2011	X	E301, E302, E303, E304
40 CFR 50 National Ambient Air Quality Standards	X	Entire Facility
40 CFR 60, Subpart A, General Provisions	X	E301, E303, E304, E803, E804, E805
40 CFR 60 Subpart D – Standards of Performance for Fossil-Fuel-Fired Steam Generators	X	E301, E303, E304
40 CFR 60 Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants	X	E803, E804, S805
40 CFR 64 Compliance Assurance Monitoring	X	E301, E302, E303, E304
40 CFR 68 Chemical Accident Prevention	X	Entire Facility
40 CFR 72 Subparts B, D, and I – Acid Rain Permit Regulations	X	E301, E302, E303, E304
40 CFR 73 Subparts B, C, and D – Sulfur Dioxide Allowance System	X	E301, E302, E303, E304
40 CFR 75 Subparts A-G – Continuous Emission Monitoring	X	E301, E302, E303, E304
40 CFR 76 Acid Rain Nitrogen Oxides Emission Reduction Program	X	E301, E302, E303, E304
40 CFR 77 Excess Emissions	X	E301, E302, E303, E304
40 CFR 82 Subpart B – Protection of Stratospheric Ozone, Servicing of Motor Vehicles	X	Entire Facility

Applicable Requirements	Federally Enforceable	Unit No.
March 10, 2005 Consent Decree filed in the United States District Court, District of New Mexico	X	E301, E302, E303, E304
Demister Settlement Agreement	X	E301, E302, E303, E304
SJGS Federal Implementation Plan (FIP) published in 40 CFR 52.1628 (August 22, 2011)	X	E301, E302, E303, E304
Regional Haze State Implementation Plan (SIP) under 40 CFR 51.309 (June 15, 2012)	X	E301, E302, E303, E304

- B. Table 103.B lists requirements that are **not** applicable to this facility. This table only includes those requirements cited in the application as applicable and determined by the Department to be not applicable, or the Department determined that the requirement does not impose any conditions on a regulated piece of equipment.

Table 103.B: Non-Applicable Requirements

Non-Applicable Requirements	(1)	(2)	Justification For Non-Applicability
40 CFR 60 Subpart K – Standards of Performance for Storage Vessels for Petroleum Liquids		X	See note (2) below
40 CFR 60 Subpart Ka – Standards of Performance for Storage Vessels for Petroleum Liquids		X	See note (2) below

- (1) Not Applicable For This Facility: No existing or planned operation activity at this facility triggers the applicability of these requirements.
- (2) No Requirements: Although these regulations may apply, they do not impose any specific requirements on the operation of the facility as described in this permit.

- C. Applicable requirements that give rise to emissions limits in this permit.

Table 103.C: Applicable Requirements Giving Rise to Permit Emission Limits

(for information only, not an enforceable condition)

Emission Unit Nos.	Applicable Requirement	Description of Requirement
E301, E303, E304	40 CFR 60.42(a)(1)	PM Emission Limit
E301, E303, E304	40 CFR 60.42(a)(2)	Opacity Emission Limit
E301, E303, E304	40 CFR 60.43(a)(2)	SO ₂ Emission Limit
E301, E303, E304	40 CFR 60.44(a)(3)	NO _x Emission Limit
E301, E303, E304	20.2.14.201.A NMAC	PM Emission Limit

Emission Unit Nos.	Applicable Requirement	Description of Requirement
E301, E303, E304	20.2.14.201.B NMAC	PM-2 Emission Limit
E301, E303, E304	20.2.31.109.B NMAC	SO ₂ Emission Limit
E301, E303, E304	20.2.32.109 NMAC	NO _x Emission Limit
E302	20.2.14.202.A NMAC	PM Emission Limit
E302	20.2.14.202.B NMAC	PM-2 Emission Limit
E302	20.2.31.110.A NMAC	SO ₂ Control Efficiency Limit
E302	20.2.32.110.C NMAC	NO _x Emission Limit
E301, E302, E303, E304	20.2.31.109.C NMAC	SO ₂ Emission Limits (Plant-Wide)
E301, E302, E303, E304	NSR No. 63-M6	Emission Limits for NO _x , SO ₂ , PM-10, TSP, CO, and VOC
E803	40 CFR 60.672(a)	PM and Opacity Emission Limits
E804, E805	40 CFR 60.672(b)	Opacity Emission Limit
E602, E603, E604, E605, E606	20.2.61.109 NMAC	Opacity Emission Limit
E101, E102, E103, E104, E201, E406, E407, E408, E409, E410, E411, E505, E506, E507, E508, E509, E510, E701, E702, E703, E704, E705, E706, E707, E801, E802	NSR No. 63-M6	Emission Limits for NO _x , SO ₂ , PM-10, TSP, CO, or VOC
E301, E302, E303, E304	PNM self imposed	SO ₂ Emission Limits
E301, E302, E303, E304	FIP (Scenario A)	NO _x , Ammonia, H ₂ SO ₄ and HAP Limits
E301, E302, E303, E304	SIP (Scenario B)	NO _x and Ammonia Limits

D. Units E301, E303, and E304 are subject to federal new source performance standards (NSPS) found in CFR Title 40, Part 60, Subpart A - General Provisions, and Subpart

- D and shall comply with both the notification requirements in Subpart A and with the specific requirements of Subpart D.
- E. New Source Performance Standards (NSPS) found in 40 CFR 60, Subpart A - General Provisions, and Subpart OOO applies to certain pieces of equipment in the limestone handling system. Affected units shall comply with both the notification requirements in Subpart A and with the specific requirements of Subpart OOO.
- F. Units E301, E302, E303, and E304 are subject to the applicable requirements of 20.2.14, 20.2.31, 20.2.32 NMAC. Table 103.F identifies whether the boiler unit is a new or existing unit including its vintage designation.

Table 103.F: Boiler Designation (NMAC) Information

Unit Number	Vintage		20.2.14, 20.2.31, and 20.2.32 NMAC
	20.2.31.7(H)	20.2.32.7(O)	
E301	1	--	New Coal Burning Equipment
E302	--	D	Existing Coal Burning Equipment
E303	2	--	New Coal Burning Equipment
E304	3	--	New Coal Burning Equipment

A104 Facility: Regulated Sources

- A. Table 104 lists the emission units authorized for this facility. Emission units identified as exempt activities and/or equipment (as defined in 20.2.72.202 NMAC) not regulated pursuant to the Act are not included.

Table 104: Regulated Sources List

Unit No. ¹	Description	Manufacture	Manufacture Date	Model No.	Serial No.	Capacity	Control Equipment
S301/E301	Unit 1 Coal Boiler Begin Commercial Operation 12/1976	Foster Wheeler	--	08-1266	--	3707 MM Btu/hr ₄	Fabric Filter SO ₂ Scrubber Scenario A: SCR Scenario B: SNCR
S302/E302	Unit 2 Coal Boiler Begin Commercial Operation 11/1973	Foster Wheeler	--	08-1266	--	3688 MM Btu/hr ₄	Fabric Filter SO ₂ Scrubber Scenario A: SCR Scenario B: SNCR

Unit No. ¹	Description	Manufacture	Manufacture Date	Model No.	Serial No.	Capacity	Control Equipment
S303/E303	Unit 3 Coal Boiler Begin Commercial Operation 12/1979	Babcock & Wilcox	--	RB-544	--	5758 MM Btu/hr	Fabric Filter SO ₂ Scrubber Scenario A: SCR Scenario B: SNCR
S304/E304	Unit 4 Coal Boiler Begin Commercial Operation 4/1982	Babcock & Wilcox	--	RB-545	--	5649 MM Btu/hr	Fabric Filter SO ₂ Scrubber Scenario A: SCR Scenario B: SNCR
S508/E501	Unit 1 Duct Leaks	--	--	--	--	--	Good air pollution control practices
S509/E502	Unit 2 Duct Leaks						
S510/E503	Unit 3 Duct Leaks	--	--	--	--	--	
S511/E504	Unit 4 Duct Leaks	--	--	--	--	--	
S111/E101	Coal Pile A Maintenance	--	--	--	--	--	TBD
S112/E102	Coal Pile A Maintenance	--	--	--	--	--	TBD
S113/E103	Coal Pile A Maintenance	--	--	--	--	--	TBD
S114/E104	Coal Pile A Maintenance	--	--	--	--	--	TBD
S201/E202	Coal Silo Transfer Point	--	--	--	--	--	Enclosure
S203/E203	Coal Belt to Pulverizers transfer Point	--	--	--	--	--	Enclosure
S204/E201	Coal Pulverizers	Multiple	Multiple	Multiple	Multiple	8,200,000 tpy ¹	Building Enclosure
S425/E406	Unit 1 Cooling Tower	Marley	Note 2	D52	6615-5-11	170,000 gpm	Drift Eliminators/Design
S426/E407	Unit 2 Cooling Tower	Marley	Note 2	D52	6615-5-11	165,000 gpm	
S427/E408	Unit 3 Cooling Tower	Marley	Note 2	Model 2	644-12-333-75	220,000 gpm	
S428/E409	Unit 4 Cooling Tower	Marley	Note 2	Model 2	6616-12-113-80	227,500 gpm	

Unit No. ¹	Description	Manufacture	Manufacture Date	Model No.	Serial No.	Capacity	Control Equipment
S429/E410	Aux #1/#2 Cooling Tower	Marley	1978	600 series	NA	35,000 gpm	
S518/E518	Unit 1 Fly Ash Silo Vent	W.W. Sly	Oct 2008	JM3586	NA	291846 tpy	Fabric Filter Baghouse
S519/E519	Unit 2 Fly Ash Silo Vent	W.W. Sly	Mar 2009	JM3586	NA	290430 tpy	Fabric Filter Baghouse
S512/E505	Unit 3 Fly Ash Silo Vent	W.W. Sly	Dec 1979	JM3586	NA	25,400 scfm	Fabric Filter Baghouse
S513/E506	Unit 4 Fly Ash Silo Vent	W.W. Sly	Apr 1982	JM3586	NA	25,400 scfm	Fabric Filter Baghouse
S514/E507	Unit 1 Fly Ash Silo Unloading	--	--	--	--	291846 tpy	Moisture Control (Bulk Unloading)
S515/E508	Unit 2 Fly Ash Silo Unloading	--	--	--	--	290430 tpy	
S516/E509	Unit 3 Fly Ash Silo Unloading	--	--	--	--	453424 tpy	
S517/E510	Unit 4 Fly Ash Silo Unloading	--	--	--	--	453424 tpy	
S738/E704	Front End Loader (Around Coal Piles)	--	--	--	--	--	Watering
S753/E707	Front End Loader (Around Gypsum Piles)	--	--	--	--	--	Watering
E702, E703, E704-B, and E706	Un-Paved Haul Roads	--	--	--	--	--	Watering
E701, E705, and E708	Paved Road Emissions	--	--	--	--	--	Water Truck Street Sweeper
S804/E802	Lime Stone Pile Maintenance	--	--	--	--	--	FBD
E801	Limestone Truck Unloading	--	--	--	--	--	None

Unit No. ¹	Description	Manufacture	Manufacture Date	Model No.	Serial No.	Capacity	Control Equipment
S806/E803	Limestone Silo loading	—	—	—	—	—	Baghouse
E804	Limestone Hopper to Transfer Conveyor	—	—	—	—	—	None
E805	Limestone Silo to Weigh	—	—	—	—	—	None
S901/E901	Activated Carbon Silo	--	Nov 2008	--	--	578 scfm	Dedicated Baghouse (E901)
S902/E902	Activated Carbon Silo	--	Mar 2009	--	--	578 scfm	Dedicated Baghouse (E902)
S903/E903	Activated Carbon Silo	--	Mar 2008	--	--	578 scfm	Dedicated Baghouse (E903)
S904/E904	Activated Carbon Silo	--	Nov 2007	--	--	578 scfm	Dedicated Baghouse (E904)
E520	Unit 1/2 Sorbent Silo (Scenario A)	TBD	TBD			TBD	Silo Vent Filer
E521	Unit 3 Sorbent Silo (Scenario A)	TBD	TBD			TBD	Silo Vent Filer
E522	Unit 4 Sorbent Silo (Scenario A)	TBD	TBD			TBD	Silo Vent Filer

- 1 Unit number designations starting with an "S" indicate Source and "E" Designations indicate emissions points
- 2 The manufacture date for the boilers (Units E301 – E304), the boiler specific cooling towers (Units 406 – 409), and the coal pulverizer (Unit E201) is assumed to be the "begin commercial operations" date for the respective boilers.
- 3 The coal pulverizers have a capacity of 1,600,000 tons per year of coal for each emissions unit E301 and E302. The coal pulverizers have a capacity of 2,500,000 tons per year of coal for each emissions unit E303 and E304. These capacity values are rounded to the nearest 100,000 tons per year. These values are based on historical coal use, scaled up to 100 percent unit utilization (i.e. 100 percent load at 8760 hours per year)."
- 4 The Btu/hr value listed in Table 104 includes a 6% safety factor added to nominal rated capacity of the boilers existing at the time of permit issuance.

A105 Facility: Control Equipment

- A. Table 104 lists all the pollution control equipment required for this facility. Each emission point is identified by the same number that was assigned to it in the permit application.

A106 Facility: Allowable Emissions

- A. The following table(s) list the emission units and their allowable emission limits. (40 CFR 50, 40 CFR 60, Subparts A and D, and OOO; 40CFR72 Subparts B, D, and I;

40CFR73 Subparts B, C, and D; 40CFR75 Subparts A-G; 40CFR76; 20.2.72.210.A and B.1 NMAC).

Table 106.A: Maximum Allowable Emission Rates for Units E301 (1), E302 (2), E303 (3), and E304 (4)

Unit No.(s)	Pollutant	Maximum Allowable Emission Rate	Averaging Period	Applicable Requirement	Compliance Method
E301 E302 E303 E304	CO	E301 – 3000 lb/hr E302 – 2000 lb/hr E303 – 2000 lb/hr E304 – 2000 lb/hr	Per Compliance Method	20.2.3 NMAC, 40 CFR 50, NSR No. 63-M2	Quarterly Testing
E301 E302 E303 E304	NO _x	E301 – 1,573.7 lb/hr E302 – 2,435.3 lb/hr E303 – 2,444.4 lb/hr E304 – 2,398.1 lb/hr	24-Hour Average	NSR No. 63-M2 20.2.32 NMAC,	CEMS
E301 E302 E303 E304	NO _x	E301 – 4871 tons/yr E302 – 4844 tons/yr E303 – 7564 tons/yr E304 – 7424 tons/yr	Daily rolling 365-day Total	NSR No. 63-M2 20.2.32 NMAC,	CEMS
E301 E303 E304	NO _x	0.70 lb/MMBtu	3-Hour Average, Rolled Hourly	40 CFR 60.44(a)(3)	CEMS
E302	NO _x	0.70 lb/MMBtu	3-Hour Average, Rolled Hourly	20.2.32.110.C NMAC	CEMS
E301 E303 E304	NO _x	0.45 lb/MMBtu	3-Hour Average, Rolled Hourly	20.2.32.109 NMAC	CEMS
E301 E302 E303 E304	NO _x ^{1,5}	Current-0.30 lb/MMBtu Scenario A – 0.05 lb/MMBtu Scenario B – 0.23 lb/MMBtu	30 day rolling average ⁵ 30-boiler operating day rolling average ¹⁰ 30 day rolling average ¹⁰	0063-M4 FIP & 0063-M8	CEMS & Process Records
E301 E302 E303 E304	Opacity ⁸	20%	6-Minute Average	40 CFR 60.42(a)(2); for E302-NSR 63M4 and Consent Decree	COMS
E301 E302 E303 E304	TSP ⁴ (Filterable)	E301 – 174.8 lb/hr E302 – 173.9 lb/hr E303 – 271.6 lb/hr E304 – 266.5 lb/hr	Per Compliance Method	NSR No. 63-M2	Quarterly Testing
E301 E302 E303 E304	TSP ⁴ (Filterable)	E301 – 765.8 tons/yr E302 – 761.9 tons/yr E303 – 1,189.6 tons/yr E304 – 1,167.1 tons/yr	Per Compliance Method	NSR No. 63-M2	Quarterly Testing
E301 E302 E303 E304	PM ^{4,7} (Filterable)	0.015 lb/MMBtu	Per Compliance Method	0063-M4 and Consent Decree	Quarterly Testing
E301 E303 E304	PM ⁴ (Filterable)	0.1 lb/MMBtu	Per Compliance Method	40 CFR 60.42(a)(1)	Quarterly Testing

Unit No.(s)	Pollutant	Maximum Allowable Emission Rate	Averaging Period	Applicable Requirement	Compliance Method
E301 E303 E304	PM ⁴ (Filterable)	0.05 lb/MMBtu	Per Compliance Method	20.2.14.201.A NMAC	Quarterly Testing
E302	PM ⁴ (Filterable)	0.05 lb/MMBtu	Per Compliance Method	20.2.14.202.A NMAC	Quarterly Testing
E301 E302 E303 E304	PM-10 ⁴ (Filterable)	E301 – 174.8 lb/hr E302 – 173.9 lb/hr E303 – 271.6 lb/hr E304 – 266.5 lb/hr	Per Compliance Method	NSR No. 63-M2	Quarterly Testing
E301 E302 E303 E304	PM-10 ⁴ (Filterable)	E301 – 765.8 tons/yr E302 – 761.9 tons/yr E303 – 1,189.6 tons/yr E304 – 1,167.1 tons/yr	Per Compliance Method	NSR No. 63-M2	Quarterly Testing
E301 E302 E303 E304	PM-2.5 ⁴ (Filterable)	E301 – 55.6 lb/hr E302 – 55.3 lb/hr E303 – 86.4 lb/hr E304 – 84.7 lb/hr	Per Compliance Method	0063-M6	Quarterly Testing
E301 E302 E303 E304	PM-2.5 ⁴ (Filterable)	E301 – 243.5 tons/yr E302 – 242.2 tons/yr E303 – 378.4 tons/yr E304 – 371.0 tons/yr	Per Compliance Method	0063-M6	Quarterly Testing
E301 E302 E303 E304	PM-2.5 ⁴ (Total)	0.034 lb/MMBtu	Per Compliance Method	NSR No. 63-M7	Annual Testing
E301 E302 E303 E304	PM-2.5 ⁴ (Total)	E301 – 126.0 lb/hr E302 – 125.4 lb/hr E303 – 195.8 lb/hr E304 – 192.1 lb/hr	Per Compliance Method	NSR No. 63-M7	Annual Testing
E301 E302 E303 E304	PM-2.5 ⁴ (Total)	E301 – 552.0 tons/yr E302 – 549.0 tons/yr E303 – 858.0 tons/yr E304 – 841.0 tons/yr	Per Compliance Method	NSR No. 63-M7	Annual Testing
E301 E303 E304	PM-2 ⁴ (Filterable)	0.02 lb/MMBtu	Per Compliance Method	20.2.14.201.B NMAC	Note 2
E302	PM-2 ⁴ (Filterable)	0.04 lb/MMBtu	Per Compliance Method	20.2.14.202.B NMAC	Note 2
E301 E302 E303 E304	SO ₂	90% removal	Annual Average	0063-M4	CEMS
E301 E302 E303 E304	SO ₂ ⁶	0.250 lb/MMBtu	7-day block average	0063-M4	CEMS & Process Records

Unit No.(s)	Pollutant	Maximum Allowable Emission Rate	Averaging Period	Applicable Requirement	Compliance Method
E301 E302 E303 E304	SO ₂	E301 - 2435.0 tpy E302 - 2423.0 tpy E303 - 3783.0 tpy E304 - 3711.0 tpy	Per Compliance Method	20.2.3 NMAC, 40 CFR 50	CEMS
E301 E302 E303 E304	SO ₂	0.15 lb/MMBtu ⁹	30-Day Average, Rolled Daily	PNM self imposed limit, NSR 63M6R2 and FIP	CEMS & Process Records
E301 E303 E304	SO ₂	1.2 lb/MMBtu	3-Hour Average, Rolled Hourly	40 CFR 60.43(a)(2)	CEMS
E301 E303 E304	SO ₂	1.2 lb/MMBtu	3-Hour Average, Rolled Hourly	20.2.31.109.B NMAC	CEMS
E302	SO ₂	Minimum 72% Control	30-Day Average, Rolled Daily	20.2.31.110.A NMAC	CEMS
E301 E302 E303 E304	VOC	E301 - 11.1 lb/hr E302 - 11.1 lb/hr E303 - 17.3 lb/hr E304 - 17.0 lb/hr	Per Compliance Method	NSR No. 63-M2	Note 3
E301 E302 E303 E304	H ₂ SO ₄	0.00026 lb/mmBtu	hourly basis	FIP - 40 C.F.R. § 52.1628	Annual Method 8A
E301 E302 E303 E304	Ammonia Slip	2 ppm	design basis	FIP - 40 C.F.R. § 52.1628	SCR design
E301 E302 E303 E304	Ammonia Slip	10 ppm	design basis	SIP - 40 C.F.R. § 51.309(g)	SNCR design

- 1 Nitrogen dioxide emissions include all oxides of nitrogen expressed as NO₂
- 2 PNM shall show compliance with either the PM or PM_{2.5} limits as required in 20.2.14 NMAC.
- 3 Test results that demonstrate compliance with CO emission limits shall also be considered to demonstrate compliance with VOC emission limits for the subject emission unit.
- 4 The TSP emission limits in this permit only include filterable particulate emissions since the test method only measures filterable TSP. PM10 and PM2.5 filterable limits will remain. PM2.5 Total limits include both filterable and condensibles.
- 5 For purposes of calculating the thirty (30) day rolling average, NO_x emissions for the first three (3) hours of a cold startup after coal is fed to the boiler shall be capped at 0.30 lb/MMBtu. Cold startup is defined as a startup when the boiler is at ambient indoor temperature measured at the time fuel is first fed to the boiler.
- 6 The seven (7) day average emission rate of SO₂ at San Juan Units E301, E302, E303, and E304 shall not exceed 0.250 lb-SO₂/MMBtu for each unit, calculated as a block average as measured by SO₂ CEMS located downstream of the scrubber outlet and any scrubber by-pass return. For purposes of calculating the block average, SO₂ emissions for the first three (3) hours of a cold startup after coal is fed to the boiler shall be capped at 0.250 lb/MMBtu. Cold startup is defined as a startup when the boiler is at ambient indoor temperature measured at the time fuel is first fed to the boiler.
- 7 The PM average emission rate for each of Units E301, E302, E303, and E304 shall not exceed 0.015 lb-PM/MMBtu, as measured by EPA Reference Method 5 or 5i stack tests, conducted at least once each calendar

- quarter at times and conditions specified by the Department, and according to test protocols approved by the Department, but in all cases under conditions and in a manner no less stringent than described in EPA's 2009 Clean Air Act National Stack Testing Guidance.
- 8 The opacity limit for San Juan Units E301, E303, and E304 as required by 40 CFR 60.D and E301, E302, E303, and E304 as required by this permit shall be twenty (20) percent, averaged over any six (6) minute period except for one six (6) minute average per hour of up to twenty-seven (27) percent opacity. This limit shall apply at all times when air pollutants are being discharged into the atmosphere, unless PNM demonstrates that any excess opacity reading: (a) was caused by a startup, shutdown, malfunction, or emergency, or (b) occurred when both the boiler and all fans that move flue gas in the unit were off. Load changes, poor coal quality, air heater cleaning, sootblowing, and high ash hoppers shall not be used as a defense for any excess opacity reading. Opacity shall be measured in the duct or, if approved by EPA, after the outlet of the baghouse and corrected to stack exit. (CD 9a)
 - 9 Prior to September 20, 2016: Compliance with the 0.15 lb/MMBtu heat input daily rolling, 30-day average SO₂ emission limitation is determined by calculating at the end of each rolling 30 successive boiler operating days the arithmetic average of all hourly emission rates for SO₂, except for data obtained during emergency conditions. Hourly emission rates will only be determined based on valid SO₂ CEMs data for any hour where fuel is combusted in the unit. No missing hour substitute data will be used in determining compliance with the proposed 0.15 lb/MMBtu heat input 30-day rolling average SO₂ emission limit. "Boiler operating day" means a 24-hour period between 12 midnight and the following midnight (MST) during which any fuel is combusted at any time in the steam-generating unit. Effective on September 20, 2016 if SCR is installed: The SO₂ emission rate limit for each unit in the plant shall be 0.15 pounds per million British thermal units (lbs/MMBtu), as averaged over a rolling 30 boiler operating-day period. For each unit on each boiler-operating-day, the hourly SO₂ emissions measured in lbs/MMBtu, shall be averaged over the hours the unit was in operation to obtain a daily boiler-operating-day average. Each day, the 30-day-rolling average SO₂ emission rate for each unit (in lbs/MMBtu) shall be determined by averaging the daily boiler-operating-day average emission rate from that day and those from the preceding 29 days. This method of calculating SO₂ emissions becomes effective on September 20, 2016 if SCR is installed.
 - 10 Per FIP at 40CFR52.1628 d(2), The NO_x limit for each unit in the plant, expressed as nitrogen dioxide (NO₂), shall be 0.05 pounds per million British thermal units (lb/MMBtu) as averaged over a rolling 30 calendar day period. For each unit, NO_x emissions for each calendar day shall be determined by summing the hourly emissions measured in pounds of NO_x. For each unit, heat input for each calendar day shall be determined by adding together all hourly heat inputs, in millions of BTU. Each day the thirty-day rolling average for a unit shall be determined by adding together the pounds of NO_x from that day and the preceding 29 days and dividing the total pounds of NO_x by the sum of the heat input during the same 30-day period. The result shall be the 30 day-rolling average in terms of lb/MMBtu emissions of NO_x. If a valid NO_x pounds per hour or heat input is not available for any hour for a unit, that heat input and NO_x pounds per hour shall not be used in the calculation of the 30-day rolling average for NO_x. This method of calculating NO_x emissions becomes effective on September 20, 2016 if SCR is installed. Unless SCRs are installed and before the September 20, 2016 effective date, footnotes 5 and 9 remain in effect.

B. Table 106.B contains the maximum allowable emission rates for Units E301, E302, E303, and E304 combined.

Table 106.B, Maximum Allowable Emission Rates for Units E301-E304 Combined

Pollutant	Maximum Allowable Emission Rate	Averaging Period	Applicable Requirement	Compliance Method
NO _x ¹	9,000 lb/hr	24-Hour Average, Rolled Hourly	NSR No. 63-M2, 40 CFR Part 50	CEMS

Pollutant	Maximum Allowable Emission Rate	Averaging Period	Applicable Requirement	Compliance Method
SO ₂	13,000 lb/hr	3-Hour Average, Rolled Hourly	20.2.31.109.C NMAC	CEMS
SO ₂	0.55 lb/MMBtu	30-Day Average, Rolled Daily	20.2.31.109.C NMAC	CEMS & Process Records
SO ₂	0.46 lb/MMBtu	Annual Average	NSR No. 63-M2	CEMS & Process Records

Nitrogen dioxide emissions include all oxides of nitrogen expressed as NO₂.

- C. Table 106.C list the allowable emissions from duct leaks. Compliance shall be determined by implementation of a duct leak management program.

Table 106.C, Maximum Allowable Emission Rates for Duct Leaks

Emission Unit No.	Maximum Allowable Emission Rates											
	TSP		PM-10		PM-2.5		NOx		CO		SO ₂	
	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy
E501	11.3	45.0	4.5	18.1	2.1	9.2	0.3	0.8	0.5	2.0	1.1	4.5
E502	12.4	50.0	4.9	20.0	2.1	9.2	0.4	0.8	0.4	1.5	1.2	4.9
E503	12.6	50.4	5.0	20.1	2.0	8.9	--	0.8	0.2	1.0	1.3	5.0
E504	14.5	58.3	5.8	23.3	2.0	8.9	0.3	1.0	0.3	1.1	1.5	5.8

† Emission rates for Duct Leaks under Scenarios A or B ends not later September 20, 2016.

- D. Table 106.D lists the allowable emission limits for non-boiler emission units. The emissions from any individual piece of equipment shall not exceed the limits listed in the table. (NSR 63M6R1, Condition 2.e)

Table 106.D, Maximum Allowable Emission Rates for Non-Boiler Emission Units

Emission Unit No.	Maximum Allowable Emission Rates in Pounds per Hour (pph) and Tons per Year (tpy)			
	TSP		PM-10	
	pph	tpy	pph	tpy
E101	1.6	7.0	--	1.6
E102	1.6	7.0	--	1.6
E103	1.6	7.0	--	1.6
E104	1.6	7.0	--	1.6
E201	7.3	32.0	2.8	12.0
E202	--	3.1	--	1.5
E203	--	3.1	--	1.5

Emission Unit No.	Maximum Allowable Emission Rates in Pounds per Hour (pph) and Tons per Year (tpy)			
	TSP		PM-10	
	pph	tpy	pph	tpy
E406	10.2	44.7	2.4	10.5
E407	9.9	43.4	2.3	10.2
E408	6.4	28.2	2.5	10.9
E409	13.7	59.8	3.2	14.1
E410	1.4	6.0	--	2.3
E505	2.2	9.5	2.2	9.5
E506	2.2	9.5	2.2	9.5
E507	0.6	2.4	--	1.1
E508	0.6	2.4	--	1.1
E509	0.9	3.7	--	1.8
E510	0.8	3.7	--	1.7
E518	1.6	7.0	1.6	7.0
E519	1.6	7.0	1.6	7.0
Paved Roads (E701, E705, E708)	16.4	68.8	3.3	13.8
Unpaved Roads (E702, E703, E704B, E706)	21.7	77.9	6.6	23.8
E801	0.7	3.1	--	1.5
E802	2.4	10.4	--	1.6
E803	--	1.1	--	--
E804	--	--	--	--
E805	--	--	--	--
S901	--	--	--	--
S902	--	--	--	--
S903	--	--	--	--
S904	--	--	--	--
E520	--	--	--	--
E521	--	--	--	--
E522	--	--	--	--

--" indicates that the emissions are less than 1.0 pph or 1.0 tpy and emission limits are not required for this permit.

- E. Unless otherwise required by this permit or another applicable regulation, compliance with the NO_x emission limits shall be determined on a unit-specific basis using data from NO_x CEMS that have been installed, calibrated, and operated in accordance with 40 CFR. 75 and any other applicable requirement.

- F. Unless otherwise required by this permit or another applicable regulation, compliance with the SO₂ emission limits shall be determined on a unit-specific basis using data from SO₂ CEMS that have been installed, calibrated, and operated in accordance with 40 CFR 75 and any other applicable requirement.
- G. Each affected facility as defined in 40 CFR 60 Subpart OOO of the limestone handling system, including the limestone silo, shall meet the standards for particulate matter specified in 40 CFR 60.672.
- H. In accordance with 20.2.61.109 NMAC, the owner or operator of stationary combustion equipment shall not permit, cause, suffer or allow visible emissions from the stationary combustion equipment to equal or exceed an opacity of 20 percent; provided, however, stationary combustion equipment which is regulated by Parts 20.2.10 NMAC through 20.2.18 NMAC, 20.2.37 NMAC, and 20.2.42 NMAC, and any other Part of Chapter 2 which specifically limits particulate emissions is exempted from this Part. The emergency generators are subject to 20.2.61.109 NMAC.
- I. The activated carbon silo baghouses shall be designed and operated so there are no visible emissions.
 - (I) For mercury control, the operating procedures needed to maximize mercury removal per the consent decree requirements are not yet available to explicitly incorporate in this permit renewal. Once PNM, NMED and the Plaintiffs agree on the maximal mercury removal rate and procedure, then this permit will be re-opened or modified to incorporate limits and/or conditions to meet consent decree requirements. (CD 9d)
- J. Emission limits totals are used solely for assessing annual fees in accordance with 20.2.71 NMAC. SJGS has many limits for each pollutant. This table shows the most stringent of these limits for each pollutant for which the annual fees will be based. Only pollutants for which we can assess fees are shown. (B103A) Emission totals from NSR Permit 0063M7 will be used for fees until all units under NSR 0063M8 have been modified and new pollution controls are operational.

Table 106.J: Emissions (tons per year) total for annual fees use

Unit	¹ NO _x	² CO	³ VOC	⁴ SO ₂	⁵ PM
E301	4,871	13,140	48.7	2,435	552
Scenario A	812				244
Scenario B	3,734				244
E302	4,844	8,760	48.5	2,423	549
Scenario A	808				242
Scenario B	3,715				242

Unit	¹ NO _x	² CO	³ VOC	⁴ SO ₂	⁵ PM
E303	7,564	8,760	75.8	3,783	858
Scenario A	1,261				378
Scenario B	5,801				378
E304	7,424	8,760	74.5	3,711	841
Scenario A	1,237				371
Scenario B	5,691				371
Misc					⁶ 455
Scenario A					455
Scenario B					455
Totals*	24,703	39,420	247.5	12,352	3,255
Scenario A	4,118	No Change	No Change	No Change	3,255
Scenario B	18,941	No Change	No Change	No Change	3,255
Used for fees (based on 63M7)	6,000	6,000	247.5	6,000	3,255

* Amounts are capped at 6,000 tpy per pollutant by regulation (20.2.71.111.C(4) NMAC).

¹ Units 1,2,3,4: Tons per year NO_x limits obtained by scaling up 0.3 lbs/MMBtu 30-day average (CD 9cii; Table 106.A).

² Units 1,2,3,4: Tons per year CO limits obtained by scaling up lbs/hr limits (Table 106.A).

³ Units 1,2,3,4: VOC totals based on average coal Btu content and revised heat input values (Application dated January 2009).

⁴ Units 1,2,3,4: Tons per year SO₂ limits by scaling up 0.15 lb/MMBtu SO₂ PNM self imposed limit.

⁵ Units 1,2,3,4: Tons per year PM limits obtained by scaling up 0.015 lbs/MMBtu (CD 9cii; Table 106.A) plus the PM-2.5 condensibles of 0.019 lbs/MMBtu (NSR 63M7).

⁶ Represents sum of the non-boiler PM (TSP) is 455 tpy (calculated from Tables 2E, by eliminating the boiler PM).

A107 Facility: Allowable Startup, Shutdown, & Maintenance (SSM)

- A. SJGS Units have multiple NO_x limits for different averaging times. Some limits are expressed in lbs/mmBtu rather than lbs/hr. Units 1, 3 and 4 have a 3-hr average limit of 0.45 lbs/mmBtu. During SSM this limit may be exceeded for each of these units. The maximum NO_x emission rate during SSM for these units is 0.7 lbs/mmBtu. The Unit 2 3-hr NO_x limit is 0.7 lbs/mmBtu and Unit 2 NO_x emissions are not expected to exceed this rate during SSM. The permittee shall maintain records in accordance with Condition B109.E. SJGS shall comply with all other emission limits established for steady state operations even during SSM events.

A108 Facility: Allowable Operations

- A. This facility is authorized for continuous operation. No monitoring, recordkeeping, and reporting are required to demonstrate compliance with continuous hours of operation.

A109 Facility: Reporting Schedules

- A. For the Title V Permit: A Semi-Annual Report of monitoring activities is due within 45 days following the end of every 6-month reporting period. The six month reporting periods start on January 1st and July 1st of each year.
- B. For the Title V Permit: The Annual Compliance Certification Report is due within 30 days of the end of every 12-month reporting period. The 12-month reporting period starts on January 1st of each year.
- C. The quarterly reportable items required by this permit shall be submitted quarterly.

A110 Facility: Fuel Sulfur Requirements – not required**A111 Facility: 20.2.61 NMAC Opacity – not required****A112 Construction Options**

- A. This permit application has two distinct permitting scenarios that are mutually exclusive, i.e., if one scenario becomes final the other scenario becomes moot. Scenario A is the permitting scenario required to implement the SJGS Federal Implementation Plan (FIP) published in 40 CFR 52.1628 (dated August 22, 2011, effective September 21, 2011). The provisions of this FIP are under judicial review, but the FIP implementation date makes it necessary to proceed with obtaining the authority-to-construct air permit immediately to insure construction of the required equipment (SCR) can begin in time to meet the FIP operational deadline. Scenario B of this permit application is intended to implement the requirements of the State of New Mexico Regional Haze State Implementation Plan, (SIP) adopted pursuant to 40 CFR 51.309, which specifies controls for SJGS that are different than the FIP. If the judicial review of the FIP results in vacatur of the FIP requirements, PNM would implement the SIP requirements which require installation and operation of an SNCR control system, rather than SCR. SNCR is represented in this permit application as Scenario B. While permitting scenarios A and B are distinct, this application includes permit modifications that are common to both scenarios. The permitting description given below, therefore, list the permitting elements as “Common”, “Scenario A” only and “Scenario B” only.
- B. Permitting changes/updates to Scenario A (FIP) only:
 - (1) An SCR system on each boiler unit
 - (2) An anhydrous ammonia injection system used for supplying ammonia to the SCR system consisting of ammonia delivery, storage and injection equipment.

- (3) A dry sorbent injection system (DSI) consisting of DSI delivery, storage and injection equipment.
 - (4) Modification of the fly ash handling system through addition of ash hoppers at the economizer outlets on each boiler unit and bypass of the existing ESP structure.
 - (5) Modification of the fan system to achieve “balanced” draft configuration allowing for the elimination of emission points E510, E502, E503 and E504.
 - (6) EPA extended the time for compliance with the emission limits from 3 years to 5 years, the maximum period allowed by the Clean Air Act. Therefore, SCR shall be installed on each of the four units as expeditiously as practicable, but in no event later than 5 years from the effective date of our final rule. The Federal register date was August 22, 2011, effective on September 20, 2011. Installation of all control equipment and compliance with new emission limits shall be not later than September 20, 2016.
- C. Permitting changes/updates to Scenario B (SIP) only:
- (1) A system for delivery, storage and injection of 50 percent urea solution into the flue gas of each boiler for NOx control by SNCR.
 - (2) Modification of the fan system to achieve “balanced” draft configuration allowing for the elimination of emission points E510, E502, E503 and E504.
 - (3) In accordance with 40 CFR 51.308(e)(1)(iv), the Department determined that SNCR shall be installed on each of the four units as expeditiously as practicable, but in no event later than 5 years after approval by the EPA of the SIP. As of July 6, 2012, EPA has not approved the SIP. NMED establishes the deadline date to be the same as the FIP of September 20, 2016.

A113 Compliance Plan**A114 Reducing Facility Emissions**

- A. Certain terms and conditions of this permit reduce the potential emission rate of regulated equipment to values below those allowed prior to the date of issuance of this permit. The compliance date for construction or operation of the emission units and pollution control equipment required to achieve this reduction in potential emission rate is in accordance with the implementation scheduled in the FIP (September 20, 2016) or SIP (September 20, 2016).

EQUIPMENT SPECIFIC REQUIREMENTS

OIL AND GAS INDUSTRY

A200 Oil and Gas Industry – not required

CONSTRUCTION INDUSTRY

A300 Construction Industry - not required

POWER GENERATION INDUSTRY

A400 Power Generation Industry

This section has common equipment related to most Electric Service Operations (SIC-4911).

A. This facility and Units E301, E302, E303, and E304 (boilers) are subject to and shall have complied with the requirements of 40 CFR Part 72 by applying for and obtaining an Acid Rain Permit, P062AR2.

B. Acid Rain Program Monitoring

<p>Requirement: Emission Units E301, E302, E303, and E304 (boilers) are subject to and shall comply with the requirements of 40 CFR Part 75 for installation, calibration, maintenance and operation of NO_x and SO₂ continuous emissions monitoring systems (NO_x and SO₂ CEMS) and for continuous opacity monitoring systems (COMS).</p>
<p>Monitoring: The permittee shall comply with the requirements at 40 CFR 75.12(a) and 75.12(b) for continuous monitoring of NO_x emissions; with the requirements at 40 CFR 75.11(a) and 75.11(b)(2) for continuous monitoring of SO₂ emissions; with the requirements at 40 CFR 75.14(a) for continuous monitoring of opacity; and with the requirements at 40 CFR 75.13(b) and 75.13(c) for continuous monitoring of CO₂ emissions.</p>
<p>Recordkeeping: The permittee shall comply with the applicable recordkeeping requirements of 40 CFR Part 75, Continuous Emission Monitoring, subpart F, Sections 75.50 through 75.59; and in accordance with Section B109 of this permit..</p>
<p>Reporting: In accordance with 40 CFR 75.</p>

C. Mercury CEMS

<p>Requirement: The permittee shall install, maintain, and operate mercury CEMS in accordance with the manufacturer’s recommendations.</p>
<p>Monitoring: The permittee shall continually monitor the mercury emissions using CEMS that are installed and maintained in accordance with the CEMS manufacturer’s recommendations.</p>

(NSR 63M6R1, Condition 3.m)
Recordkeeping: In accordance with Section B109, the permittee shall keep records of the mercury CEMS outputs, calculations, and any CEMS maintenance activity necessary to show accurate and continual mercury emission rates were recorded..
Reporting: An annual evaluation of the mercury CEMS shall be performed and submitted to the NMED within 30 days after January 1 of each year.

- D. PNM shall maintain, calibrate, and operate CEMS at San Juan Units E301, E303, and E304 to measure accurately and continuously opacity and the emissions of SO₂, NO_x, and the exhaust flow rate from each unit in full compliance with the requirements of 40 CFR Parts 60 and 75, including requirements for heat input rate measurements. Although Unit 302 is not an affected unit for purposes of NSPS 40 CFR 60, Subpart D, PNM shall maintain, calibrate, and operate CEMS at San Juan Unit E302 to measure continuously opacity and the emissions of SO₂, NO_x, and the exhaust flow rate from the unit in accordance with the requirements of 40 CFR Parts 60 and 75, including requirements for heat input rate measurements.

A401 Turbines - Not Required

A402 Boilers

- A. Units E301, E302, E303, and E304

Requirement: Each boiler shall be equipped and operated with a baghouse, to meet the emission limits, except as otherwise allowed under the applicable provisions of 20.2.7 NMAC and 40 CFR 60 Subpart A (E301, E303, and E304 only). In addition, Control Devices associated with Emission Units E301, E303, and E304 are subject to the requirements of 40 CFR 60.11(d). Each baghouse associated with the boilers shall be maintained and operated in accordance with good air pollution control practices for minimizing emissions. Individual boilers shall only be operated when its associated baghouse is achieving a control efficiency sufficient to ensure compliance with all applicable particulate emission limits listed in this permit.
Monitoring: For baghouses associated with Units E301, E302, E303, and E304, PNM shall record the pressure drop across each baghouse with a continuous monitoring device. The continuous monitoring device shall be designed with an alarm that records and signals to the operator any excursion outside the normal operating range of the baghouse. The normal operating range of the baghouse shall be determined by the manufacture or another Department approved method.
Recordkeeping: In accordance with Section B109, the pressure drop for each baghouse will be recorded hourly and these records will be kept on site for review.
Reporting: No reporting required in accordance with Section B110 of this permit.

B. CAM Monitoring, Units E301, E302, E303, and E304

Requirement: CAM Rule Corrective Action Requirements:

(1) The units are pollutant specific emission units for SO₂, NO_x and PM and are subject to and shall comply with the requirements of 40 CFR Part 64, Compliance Assurance Monitoring, including the requirements of 40 CFR 64.7(d) for corrective actions. Each unit has CEMS for SO₂ and NO_x which are required under acid rain regulations and, therefore, exempt SO₂ and NO_x from CAM requirements.

(2) As a requirement of this permit the permittee is subject to and shall comply with the corrective provisions of the PM CAM Plan dated July 2010 submitted in the application for this permit and attached to this permit, except that the trigger points for corrective actions and excursions shall be those specified in Table 402.B.

(3) In accordance with 40 CFR 64.6(b), the permittee shall submit COM data 12-months after the issuance of this permit to show that the indicator range of 6% for Opacity has been set sufficiently to satisfy the requirements of 40 CFR 64 and to confirm the appropriateness of the indicator.

(40 CFR 64 and 20.2.70.302.A(7) NMAC)

Monitoring:

(1) The permittee shall continuously monitor opacity of the units in accordance with the specifications of 40 CFR Part 60, Appendix B for continuous opacity monitors (COMs). (40 CFR 64.6(c)(1)(ii) and 20.2.70.302.A(7)).

(2) The COMs shall collect at least one duct opacity reading every 10 seconds, except as allowed by (4) below (40 CFR 64.6(c)(1)(iii), 40 CFR 64.3(b)(4), 40 CFR 64.3(d)(3), and 20.2.70.302.A(7)).

(3) The COMs shall be maintained at all times, including but not limited to maintaining the spare parts necessary for routine repairs (40 CFR 64.6(c)(3) and 40 CFR 64.7(b)).

(4) Except for applicable monitoring malfunctions, associated repairs, and required quality assurance or control activities, the permittee shall conduct the opacity monitoring at all times that each unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used to meet the requirements of this permit that implement the requirements of 40 CFR Part 64. All data collected during all other periods shall be used in assessing the operation of the control devices for those emission units (40 CFR 64.6(c)(3), 40 CFR 64.7(c)).

(5) For the purposes of terms and conditions of this permit that implement the requirements of 40 CFR Part 64, 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 64.6(c) and 40 CFR 64.7(c)).

CAM Indicators:

(6) Visible emissions (opacity) as measured by COM systems meeting the 40 CFR60 Performance Specification One and located in the fabric filter outlet duct from each unit (per an Alternative Monitoring Plan submitted to EPA).

(7) Differential pressure drop across the fabric filter on each unit.

(8) By-pass damper position (open/closed) indicator.

Recordkeeping: The Permittee shall comply with the requirements of 40 CFR Part 64, Compliance Assurance Monitoring, including the recordkeeping requirements of 40 CFR 64.9(b). (40 CFR 64 and 20.2.70.302.A(7) NMAC).

Reporting: The Permittee shall comply with the requirements of 40 CFR Part 64, Compliance Assurance Monitoring, including the reporting requirements of 40 CFR 64.9(a). (40 CFR 64 and 20.2.70.302.A(7)).

Table 402.B, CAM Indicator Trigger Points for Corrective Actions and Excursions

Indicator	Trigger Point ¹
1	An excursion is defined as a condition when the average opacity exceeds six (6) percent for any consecutive 3-hr period.
2	An excursion is defined as a condition when the fabric filter average differential pressure exceeds 10 inches water column (w.c) for any consecutive 3-hr period.
3	An excursion is defined as a condition when the by-pass damper is in the open position any time when the boiler is in operation.

¹The permittee shall use the permit modification procedures of 20.2.70.404.B NMAC to change the CAM Plan.

C. Duct Leak Management Program on Units E501, E502, E503, and E504

Requirement: The Duct leak management program shall be conducted in accordance with good air pollution control practices for minimizing emission. All remaining combustion gasses shall be exhausted through the primary stack of each unit. Compliance with this requirement shall be determined using data generated by the monitoring and by Department inspections of the units.

The Expansion Joint Maintenance Program (EJMP) shall include:

- a. A written procedure that identifies expansion joint inspection procedures, inspection points, inspection locations, inspection frequency and recordkeeping procedures.
- b. Identification of measures and time taken to mitigate (minimize) and repair leaks including immediate and long-term corrective actions.
- c. Quarterly assessment and evaluation of the EJMP covering the ability of the EJMP to detect and identify leaks, potential preventive maintenance measures identified to prevent or minimize leaks, and assessment of effectiveness of measures taken to minimize leaks.

When each boiler is taken out of service for the purpose of installing the new SCR/SNCR control technologies (balanced draft conversion), this requirement is no longer valid. If the SCR/SNCR technologies are not installed then this requirement remains valid.

Monitoring: Monitor performance of the EJMP to ensure that the program meets the requirements of this permit. At a minimum, this quarterly monitoring shall include an assessment of the program's performance in meeting the requirements above, including an estimate of the actual area of duct leaks present on the subject emission units.

Recordkeeping: Records of the EJMP practices, quarterly inspections, and quarterly assessment of the program's performance shall be maintained on site.

Reporting: No reporting required in accordance with Section B110 of this permit.

D. Limestone Forced Oxidation (LSFO) Scrubber Operations

Requirement: The boilers (E301, E302, E303, and E304) shall be equipped and operated with limestone scrubbers. PNM shall not exceed the emission limits. To the extent necessary to meet the SO₂ emission limits and the SO₂ control efficiency requirements of this permit (Table 106.C), PNM shall add dibasic acid to the limestone slurry feed of each scrubber. The limestone scrubbers (E301, E302, E303, and E304) shall be maintained and operated in accordance with good air pollution control practices for minimizing emissions, except as otherwise allowed under the applicable provisions of 20.2.7 NMAC and 40 CFR 60 Subpart A (E301, E302, and E304 only). Compliance with these requirements shall be determined using data generated and by Department inspections of the units.

Monitoring: Control Devices C09, C11, C13, and C15, associated with Emissions Units E301, E302, E303, and E304, respectively, are subject to monitoring for good air pollution control practices and proper operation and maintenance. This monitoring shall consist of keeping monthly records of the performance of maintenance and repair activities on these control devices.

Recordkeeping: In accordance with Section B109, records of performance on maintenance and repair activities shall be kept on site for review.

Reporting: No reporting required in accordance with Section B110 of this permit.

E. Heat Input

Requirement: Heat input to these boilers shall not increase as a result of installation of the low-NO_x burners. Compliance with this condition shall be provided upon request of the Department. An increase in heat input solely due to an increase in demand is authorized.

Monitoring:

(1) For each boiler, the 24-hour heat input value shall be calculated by multiplying the 24-hour coal flow rate with the 7-day rolling average Btu content of the coal. The 7-day rolling average Btu content of the coal shall be derived from as delivered coal sample analysis. In the event no coal is delivered for 7 or more days, the last 7-day rolling average will be used.

(2) PNM shall keep records of the “as-delivered” heat content of the coal. The heat content of the coal shall be analyzed using an appropriate ASTM method, in accordance with the requirements of the coal contract.

(3) For each boiler, the 365-day rolling total heat input shall be calculated as a summation of the 24-hour heat input value calculated.

Recordkeeping: In accordance with Section B109, records of the “as delivered” heat content of the coal and the 365 day rolling total heat input calculations shall be maintained.

Reporting: No reporting required in accordance with Section B110 of this permit. Upon written request by the Department, PNM shall summarize and report the 365-day rolling total heat input values calculated in (1) above.

F. Continuous Opacity Monitors

Requirement:
(1) Units E301, E303, and E304 are subject to 40 CFR 60 Subpart D and PNM shall operate the COMs for units E301, E303, and E304 as required in 40 CFR 60 Subpart D.
(2) Although Unit 302 is not an affected unit for purposes of NSPS 40 CFR 60, Subpart D, PNM shall install, calibrate, maintain, and operate COMs on Unit E302 per the procedures specified in 40 CFR 60 Subpart D. The COMs for Unit E302 shall be installed in a location comparable to the COM location of Units E301, E303, and E304, unless otherwise approved by the Department.
(3) For units E301, E302, E303, and E304 the permittee shall determine compliance with the opacity limits of the permit on a continuous basis, using data from the current COMS or an EPA approved COMs and an alternative location. All COMs shall be certified or recertified per the procedures in 40 CFR Part 60.
Monitoring: For units E301, E302, E303, and E304 the permittee shall determine compliance with the opacity limits of the permit on a continuous basis, using data from the current COMS or an EPA approved COMs and an alternative location.
Recordkeeping: Records of opacity readings and QA/QC events will be maintained and records of compliance with applicable recordkeeping requirements of 40 CFR 60, Subparts A and D.
Reporting: In accordance with applicable reporting requirements of 40 CFR Part 60, Subparts A and D.

G. 20.2.31 NMAC (Units E301, E302, E303, and E304)

Requirement: The units are subject to and shall comply with the requirements of 20.2.31.112 NMAC for SO ₂ continuous emissions monitoring (CEMS).
Monitoring: SO ₂ continuous emissions monitoring (CEMS).
Recordkeeping: In accordance with Section B109 of this permit and compliance with applicable recordkeeping requirements of 20.2.31.113 NMAC.
Reporting: No reporting is required in accordance with Section B110 of this permit.

H. Periodic Stack Test For Units E301, E302, E303, E304, and E803

Requirement: Units E301, E302, E303, and E304 (boilers) are subject to periodic compliance testing for PM, TSP, PM ₁₀ , PM _{2.5} , and CO using stack tests and Emission Unit E803 is subject to periodic compliance testing for PM using stack tests. The tests for PM, TSP, PM ₁₀ , and PM _{2.5} on Emission Units E301, E302, E303, and E304 (boilers) shall be performed quarterly. The tests for CO on Emission Units E301, E302, E303, and E304 (boilers) shall be performed quarterly. The tests on Emission Unit E803 shall be performed at the discretion of the Department.
Monitoring: The permittee shall perform quarterly tests and keep records of the periodic emissions tests in accordance with Table 402.H and Section B111 of this permit.
Recordkeeping: In accordance with Sections B109 and B111 of this permit.
Reporting: In accordance with Sections B110 and B111 of this permit.

Table 402.H; Quarterly testing Requirements

Pollutant	Reference Method
CO ¹	Methods 1-4 and 10
PM (TSP, PM ₁₀ , PM _{2.5}) ^{2,3,4}	Method 1-5, 5i

¹ Test results that demonstrate compliance with CO emission limits shall also be considered to demonstrate compliance with VOC emission limits for the subject emission unit.

² PNM may use Method 5 or 5i testing to demonstrate compliance with the PM₁₀ and PM_{2.5} standards.

³ PM₁₀ and PM_{2.5} particulate emissions include condensable particulate matter.

⁴ PNM shall conduct compliance testing to determine the condensable portion of actual PM₁₀ and PM_{2.5} emissions using EPA Method 202, annually. PNM will also conduct a Method 5i test at approximately the same time it conducts each Method 202 test.

I. Demister Operations

<p>Requirement: Not Later than November 2011, PNM shall install pressure monitoring systems across the demister elements associated with all of the scrubber modules. Recordkeeping requirements will become effective on January 1, 2012. The monitoring systems shall have the accuracy, reliability and quality to determine whether the demisters are operating in as represented in the Demister Report that is associated with the 14 fps maximum velocity of the demister and based on actual pressure drop readings. (Demister Settlement Agreement, Paragraph 21.j)</p> <p>(1) Each demister will be cleaned with “clean wash water sprays” on a wash sequence which is in automatic mode and in continuous operation. The wash sequence will automatically switch from cell to cell.</p> <p>(2) During plant outages, manual cleaning to remove stubborn deposits as noted during inspections</p>
<p>Monitoring:</p> <p>(1) PNM shall monitor hourly the pressure drop across each demister from a continuous monitoring device. The continuous monitoring device shall be designed with an alarm that records and signals to the operator any excursion equal to or above 0.5 inches W.C. across either level or 1.0 across both.</p> <p>(2) During outages of 96 hours or more, PNM shall inspect the demisters based on manufacturers’ recommendations for deposit which are not cleaned by the clean wash water spraying.</p>
<p>Recordkeeping:</p> <p>(1) PNM shall record hourly the pressure drop across each demister.</p> <p>(2) Record the time and dates of all 3 hour averages equal to or above 0.5 inches W.C. for either of the two (2) levels or 1.0 combined.</p> <p>(3) Record the corrective action taken to return the demister back to normal operation.</p> <p>(4) Record the findings from the demister inspections.</p> <p>(5) Record when manual cleaning is performed.</p>
<p>Reporting: Quarterly reporting is required in accordance with the Consent Decree, Section X, Reporting, Paragraphs 22-26. Once the Consent Decree is terminated then the quarterly reports shall be prepared and maintained onsite in accordance with Condition B110. The Quarterly</p>

reports will continue to be summarized in the semi-annual reporting.

J. 40 CFR 60, Subpart D (Units E301, E303, and E304)

Requirement: The units are subject to 40 CFR 60, Subpart D and the permittee shall comply with the applicable requirements of 40 CFR 60, Subpart A and Subpart D.

Monitoring: The permittee shall comply with all applicable monitoring and testing requirements of 40 CFR 60, Subpart D.

Recordkeeping: Records of compliance with applicable recordkeeping requirements of 40 CFR Part 60, Subparts A and D.

Reporting: In accordance with applicable reporting requirements of 40 CFR Part 60, Subparts A and D.

K. Coal Pulverizer Unit E201

Requirement: The coal pulverizers (E201) shall be entirely enclosed in a structure that is maintained and operated in accordance with good air pollution control practices in order to minimize particulate emissions.

Monitoring: Annual operational inspection, no less than once per calendar year, PNM shall inspect the coal pulverizers to insure operation is in accordance with good air pollution control practices in order to minimize particulate emissions.

Recordkeeping: In accordance with Section B109, PNM shall record the results of the inspections for the coal pulverizers.

Reporting: No reporting required in accordance with Section B110 of this permit.

L. H₂SO₄, Sulfuric Acid Mist Units E301, E302, E303, and E304

Requirement: Only for scenario A as required by the FIP and to demonstrate compliance with the emission limits identified in Table 106.A, the following monitoring is required on a per unit basis.

Monitoring:

The current Method 8A test, as specified in the FIP, does not have the sensitivity to measure accurately to 0.00026 lb/mmBtu levels. As a result, each unit shall be considered in compliance with the sulfuric acid emission limit if the results of the Method 8A test are at or below the level representing three times the representative detection limit (RDL) of Method 8A, which is 0.0018 lb/mmBtu (equal to three times the RDL of 0.0006 lb/mmBtu). This method of demonstrating compliance is consistent with EPA's approach in addressing measurement imprecision and variability for electric generating units, like those at SJGS, and for other industries as well. 77 Fed. Reg. 9304, 9390 (Feb. 16, 2012) (describing a 3xRDL approach). Once every three years from the issuance of this permit, PNM shall conduct a survey of test methods approved by EPA to determine if new test methods are available that can accurately measure 0.00026 lb/mmBtu with a measurement imprecision of less than 20%. Once a new, more accurate test method becomes available, PNM shall perform the test once every calendar year on each unit to demonstrate compliance with the emission limit of 0.00026 lb/mmBtu.

Note, CTM-013 (i.e., Method 8A) indicates that "the minimum detectable limit (MDL) of the

method is 0.50 milligrams/cubic meter,” which translates to 0.0006 lb/mmBtu for SJGS.

Recordkeeping: In accordance with Section B109, PNM shall record the methodology used to calculate the lb/MMBtu emissions and the data used to support the calculations. PNM shall record summaries of the product searches for available test methods. PNM shall record any tests performed.

Reporting: In accordance with Section B110 of this permit, the permittee shall report semi-annually a summary of the Sulfuric Acid Mist emissions in lb/MMBtu and any changes in available testing options.

M. Ammonia Slip Units E301, E302, E303, and E304

Requirement: To demonstrate compliance with the emission limits identified in Table 106.A, PNM must confirm as part of its initial compliance demonstration following the construction of the additional control equipment authorized by this permit that the controls are designed to meet the applicable ammonia slip limits (2 ppm for SCR under Scenario A, and 10 ppm for SNCR under Scenario B). Since no further emission limits apply, no additional monitoring is required.

Monitoring: None

Recordkeeping: In accordance with Section B109, PNM shall record the initial compliance demonstration.

Reporting: In accordance with Section B110 of this permit, the permittee shall report the initial compliance demonstration.

A403 Engines

A. Units E602, E603, E604, E605, E606, and E607 (emergency generators)

Requirement: Units shall burn only No. 2 Diesel Fuel Oil. Except for maintenance and testing activities, units shall only be operated during the unavoidable loss of commercial utility power. Each emergency generator shall not operate more than 500 hours per year. Compliance with this requirement shall be determined using hours of operation data.

Monitoring: Monitor emission by maintaining records to demonstrate that only No. 2 Diesel Fuel Oil was used and that each unit did not operate more than 500 hours per calendar year during an unavoidable loss of commercial utility power. PNM shall monitor the operating hours of the emergency generators.

Recordkeeping: In accordance with Section B109, PNM shall record the monthly and 12 month total operating hours of each emergency generator.

Reporting: No reporting is required in accordance with Section B110 of this permit.

A404 Heaters - Not Required

A405 Cooling Towers**A. Operational Requirements for Units E406, E407, E408, E409, and E410**

Requirement: Cooling towers shall be maintained and operated according to manufacturer's recommendations and good engineering practices, and the circulating water rate, total dissolved solids (TDS) content of that water, and the drift rate for the units shall not exceed the values specified in Table 405.A below. Compliance with these limits shall be determined using data generated by the monitoring and by Department inspections of the units.
Monitoring: PNM shall measure the TDS concentration of each cooling tower no less than once each calendar quarter.
Recordkeeping: In accordance with Section B109, no less than once each calendar quarter, the permittee shall record the TDS concentration of each cooling tower. The permittee shall then calculate and record the individual cooling tower PM emissions quarterly, based on the maximum capacity of the circulating water pump(s) for each unit, the actual TDS content, and the units specific drift rate.
Reporting: No reporting required in accordance with Section B110 of this permit.

Table 405.A, Circulating Rate, TDS, and Drift Rate Operational Limits for Cooling Towers

Emission Unit No.	Circulating Water Rate (gpm)	TDS Content (milligrams/liter)	Drift Rate (percent)
E406	170,000	6,000	0.002
E407	165,000	6,000	0.002
E408	220,000	3,900	0.0015
E409	227,500	6,000	0.002
E410	35,000	3,900	0.002

A406 Haul Roads/Storage piles (Coal-Fired Plants)**A. Road Area Operational Requirements Units E701, E702, E703, E704, E705, E706, and E707**

Requirement: Road areas shall comply with the operational requirements specified in Table 406.A. Compliance is demonstrated by monitoring and by Department inspections of the units.
Monitoring: The permittee shall monitor emissions by maintaining a log/records of the times and location of water application, the times and location of sweeping, amount of water applied to the haul road, occurrences of visual inspections and by performing weekly visual inspections of the road area to determine that emissions are minimized.
Recordkeeping: In accordance with Section B109, the records will be maintained on site for

review.
Reporting: No reporting required in accordance with Section B110 of this permit.

Table 406 A, Operational Requirements for Road Areas

Emission Unit No.	Operational Requirements
E701, E705, and E708	Unit shall be paved, and swept and watered as necessary, to minimize emissions of TSP and PM ₁₀
E702, E703, E704, E706, and E707	Unit shall be watered as necessary to minimize emissions of TSP and PM ₁₀

B. Facility-Wide Raw Material Limits

Requirement: The calendar year material processing limits in Table 406.B were calculated from the AP-42 emission factors and pounds per hour emission rates for tons processed or gallons consumed. To demonstrate compliance with annual emission limits, the facility shall not process more than the quantities of raw materials specified in Table 406.B. Compliance with this limit shall be determined using data generated here.
Monitoring: The permittee shall monitor and record facility-wide raw material usage on a calendar quarter basis (which coincides with the reporting periods established at Condition A109). PNM shall monitor the quantities of coal, diesel fuel, and limestone processed. (NSR 63M6RI, Condition 3.j) For each 24-hour period, the permittee shall monitor the coal flows in each boiler.
Recordkeeping: In accordance with Section B109, PNM shall maintain quarterly and annual-to-date records of the quantities of coal, diesel fuel, and limestone processed.
Reporting: No reporting required in accordance with Section B110 of this permit.

Table 406.B, Facility-Wide Operational Limits on Raw Materials

Material	Annual Limit
Coal	8,200,000 tons
No. 2 Diesel Fuel Oil	4,112,500 gallons (4 million gpy for the coal fired boilers and 112,500 gpy for the emergency generators)
Limestone	227,000 tons

C. Good Air Pollution Control Practices

Requirement: Coal pile maintenance (E101, E102, E103, and E104), fly ash silo unloading to trucks (E507, E508, E509, E510), limestone delivery system, and limestone pile maintenance (E802) shall be operated in accordance with good air pollution control practices to minimize emissions.
Monitoring: No less than once each calendar year, PNM shall inspect the coal pile maintenance, fly ash silo unloading to trucks, limestone delivery, and limestone pile

maintenance.
Recordkeeping: In accordance with Section B109, PNM shall record the results of the inspection for the coal pile maintenance, fly ash silo unloading to trucks, limestone delivery, and limestone pile maintenance. Records and/or logs of control practices to demonstrate compliance with the controls in the permit application shall be maintained and summarized in the Semi-annual reports.
Reporting: No reporting required in accordance with Section B110 of this permit.

D. NSPS Subpart OOO (Units E803, E804, and E805 (limestone process equipment))

Requirement: Allowable emission limits
Monitoring: The units are subject to and shall comply with the requirements of 40 CFR 60, Subpart A and of 40 CFR 60, Subpart OOO, 60.675(c) for monitoring emissions.
Recordkeeping: In accordance with the applicable requirements of 40 CFR 60, Subpart OOO, 60.676(f). Records of any periodic opacity determinations will be maintained.
Reporting: In accordance with the applicable requirements of 40 CFR 60, Subpart OOO. Opacity test results will be submitted to the NMED.

A407 Storage Silos (activated carbon, fly ash)

A. Activated Carbon Silo Baghouses (Units E901, E902, E903, and E904)

Requirement: Activated Carbon for Mercury emissions control
<ol style="list-style-type: none"> (1) Each of the activated carbon silos shall be equipped with a baghouse operated according to manufacturer's guidelines and specification. The baghouse shall have a design PM emission rate of 0.0092 grains/scf or less and a design baghouse exhaust flow rate of 578 scfm. (2) The activated carbon shall be introduced into the exhaust stream prior to the baghouse used to control particulate matter from the respective boilers. (3) Each activated carbon baghouse shall be equipped and operated with a device to continuously monitor the pressure differential across the baghouse to insure continued compliance.
Monitoring: PNM shall monitor the pressure drop across each activated carbon silo baghouse whenever the silos are loaded. The data capture rate shall be no less than once every six minutes. At a minimum the record shall include the silo designation, date, time, pressure differential, and in the event that the pressure differential is not continually monitored, the silo loading status (fan on or off).
Recordkeeping: PNM shall follow the General Recordkeeping requirement in Section B109.
<ol style="list-style-type: none"> (1) PNM shall keep manufacturer's documentation onsite indicating that each activated carbon silo baghouse was designed to control PM emissions 0.0092 grains/scf or less and design baghouse exhaust flow rate is 578 scfm. (2) PNM shall keep records of the pressure drop across each activated carbon silo baghouse. (3) PNM shall keep the manufacturer's documentation onsite that indicates the proper range that the pressure drop should be during normal operations of each activated carbon silo

baghouse.

Reporting: No reporting required in accordance with Section B110 of this permit.

B. Fly Ash/Limestone Silo Baghouses

Requirement: The fly ash silo loading (E505, E506, E518, and E519) and limestone silo loading (E803) shall be equipped and operated with baghouses. The baghouses shall be equipped and operated with devices to monitor the differential pressure drop across the baghouse. The control devices shall be operated and maintained in accordance with manufacturer's specifications, including specifications for pressure drop, in order to achieve a minimum 99.5% control of TSP, PM ₁₀ , and PM emissions. Compliance with these requirements shall be determined using data generated and by Department inspections of the units.

Monitoring: The permittee shall monitor emissions by measuring the pressure drop across each filter, daily. PNM shall monitor and record the pressure drop across each fly ash silo baghouse (Units 505 and 506). For baghouse associated with the Units E505, E506, E518, E519 and E803, PNM shall monitor the differential pressure drop across the baghouses daily. (Units 505 and 506).

Recordkeeping: In accordance with Section B109, PNM shall record the daily pressure drop measurements for each baghouse.

Reporting: No reporting required in accordance with Section B110 of this permit.

PART B GENERAL CONDITIONS**B100 Introduction**

- A. The Department has reviewed the permit application for the proposed construction/modification/revision and has determined that the provisions of the Act and ambient air quality standards will be met. Conditions have been imposed in this permit to assure continued compliance. 20.2.72.210.D NMAC, states that any term or condition imposed by the Department on a permit is enforceable to the same extent as a regulation of the Environmental Improvement Board.

B101 Legal

- A. The contents of a permit application specifically identified by the Department shall become the terms and conditions of the permit or permit revision. Unless modified by conditions of this permit, the permittee shall construct or modify and operate the Facility in accordance with all representations of the application and supplemental submittals that the Department relied upon to determine compliance with applicable regulations and ambient air quality standards. If the Department relied on air quality modeling to issue this permit, any change in the parameters used for this modeling shall be submitted to the Department for review. Upon the Department's request, the permittee shall submit additional modeling for review by the Department. Results of that review may require a permit modification. (20.2.72.210.A NMAC)
- B. Any future physical changes, changes in the method of operation or changes in restricted area may constitute a modification as defined by 20.2.72 NMAC, Construction Permits. Unless the source or activity is exempt under 20.2.72.202 NMAC, no modification shall begin prior to issuance of a permit. (20.2.72 NMAC Sections 200.A.2 and E, and 210.B.4)
- C. Changes in plans, specifications, and other representations stated in the application documents shall not be made if they cause a change in the method of control of emissions or in the character of emissions, will increase the discharge of emissions or affect modeling results. Any such proposed changes shall be submitted as a revision or modification. (20.2.72 NMAC Sections 200.A.2 and E, and 210.B.4)
- D. The permittee shall establish and maintain the property's Restricted Area as identified in plot plan submitted with the application. (20.2.72 NMAC Sections 200.A.2 and E, and 210.B.4)
- E. Applications for permit revisions and modifications shall be submitted to:
Program Manager, Permits Section

New Mexico Environment Department
Air Quality Bureau
1301 Siler Road, Building B
Santa Fe, New Mexico 87507-3113

- F. At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate the source including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. (20.2.7.109, 20.2.72.210.A, 20.2.72.210.B, 20.2.72.210.C, 20.2.72.210.E NMAC) The establishment of allowable malfunction emission limits does not supersede this requirement.

B102 Authority

- A. This permit is issued pursuant to the Air Quality Control Act (Act) and regulations adopted pursuant to the Act including Title 20, Chapter 2, Part 72 of the New Mexico Administrative Code (NMAC), (20.2.72 NMAC), Construction Permits and is enforceable pursuant to the Act and the air quality control regulations applicable to this source.
- B. The Department is the Administrator for 40 CFR Parts 60, 61, and 63 pursuant to the delegation and exceptions of Section 10 of 20.2.77 NMAC (NSPS), 20.2.78 NMAC (NESHAP), and 20.2.82 NMAC (MACT).

B103 Annual Fee

- A. The Department will assess an annual fee for this Facility. The regulation 20.2.75 NMAC set the fee amount at \$1,500 through 2004 and requires it to be adjusted annually for the Consumer Price Index on January 1. The current fee amount is available by contacting the Department or can be found on the Department's website. The AQB will invoice the permittee for the annual fee amount at the beginning of each calendar year. This fee does not apply to sources which are assessed an annual fee in accordance with 20.2.71 NMAC. For sources that satisfy the definition of "small business" in 20.2.75.7.F NMAC, this annual fee will be divided by two. (20.2.75.11 NMAC)
- B. All fees shall be remitted in the form of a corporate check, certified check, or money order made payable to the "NM Environment Department, AQB" mailed to the address shown on the invoice and shall be accompanied by the remittance slip attached to the invoice.

B104 Appeal Procedures

- A. Any person who participated in a permitting action before the Department and who is adversely affected by such permitting action, may file a petition for hearing before the Environmental Improvement Board. The petition shall be made in writing to the Environmental Improvement Board within thirty (30) days from the date notice is given of the Department's action and shall specify the portions of the permitting action to which the petitioner objects, certify that a copy of the petition has been mailed or hand-delivered and attach a copy of the permitting action for which review is sought. Unless a timely request for hearing is made, the decision of the Department shall be final. The petition shall be copied simultaneously to the Department upon receipt of the appeal notice. If the petitioner is not the applicant or permittee, the petitioner shall mail or hand-deliver a copy of the petition to the applicant or permittee. The Department shall certify the administrative record to the board. Petitions for a hearing shall be sent to: (20.2.72.207.F NMAC)

Secretary, New Mexico Environmental Improvement Board
1190 St. Francis Drive, Runnels Bldg. Rm. N2153
P.O. Box 5469
Santa Fe, New Mexico 87502

B105 Submittal of Reports and Certifications

- A. Stack Test Protocols and Stack Test Reports shall be submitted electronically to Stacktest.AQB@state.nm.us or as directed by the Department.
- B. Excess Emission Reports shall be submitted electronically to exereports.aqb@state.nm.us. (20.2.7.110 NMAC)
- C. Regularly scheduled reports shall be submitted to:
Manager, Compliance and Enforcement Section
New Mexico Environment Department
Air Quality Bureau
1301 Siler Road, Building B
Santa Fe, New Mexico 87507-3113

B106 NSPS and/or MACT Startup, Shutdown, and Malfunction Operations

- A. If a facility is subject to a NSPS standard in 40 CFR 60, each owner or operator that installs and operates a continuous monitoring device required by a NSPS regulation shall comply with the excess emissions reporting requirements in accordance with 40 CFR 60.7(c), unless specifically exempted in the applicable subpart.

- B. If a facility is subject to a NSPS standard in 40 CFR 60, then in accordance with 40 CFR 60.8(c), emissions in excess of the level of the applicable emission limit during periods of startup, shutdown, and malfunction shall not be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.
- C. If a facility is subject to a MACT standard in 40 CFR 63, then the facility is subject to the requirement for a Startup, Shutdown and Malfunction Plan (SSM) under 40 CFR 63.6(e)(3), unless specifically exempted in the applicable subpart.

B107 Startup, Shutdown, and Maintenance Operations

- A. The establishment of permitted startup, shutdown, and maintenance (SSM) emission limits does not supersede the requirements of 20.2.7.14.A NMAC. Except for operations or equipment subject to Condition B106, the permittee shall establish and implement a plan to minimize emissions during routine or predictable start up, shut down, and scheduled maintenance (SSM work practice plan) and shall operate in accordance with the procedures set forth in the plan. (SSM work practice plan. (20.2.7.14.A NMAC)

B108 General Monitoring Requirements

- A. These requirements do not supersede or relax requirements of federal regulations.
- B. The following monitoring requirements shall be used to determine compliance with applicable requirements and emission limits. Any sampling, whether by portable analyzer or EPA reference method, that measures an emission rate over the applicable averaging period greater than an emission limit in this permit constitutes noncompliance with this permit. The Department may require, at its discretion, additional tests pursuant to EPA Reference Methods at any time, including when sampling by portable analyzer measures an emission rate greater than an emission limit in this permit; but such requirement shall not be construed as a determination that the sampling by portable analyzer does not establish noncompliance with this permit and shall not stay enforcement of such noncompliance based on the sampling by portable analyzer.
- C. If the emission unit is shutdown at the time when periodic monitoring is due to be accomplished, the permittee is not required to restart the unit for the sole purpose of performing the monitoring. Using electronic or written mail, the permittee shall notify the Department's Compliance and Enforcement Section of a delay in emission tests prior to the deadline for accomplishing the tests. Upon recommencing operation, the permittee shall submit any pertinent pre-test notification requirements set forth in the current version of the Department's Standard Operating Procedures For Use Of Portable Analyzers in Performance Test, and shall accomplish the monitoring.

- D. The requirement for monitoring during any monitoring period is based on the percentage of time that the unit has operated. However, to invoke monitoring exemptions at B108.D(2), hours of operation shall be monitored and recorded.
- (1) If the emission unit has operated for more than 25% of a monitoring period, then the permittee shall conduct monitoring during that period.
 - (2) If the emission unit has operated for 25% or less of a monitoring period then the monitoring is not required. After two successive periods without monitoring, the permittee shall conduct monitoring during the next period regardless of the time operated during that period, except that for any monitoring period in which a unit has operated for less than 10% of the monitoring period, the period will not be considered as one of the two successive periods.
 - (3) If invoking the monitoring **period** exemption in B108.D(2), the actual operating time of a unit shall not exceed the monitoring period required by this permit before the required monitoring is performed. For example, if the monitoring period is annual, the operating hours of the unit shall not exceed 8760 hours before monitoring is conducted. Regardless of the time that a unit actually operates, a minimum of one of each type of monitoring activity shall be conducted during any five-year period.
- E. For all periodic monitoring events, except when a federal or state regulation is more stringent, three test runs shall be conducted at 90% or greater of the unit's capacity as stated in this permit, or in the permit application if not in the permit, and at additional loads when requested by the Department. If the 90% capacity cannot be achieved, the monitoring will be conducted at the maximum achievable load under prevailing operating conditions except when a federal or state regulation requires more restrictive test conditions. The load and the parameters used to calculate it shall be recorded to document operating conditions and shall be included with the monitoring report.
- F. When requested by the Department, the permittee shall provide schedules of testing and monitoring activities. Compliance tests from previous NSR and Title V permits may be re-imposed if it is deemed necessary by the Department to determine whether the source is in compliance with applicable regulations or permit conditions.
- G. If monitoring is new or is in addition to monitoring imposed by an existing applicable requirement, it shall become effective 120 days after the date of permit issuance. For emission units that have not commenced operation, the associated new or additional monitoring shall not apply until 120 days after the units commence operation. All pre-existing monitoring requirements incorporated in this permit shall continue to apply from the date of permit issuance.

B109 General Recordkeeping Requirements

- A. The permittee shall maintain records to assure and verify compliance with the terms and conditions of this permit and any other applicable requirements that become effective after permit issuance. The minimum information to be included in these records is:
- (1) equipment identification (include make, model and serial number for all tested equipment and emission controls);
 - (2) date(s) and time(s) of sampling or measurements;
 - (3) date(s) analyses were performed;
 - (4) the qualified entity that performed the analyses;
 - (5) analytical or test methods used;
 - (6) results of analyses or tests; and
 - (7) operating conditions existing at the time of sampling or measurement.
- B. Except as provided in the Specific Conditions, records shall be maintained on-site or at the permittee's local business office for a minimum of two (2) years from the time of recording and shall be made available to Department personnel upon request. Sources subject to 20.2.70 NMAC "Operating Permits" shall maintain records on-site for a minimum of five (5) years from the time of recording.
- C. Malfunction emissions and routine and predictable emissions during startup, shutdown, and scheduled maintenance (SSM):
- (1) The permittee shall keep records of all events subject to the plan to minimize emissions during routine or predictable SSM. (20.2.7.14.A NMAC)
 - (2) If the facility has allowable SSM emission limits in this permit, the permittee shall record all SSM events, including the date, the start time, the end time, and a description of the event. This record also shall include a copy of the manufacturer's, or equivalent, documentation showing that any maintenance qualified as scheduled. Scheduled maintenance is an activity that occurs at an established frequency pursuant to a written protocol published by the manufacturer or other reliable source. The authorization of allowable SSM emissions does not supersede any applicable federal or state standard. The most stringent requirement applies.
 - (3) If the facility has allowable malfunction emission limits in this permit, the permittee shall record all malfunction events to be applied against these limits, including the date, the start time, the end time, and a description of the event. **Malfunction means** any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential

to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. (40 CFR 63.2, 20.2.7.7.E NMAC) The authorization of allowable malfunction emissions does not supersede any applicable federal or state standard. The most stringent requirement applies. This authorization only allows the permittee to avoid submitting reports under 20.2.7 NMAC for total annual emissions that are below the authorized limit.

B110 General Reporting Requirements

(20.2.72 NMAC Sections 210 and 212)

- A. Records and reports shall be maintained on-site unless specifically required to be submitted to the Department or EPA by another condition of this permit or by a state or federal regulation. Records for unmanned sites may be kept at the nearest company office.
- B. The permittee shall notify the Department's Compliance Reporting Section using the current Submittal Form posted to NMED's Air Quality web site under Compliance and Enforcement/Submittal Forms in writing of, or provide the Department with (20.2.72.212.A and B):
 - (1) the anticipated date of initial startup of each new or modified source not less than thirty (30) days prior to the date. Notification may occur prior to issuance of the permit, but actual startup shall not occur earlier than the permit issuance date;
 - (2) after receiving authority to construct, the equipment serial number as provided by the manufacturer or permanently affixed if shop-built and the actual date of initial startup of each new or modified source within fifteen (15) days after the startup date; and
 - (3) the date when each new or modified emission source reaches the maximum production rate at which it will operate within fifteen (15) days after that date.
- C. The permittee shall notify the Department's Permitting Program Manager, in writing of, or provide the Department with (20.2.72.212.C and D):
 - (1) any change of operators or any equipment substitutions within fifteen (15) days of such change;
 - (2) any necessary update or correction no more than sixty (60) days after the operator knows or should have known of the condition necessitating the update or correction of the permit.
- D. Results of emission tests and monitoring for each pollutant (except opacity) shall be reported in pounds per hour (unless otherwise specified) and tons per year. Opacity shall be reported in percent. The number of significant figures corresponding to the full accuracy inherent in the testing instrument or Method test used to obtain the data

shall be used to calculate and report test results in accordance with 20.2.1.116.B and C NMAC. Upon request by the Department, CEMS and other tabular data shall be submitted in editable, MS Excel format.

- E. The permittee shall submit reports of excess emissions in accordance with 20.2.7.110.A NMAC.

B111 General Testing Requirements

A. Compliance Tests

- (1) Compliance test requirements from previous permits (if any) are still in effect, unless the tests have been satisfactorily completed. Compliance tests may be re-imposed if it is deemed necessary by the Department to determine whether the source is in compliance with applicable regulations or permit conditions. (20.2.72 NMAC Sections 210.C and 213)
- (2) Compliance tests shall be conducted within sixty (60) days after the unit(s) achieve the maximum normal production rate. If the maximum normal production rate does not occur within one hundred twenty (120) days of source startup, then the tests must be conducted no later than one hundred eighty (180) days after initial startup of the source.
- (3) Unless otherwise indicated by Specific Conditions or regulatory requirements, the default time period for each test run shall be **at least** 60 minutes and each performance test shall consist of three separate runs using the applicable test method. For the purpose of determining compliance with an applicable emission limit, the arithmetic mean of results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three 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 Department approval, be determined using the arithmetic mean of the results of the two other runs.
- (4) Testing of emissions shall be conducted with the emissions unit operating at 90 to 100 percent of the maximum operating rate allowed by the permit. If it is not possible to test at that rate, the source may test at a lower operating rate, subject to the approval of the Department.
- (5) Testing performed at less than 90 percent of permitted capacity will limit emission unit operation to 110 percent of the tested capacity until a new test is conducted.
- (6) If conditions change such that unit operation above 110 percent of tested capacity is possible, the source must submit a protocol to the Department within 30 days of such change to conduct a new emissions test.

B. EPA Reference Method Tests

- (1) All compliance tests required by this permit, unless otherwise specified by Specific Conditions of this permit, shall be conducted in accordance with the requirements of CFR Title 40, Part 60, Subpart A, General Provisions, and the following EPA Reference Methods as specified by CFR Title 40, Part 60, Appendix A:
 - (a) Methods 1 through 4 for stack gas flowrate
 - (b) Method 5 for TSP
 - (c) Method 6C and 19 for SO₂
 - (d) Method 7E for NO_x (test results shall be expressed as nitrogen dioxide (NO₂) using a molecular weight of 46 lb/lb-mol in all calculations (each ppm of NO/NO₂ is equivalent to 1.194×10^{-7} lb/SCF)
 - (e) Method 9 for opacity
 - (f) Method 10 for CO
 - (g) Method 19 may be used in lieu of Methods 1-4 for stack gas flowrate upon approval of the Department. A justification for this proposal must be provided along with a contemporaneous fuel gas analysis (preferably on the day of the test) and a recent fuel flow meter calibration certificate (within the most recent quarter).
 - (h) Method 7E or 20 for Turbines per 60.335 or 60.4400
 - (i) Method 29 for Metals
 - (j) Method 201A for filterable PM₁₀ and PM_{2.5} (Dry Stacks)
 - (k) Method 5, 5B or 5I for filterable PM₁₀ and PM_{2.5} (Wet Stacks)
 - (l) Method 202 for condensable PM
 - (m) Method 320 for organic Hazardous Air Pollutants (HAPs)
 - (n) Method 25A for VOC reduction efficiency
- (2) Alternative test method(s) may be used if the Department approves the change

C. Periodic Monitoring and Portable Analyzer Requirements

- (1) Periodic emissions tests (periodic monitoring) may be conducted in accordance with EPA Reference Methods or by utilizing a portable analyzer. Periodic monitoring utilizing a portable analyzer shall be conducted in accordance with the requirements of ASTM D 6522-00. However, if a facility has met a previously approved Department criterion for portable analyzers, the analyzer may be operated in accordance with that criterion until it is replaced.

- (2) Unless otherwise indicated by Specific Conditions or regulatory requirements, the default time period for each test run shall be as follows:
 - (a) For quarterly monitoring, **at least 20 minutes**
 - (b) For annual monitoring, at least 60 minutesEach performance test shall consist of three separate runs. The arithmetic mean of results of the three runs shall be used to determine compliance with the applicable emission limit
- (3) Testing of emissions shall be conducted with the emissions unit operating at 90 to 100 percent of the maximum operating rate allowed by the permit. If it is not possible to test at that rate, the source may test at a lower operating rate, subject to prior approval of the Department.
- (4) During emissions tests, pollutant, O₂ concentration and fuel flow rate shall be monitored and recorded. This information shall be included with the test report furnished to the Department.
- (5) Pollutant emission rate shall be calculated in accordance with 40 CFR 60, Appendix A, Method 19 utilizing fuel flow rate (scf) and fuel heating value (Btu/scf) obtained during the test.

D. Test Procedures:

- (1) The permittee shall notify the Department's Program Manager, Compliance and Enforcement Section at least thirty (30) days before the test date and allow a representative of the Department to be present at the test.
- (2) Equipment shall be tested in the "as found" condition. Equipment may not be adjusted or tuned prior to any test for the purpose of lowering emissions, and then returned to previous settings or operating conditions after the test is complete.
- (3) Contents of test notifications, protocols and test reports shall conform to the format specified by the Department's Universal Test Notification, Protocol and Report Form and Instructions. Current forms and instructions are posted to NMED's Air Quality web site under Compliance and Enforcement Testing.
- (4) The permittee shall provide (a) sampling ports adequate for the test methods applicable to the facility, (b) safe sampling platforms, (c) safe access to sampling platforms and (d) utilities for sampling and testing equipment.
- (5) The stack shall be of sufficient height and diameter and the sample ports shall be located so that a representative test of the emissions can be performed in accordance with the requirements of EPA Method 1 or ASTM D 6522-00 as applicable.
- (6) Where necessary to prevent cyclonic flow in the stack, flow straighteners shall be installed

- (7) Unless otherwise indicated by Specific Conditions or regulatory requirements, test reports shall be submitted to the Department no later than 30 days after completion of the test.

B112 Compliance

- A. The Department shall be given the right to enter the facility at all reasonable times to verify the terms and conditions of this permit. Required records shall be organized by date and subject matter and shall at all times be readily available for inspection. The permittee, upon verbal or written request from an authorized representative of the Department who appears at the facility, shall immediately produce for inspection or copying any records required to be maintained at the facility. Upon written request at other times, the permittee shall deliver to the Department paper or electronic copies of any and all required records maintained on site or at an off-site location. Requested records shall be copied and delivered at the permittee's expense within three business days from receipt of request unless the Department allows additional time. Required records may include records required by permit and other information necessary to demonstrate compliance with terms and conditions of this permit. (NMSA 1978, Section 74-2-13)
- B. A copy of the most recent permit(s) issued by the Department shall be kept at the permitted facility or (for unmanned sites) at the nearest company office and shall be made available to Department personnel for inspection upon request. (20.2.72.210.B.4 NMAC)
- C. Emissions limits associated with the energy input of a Unit, i.e. lb/MMBtu, shall apply at all times unless stated otherwise in a Specific Condition of this permit. The averaging time for each emissions limit, including those based on energy input of a Unit (i.e. lb/MMBtu) is one (1) hour unless stated otherwise in a Specific Condition of this permit or in the applicable requirement that establishes the limit.

B113 Permit Cancellation and Revocation

- A. The Department may revoke this permit if the applicant or permittee has knowingly and willfully misrepresented a material fact in the application for the permit. Revocation will be made in writing, and an administrative appeal may be taken to the Secretary of the Department within thirty (30) days. Appeals will be handled in accordance with the Department's Rules Governing Appeals From Compliance Orders.
- B. The Department shall automatically cancel any permit for any source which ceases operation for five (5) years or more, or permanently. Reactivation of any source after the five (5) year period shall require a new permit. (20.2.72 NMAC)

- C. The Department may cancel a permit if the construction or modification is not commenced within two (2) years from the date of issuance or if, during the construction or modification, work is suspended for a total of one (1) year. (20.2.72 NMAC)

B114 Notification to Subsequent Owners

- A. The permit and conditions apply in the event of any change in control or ownership of the Facility. No permit modification is required in such case. However, in the event of any such change in control or ownership, the permittee shall notify the succeeding owner of the permit and conditions and shall notify the Department's Program Manager, Permits Section of the change in ownership within fifteen (15) days of that change. (20.2.72.212.C NMAC)
- B. Any new owner or operator shall notify the Department's Program Manager, Permits Section, within thirty (30) days of assuming ownership, of the new owner's or operator's name and address. (20.2.73.200.E.3 NMAC)

B115 Asbestos Demolition

- A. Before any asbestos demolition or renovation work, the permittee shall determine whether 40 CFR 61 Subpart M, National Emissions Standards for Asbestos applies. If required, the permittee shall notify the Department's Program Manager, Compliance and Enforcement Section using forms furnished by the Department.

B116 Short Term Engine Replacement

- A. The following Alternative Operating Scenario (AOS) addresses engine breakdown or periodic maintenance and repair, which requires the use of a short term replacement engine. The following requirements do not apply to engines that are exempt per 20.2.72.202.B(3) NMAC. Changes to exempt engines must be reported in accordance with 20.2.72.202.B NMAC. A short term replacement engine may be substituted for any engine allowed by this permit for no more than 120 days in any rolling twelve month period per permitted engine. The compliance demonstrations required as part of this AOS are in addition to any other compliance demonstrations required by this permit.
 - (1) The permittee may temporarily replace an existing engine that is subject to the emission limits set forth in this permit with another engine regardless of manufacturer, model, and horsepower without modifying this permit. The permittee shall submit written notification to the Department within 15 days of the date of engine substitution according to condition B110.C(1).

- (a) The potential emission rates of the replacement engine shall be determined using the replacement engine's manufacturer specifications and shall comply with the existing engine's permitted emission limits.
- (b) The direction of the exhaust stack for the replacement engine shall be either vertical or the same direction as for the existing engine. The replacement engine's stack height and flow parameters shall be at least as effective in the dispersion of air pollutants as the modeled stack height and flow parameters for the existing permitted engine. The following equation may be used to show that the replacement engine disperses pollutants as well as the existing engine. The value calculated for the replacement engine on the right side of the equation shall be equal to or greater than the value for the existing engine on the left side of the equation. The permitting page of the Air Quality Bureau website contains a spreadsheet that performs this calculation.

EXISTING ENGINEREPLACEMENT ENGINE

$$\frac{[(g) \times (h1)] + [(v1)^2/2] + [(c) \times (T1)]}{q1} \leq \frac{[(g) \times (h2)] + [(v2)^2/2] + [(c) \times (T2)]}{q2}$$

Where

g = gravitational constant = 32.2 ft/sec²

h1 = existing stack height, feet

v1 = exhaust velocity, existing engine, feet per second

c = specific heat of exhaust, 0.28 BTU/lb-degree F

T1 = absolute temperature of exhaust, existing engine = degree F + 460

q1 = permitted allowable emission rate, existing engine, lbs/hour

h2 = replacement stack height, feet

v2 = exhaust velocity, replacement engine, feet per second

T2 = absolute temperature of exhaust, replacement engine = degree F + 460

q2 = manufacturer's potential emission rate, replacement engine, lbs/hour

The permittee shall keep records showing that the replacement engine is at least as effective in the dispersion of air pollutants as the existing engine.

(c) Test measurement of NO_x and CO emissions from the temporary replacement engine shall be performed in accordance with Section B111 with the exception of Condition B111A(3) and B111B for EPA Reference Methods Tests or Section B111C for portable analyzer test measurements. Compliance test(s) shall be conducted within fifteen (15) days after the unit begins operation, and records of the results shall be kept according to section B109.B. This test shall be performed even if the engine is removed prior to 15 days on site.

- i. These compliance tests are not required for an engine certified under 40CFR60, subparts IIII, or JJJJ, or 40CFR63, subpart ZZZZ if the permittee demonstrates that one of these requirements causes such engine to comply with all emission limits of this permit. The permittee shall submit this demonstration to the Department within 48 hours of placing the new unit into operation. This submittal shall include documentation that the engine is certified, that the engine is within its useful life, as defined and specified in the applicable requirement, and shall include calculations showing that the applicable emissions standards result in compliance with the permit limits.
- ii. These compliance tests are not required if a test was conducted by portable analyzer or by EPA Method test (including any required by 40CFR60, subparts IIII and JJJJ and 40CFR63, subpart ZZZZ) within the last 12 months. These previous tests are valid only if

conducted at the same or lower elevation as the existing engine location prior to commencing operation as a temporary replacement. A copy of the test results shall be kept according to section B109.B.

- (d) Compliance tests for NO_x and CO shall be conducted if requested by the Department in writing to determine whether the replacement engine is in compliance with applicable regulations or permit conditions.
 - (e) Upon determining that emissions data developed according to B116.A.1(c) fail to indicate compliance with either the NO_x or CO emission limits, the permittee shall notify the Department within 48 hours. Also within that time, the permittee shall implement one of the following corrective actions:
 - i. The engine shall be adjusted to reduce NO_x and CO emissions and tested per B116.A.1(c) to demonstrate compliance with permit limits.
 - ii. The engine shall discontinue operation or be replaced with a different unit.
- (2) Short term replacement engines, whether of the same manufacturer, model, and horsepower, or of a different manufacturer, model, or horsepower, are subject to all federal and state applicable requirements, regardless of whether they are set forth in this permit (including monitoring and recordkeeping), and shall be subject to any shield afforded by this permit.
- (3) The permittee shall maintain a contemporaneous record documenting the unit number, manufacturer, model number, horsepower, emission factors, emission test results, and serial number of any existing engine that is replaced, and the replacement engine. Additionally, the record shall document the replacement duration in days, and the beginning and end dates of the short term engine replacement.
- (4) The permittee shall maintain records of a regulatory applicability determination for each replacement engine (including 40CFR60, subparts IIII and JJJJ and 40CFR63, subpart ZZZZ) and shall comply with all associated regulatory requirements.
- B. Additional requirements for replacement of engines at sources that are major as defined in regulation 20.2.74 NMAC, Permits – Prevention of Significant Deterioration, section 7.AF. For sources that are major under PSD, the total cumulative operating hours of the replacement engine shall be limited using the following procedure:
- (1) Daily, the actual emissions from the replacement engine of each pollutant regulated by this permit for the existing engine shall be calculated and recorded.

- (2) The sum of the total actual emissions since the commencement of operation of the replacement engine shall not exceed the significant emission rates in Table 2 of 20.2.74 NMAC, section 502 for the time that the replacement engine is located at the facility.
- C. All records required by this section shall be kept according to section B109.

PART C MISCELLANEOUS

C100 Supporting On-Line Documents

- A. Copies of the following documents can be downloaded from NMED's web site under Compliance and Enforcement or requested from the Bureau.
- (1) Excess Emission Form (for reporting deviations and emergencies)
 - (2) Universal Stack Test Notification, Protocol and Report Form and Instructions
 - (3) SOP for Use of Portable Analyzers in Performance Tests

C101 Definitions

- A. **"Daylight"** is defined as the time period between sunrise and sunset, as defined by the Astronomical Applications Department of the U.S. Naval Observatory. (Data for one day or a table of sunrise/sunset for an entire year can be obtained at <http://aa.usno.navy.mil/>. Alternatively, these times can be obtained from a Farmer's Almanac or from <http://www.almanac.com/rise/>).
- B. **"Exempt Sources"** and **"Exempt Activities"** is defined as those sources or activities that are exempted in accordance with 20.2.72.202 NMAC. Note; exemptions are only valid for most 20.2.72 NMAC permitting actions.
- C. **"Fugitive Emission"** means those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening.
- D. **"Insignificant Activities"** means those activities which have been listed by the department and approved by the administrator as insignificant on the basis of size, emissions or production rate. Note; insignificant activities are only valid for 20.2.70 NMAC permitting actions.
- E. **"Natural Gas"** is defined as a naturally occurring fluid mixture of hydrocarbons that contains 20.0 grains or less of total sulfur per 100 standard cubic feet (SCF) and is either composed of at least 70% methane by volume or has a gross calorific value of between 950 and 1100 Btu per standard cubic foot. (40 CFR 60.631)

- F. **“Natural Gas Liquids”** means the hydrocarbons, such as ethane, propane, butane, and pentane, that are extracted from field gas. (40 CFR 60.631)
- G. **“National Ambient Air Quality Standards”** means, unless otherwise modified, the primary (health-related) and secondary (welfare-based) federal ambient air quality standards promulgated by the US EPA pursuant to Section 109 of the Federal Act.
- H. **“Night”** is the time period between sunset and sunrise, as defined by the Astronomical Applications Department of the U.S. Naval Observatory. (Data for one day or a table of sunrise/sunset for an entire year can be obtained at <http://aa.usno.navy.mil/>. Alternatively, these times can be obtained from a Farmer's Almanac or from <http://www.almanac.com/rise/>).
- I. **“Night Operation or Operation at Night”** is operating a source of emissions at night.
- J. **“NO₂”** or “Nitrogen dioxide” means the chemical compound containing one atom of nitrogen and two atoms of oxygen, for the purposes of ambient determinations. The term **“nitrogen dioxide,”** for the purposes of stack emissions monitoring, shall include nitrogen dioxide (the chemical compound containing one atom of nitrogen and two atoms of oxygen), nitric oxide (the chemical compound containing one atom of nitrogen and one atom of oxygen), and other oxides of nitrogen which may test as nitrogen dioxide and is sometimes referred to as NO_x or NO_x. (20.2.2 NMAC)
- K. **“NO_x”** see NO₂
- L. **“Potential Emission Rate”** means the emission rate of a source at its maximum capacity to emit a regulated air contaminant under its physical and operational design, provided any physical or operational limitation on the capacity of the source to emit a regulated air contaminant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its physical and operational design only if the limitation or the effect it would have on emissions is enforceable by the department pursuant to the Air Quality Control Act or the federal Act.
- M. **“Restricted Area”** is an area to which public entry is effectively precluded. Effective barriers include continuous fencing, continuous walls, or other continuous barriers approved by the Department, such as rugged physical terrain with a steep grade that would require special equipment to traverse. If a large property is completely enclosed by fencing, a restricted area within the property may be identified with signage only. Public roads cannot be part of a Restricted Area.
- N. **“Shutdown”**, for requirements under 20.2.72 NMAC, means the cessation of operation of any air pollution control equipment, process equipment or process for any purpose, except routine phasing out of batch process units.

- O. "SSM", for requirements under 20.2.7 NMAC, means routine or predictable startup, shutdown, or scheduled maintenance.
 - (1) "Shutdown", for requirements under 20.2.7 NMAC, means the cessation of operation of any air pollution control equipment or process equipment.
 - (2) "Startup", for requirements under 20.2.7 NMAC, means the setting into operation of any air pollution control equipment or process equipment.

- P. "Startup" , for requirements under 20.2.72 NMAC, means the setting into operation of any air pollution control equipment, process equipment or process for any purpose, except routine phasing in of batch process units.

C102 Acronyms

2SLB	2-stroke lean burn
4SLB	4-stroke lean burn
4SRB	4-stroke rich burn
acfm.....	actual cubic feet per minute
AFR.....	air fuel ratio
AP-42	EPA Air Pollutant Emission Factors
AQB	Air Quality Bureau
AQCR	Air Quality Control Region
ASTM	American Society for Testing and Materials
BTU.....	British Thermal Unit
CAA.....	Clean Air Act of 1970 and 1990 Amendments
CEM.....	continuous emissions monitoring
cfh	cubic feet per hour
cfm	cubic feet per minute
CFR.....	Code of Federal Regulation
CI	compression ignition
CO.....	carbon monoxides
COMS	continuous opacity monitoring system
EIB	Environmental Improvement Board
EPA.....	United States Environmental Protection Agency
gr./100 cf.....	grains per one hundred cubic feet
gr./dscf	grains per dry standard cubic foot
GRI.....	Gas Research Institute
HAP.....	hazardous air pollutant
hp	horsepower
H ₂ S.....	hydrogen sulfide
IC	internal combustion
KW/hr	kilowatts per hour
lb/hr.....	pounds per hour
lb/MMBtu	pounds per million British Thermal Unit

MACT	Maximum Achievable Control Technology
MMcf/hr.....	million cubic feet per hour
MMscf.....	million standard cubic feet
N/A.....	not applicable
NAAQS.....	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NG	natural gas
NGL	natural gas liquids
NMAAQs	New Mexico Ambient Air Quality Standards
NMAC.....	New Mexico Administrative Code
NMED.....	New Mexico Environment Department
NMSA.....	New Mexico Statues Annotated
NO _x	nitrogen oxides
NSCR.....	non-selective catalytic reduction
NSPS.....	New Source Performance Standard
NSR.....	New Source Review
PEM	parametric emissions monitoring
PM.....	particulate matter (equivalent to TSP, total suspended particulate)
PM ₁₀	particulate matter 10 microns and less in diameter
PM _{2.5}	particulate matter 2.5 microns and less in diameter
pph.....	pounds per hour
ppmv	parts per million by volume
PSD.....	Prevention of Significant Deterioration
RATA.....	Relative Accuracy Test Assessment
RICE	reciprocating internal combustion engine
rpm	revolutions per minute
scfm.....	standard cubic feet per minute
SI	spark ignition
SO ₂	sulfur dioxide
SSM.....	Startup Shutdown Maintenance (see SSM definition)
TAP.....	Toxic Air Pollutant
TBD.....	to be determined
THC.....	total hydrocarbons
TSP.....	Total Suspended Particulates
tpy	tons per year
ULSD	ultra low sulfur diesel
USEPA.....	United States Environmental Protection Agency
UTM.....	Universal Transverse Mercator Coordinate system
UTMH.....	Universal Transverse Mercator Horizontal
UTMV.....	Universal Transverse Mercator Vertical
VHAP.....	volatile hazardous air pollutant
VOC	volatile organic compounds