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Air Quality Bureau
TITLE V OPERATING PERMIT
Issued under 20.2.70 NMAC

Note to Applicant for Draft Permit Reviews: **The AQB permit specialist provides this draft permit to the applicant as a courtesy to assist AQB with developing practically enforceable permit terms & conditions and correcting any technical errors. Please note that the draft permit may change following completion of the Department's internal reviews. If AQB makes additional changes, and as time allows, the applicant may be provided an opportunity for additional review before the permit is issued.**

Certified Mail No: xxxx xxxx xxxx xxxx
Return Receipt Requested

Operating Permit No:	P211-R2/P211AR3 DRAFT 4/6/2016
Facility Name:	Afton Generating Station (AGS)
Facility Owner/Operator:	Public Service Company of New Mexico (PNM)
Mailing Address:	2401 Aztec Road NE, Mailstop Z100 Albuquerque, NM 87107
TEMPO/IDEA ID No:	164 - PRT20140002/ PRT20140001
AIRS No:	350130048
Permitting Action:	TV Renewal & Acid Rain Renewal
Source Classification:	Title V Major, Acid Rain, & PSD w/ BACT
Facility Location:	325,830m E by 3,554,630m N; Zone 13; Datum NAD83
County:	Dona Ana
Air Quality Bureau Contact:	Linsey Hurst
Main AQB Phone No.	(505) 476-4300
TV Permit Expiration Date:	_____
TV Renewal Application Due:	_____

Richard L. Goodyear, PE
Bureau Chief
Air Quality Bureau

Date

[Prior to submitting for review or final update draft to current template version and update date in footer on cover page to match date of the template.]

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TABLE OF CONTENTS

Part A	FACILITY SPECIFIC REQUIREMENTS	A4
A100	Introduction	A4
A101	Permit Duration (expiration)	A4
A102	Facility: Description	A4
A103	Facility: Applicable Regulations and Non-Applicable Regulations	A5
A104	Facility: Regulated Sources	A7
A105	Facility: Control Equipment	A8
A106	Facility: Allowable Emissions	A8
A107	Facility: Allowable Startup, Shutdown, & Maintenance (SSM) Emissions	A10
A108	Facility: Allowable Operations	A12
A109	Facility: Reporting Schedules (20.2.70.302.E NMAC)	A12
A110	Facility: Fuel and Fuel Sulfur Requirements	A13
A111	Facility: 20.2.61 NMAC Opacity	A13
A112	Alternative Operating Scenario	A14
	EQUIPMENT SPECIFIC REQUIREMENTS	A15
	Power Generation Industry	A15
A600	Power Generation Industry	A15
A601	Turbines	A15
A602	Boilers – <i>Not Required</i>	A18
A603	Engines	A18
A604	Heaters – <i>Not Required</i>	A19
A605	Cooling Towers	A19
A606	Haul Roads/Storage piles (Coal-Fired Plants) – <i>Not Required</i>	A20
A607	Baghouses – <i>Not Required</i>	A20
A608	Tanks	A20
A609	Selective Catalytic Reduction (SCR) System	A20
	Miscellaneous Documents	A21
A800	40 CFR 72 Acid Rain Program Permit P008AR3 (Attached)	A21
PART B	GENERAL CONDITIONS (Attached)	
PART C	MISCELLANEOUS: Supporting On-Line Documents; Definitions; Acronyms (Attached)	

PART A FACILITY SPECIFIC REQUIREMENTS**A100 Introduction**

- A. This permit includes Prevention of Significant Deterioration (PSD) Best Available Control Technology (BACT) requirements that were imposed in accordance with the PSD permit regulation 20.2.74 NMAC. Any revision of any BACT requirement(s) must first be approved by the Department through a new source review permit application that includes a BACT re-evaluation consistent with 20.2.74 NMAC. Removal of any existing BACT requirement(s) also requires Department approval through an appropriate permit application.

A101 Permit Duration (expiration)

- A. The term of this permit is five (5) years. It will expire five years from the date of issuance. Application for renewal of this permit is due twelve (12) months prior to the date of expiration. (20.2.70.300.B.2 and 302.B NMAC)
- B. If a timely and complete application for a permit renewal is submitted, consistent with 20.2.70.300 NMAC, but the Department has failed to issue or disapprove the renewal permit before the end of the term of the previous permit, then the permit shall not expire and all the terms and conditions of the permit shall remain in effect until the renewal permit has been issued or disapproved. (20.2.70.400.D NMAC)

A102 Facility: Description

- A. This facility is a power plant. The major processes associated with the facility are: electricity generation produced by simple cycle or combined cycle combustion turbine fired by either natural gas or fuel oil.
- B. This facility is located in Township 25S, Range 01E, Section 21, approximately 15 miles southwest of Las Cruces, New Mexico in Dona Ana County. The Universal Transverse Mercator (UTM) coordinates for this Facility are UTM E 325830 m, UTM N 3554630 m, and UTM zone 13. This facility is a stationary source and not allowed to relocate. (20.2.70.302.A(7) NMAC)
- C. This TV Permit Renewal incorporates the following changes as permitted under New Source Review (NSR)/ Prevention of Significant Deterioration (PSD) PSD2466-M4: 1) revising the numeric value of the AGS SSM pounds per hour limit for NO_x emissions in Simple Cycle mode, 2) revised condition A405.A Cooling Tower, TDS monitoring and 3) add Greenhouse gas emissions to Table 102.A. Existing Emergency Fire Pump Engine Unit 8 is incorporated into this TV renewal due to a change in the applicability of 40 CFR 63, Subpart ZZZZ. The description of this modification is for informational purposes only and is not enforceable.

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

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

Pollutant	¹Emissions (tons per year)
Nitrogen Oxides (NO _x)	257.9
Carbon Monoxide (CO)	165.8
Volatile Organic Compounds (VOC)*	76.8
Sulfur Dioxide (SO ₂)	13.0
Total Particulate Matter (TSP)	49.1
Particulate Matter less than 10 microns (PM ₁₀)	48.5
Particulate Matter less than 2.5 microns (PM _{2.5})	48.2
Greenhouse Gas (GHG) (CO ₂ e)	781,410

¹ Values are maximum emissions of each pollutant for each of the four possible operating scenarios. Note on how totals/fees amounts are calculated. CO is based on scenario 1 (prorated for 6840 hrs/y to 89.9) plus scenario 3 (prorated for 1920 hrs/y to 76.0) for 165.8 tpy. NO_x is based on scenario 1 (prorated for 8560 hrs/y to 226.8) plus scenario 4 (200 hrs/y max 31.1) for 257.9 tpy. VOC is based on scenario 1 (prorated for 6840 hrs/y to 44.8) plus scenario 3 (prorated for 1920 to 32.0) for 76.8 tpy. TSP, NH₃, and SO₂ are based solely on scenario 2 for 49.1, 82.0, and 13.0 tpy respectively.

* VOC total includes emissions from Fugitives, SSM and Malfunctions

Table 102.B: Total Potential HAPs that exceed 1.0 tons per year

Pollutant	Emissions (tons per year)
Ammonia (TAP)	82.0
Formaldehyde	4.6
Total HAPs**	4.6

* 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 and Non-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.
NSR Permit No: PSD2466-M4 (Per 20.2.72 NMAC)	X	Entire Facility

Table 103.A: Applicable Requirements

Applicable Requirements	Federally Enforceable	Unit No.
20.2.1 NMAC General Provisions	X	Entire Facility
20.2.7 NMAC Excess Emissions	X	Entire Facility
20.2.61 NMAC Smoke and Visible Emissions	X	Units 1, 4, & 7
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	Units 1 & 7
20.2.82 NMAC MACT Standards for Source Categories of HAPs	X	Unit 8
20.2.84 NMAC Acid Rain Permits	X	Unit 1
40 CFR 50 National Ambient Air Quality Standards	X	Entire Facility
40 CFR 60 Subpart A General Provisions	X	Units 1 & 7
40 CFR 60 Subpart Da Standards of Performance for Electric Utility Steam Generating Units	X	Unit 7
40 CFR 60 Subpart GG Stationary Gas Turbines	X	Unit 1
40 CFR 63 Subpart A General Provisions	X	Unit 8
40 CFR 63 Subpart ZZZZ Engines	X	Unit 8
40 CFR 72 Title IV Acid Rain Program	X	Unit 1
40 CFR 73 Sulfur Dioxide Allowance Emissions	X	Unit 1
40 CFR 75 Acid Rain Continuous Emission Monitoring	X	Unit 1

- 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
20.2.3 NMAC Ambient Air Quality Standards	X		
40 CFR 64 Compliance Assurance Monitoring	X		Per 40 CFR 64.2(b)(1) all units are exempt since they are subject to Acid Rain program requirements pursuant to sections 404, 405, 406, 407(a), 407(b), or 410 of the Act.

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. Compliance with the terms and conditions of this permit regarding source emissions and operation demonstrate compliance with national ambient air quality standards specified at 40 CFR 50, which were applicable at the time air dispersion modeling was performed for the facility's NSR Permit 2466-M3.

A104 Facility: Regulated Sources

- A. Table 104.A lists the emission units authorized for this facility. Emission units identified as insignificant or trivial activities (as defined in 20.2.70.7 NMAC) and/or equipment not regulated pursuant to the Act are not included.

Table 104.A: Regulated Sources List

Unit No.	Source Description	Make Model	Serial No.	Capacity	Construction Date	¹Scenario /Control Device
1	Combustion Turbine	General Electric 7FA	298032	164 MW, ² 1,699.6 MMBtu/hr	1/22/2002	SC – none; CC – Unit 3/SCR
2	2 Cell Forced Draft Cooling Tower	GEA	423627-21-24-FCF	18,781 gpm	10/12/2007	CC only -none
3	Heat Recovery Steam Generator (HRSG) with SCR	Cormtech, Inc.	102178	68 MW	10/12/2007	CC only – ammonia injection SCR
4	Dew Point Heater	Thermoflux/ Webster Eng.	9114/64611A-01-001-02	5.1 MMBtu/hr	1/22/2002	SC and CC - none
7	Duct Burner	Coen Co., Inc., Forney Corp.	407265-01	60 MW, 505 MMBtu/hr	10/12/2007	CC only – Unit 3/SCR
8	Fire Pump Engine	Clarke/John Deere JDFP-06WA	RG6081A147 837	265 hp	01/2002	NA

¹ SC = Simple Cycle; CC = Combined Cycle; SCR = Selective Catalytic Reduction

² This 1,669.6 MMBtu/hr is the maximum heat input based on 0 °F for Oil.

The equipment listed above can be used to configure the plant into three different scenarios, each of which provide the production of three levels of power generation.

A105 Facility: Control Equipment

- A. Table 105.A 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.

Table 105.A: Control Requirements:

Control Unit No.	Control Description	Pollutant being controlled	Control for Unit Number(s) ¹	Required for BACT
3	Selective Catalytic Reduction unit from Cormetech, Inc for the catalyst	NOx	1, 7	Yes
3	Good Combustion Practices	VOC and CO	1, 7	Yes

¹ Control for unit number refers to a unit number from the Regulated Sources List

A106 Facility: Allowable Emissions

- A. The following Section lists the emission units, and their allowable emission limits. (40 CFR 50; 40 CFR 60, Subparts A Da, and GG; Paragraphs 1, 7, and 8 of 20.2.70.302.A NMAC; and NSR Permit PSD2466-M4).

Table 106.A: Allowable Emissions

Pollutant	Averaging Period	Simple Cycle ² (Scenario 1, Units 1, 4: Stack 1A)	Combined Cycle ^{3,9} (Scenario 2, Units 1, 3, 4: Stack 1B)	Combined Cycle ^{3,10} (Scenario 3, Units 1, 3, 4, 7: Stack 1B)	Oil Fired ¹¹ (Scenario 4)
NO ₂ (pph) ^{1,13}	24 hour	55.3	22.3	22.6	300.3
NO ₂ (ppmv) ¹³ dry @15% O ₂ (BACT)	24 hour	9.0	3.5 ⁴	3.5 ⁴	42.0
NO ₂ (TPY)	365 day rolling total	232.1	93.1	93.4	31.1
CO (pph) ¹³	24 hour	28.2	28.2	79.2	63.2
CO (ppmv) ¹³ dry @ 15% O ₂ (BACT)	24 hour	9.0	9.0 ⁵	9.0 ⁵	na
CO (tpy)	365 day rolling total	115	115	165	7
VOC (pph)	24 hour	13.1	13.1	33.3	14.1
VOC (ppmv) wet (BACT)	24 hour	7.0	7.0 ⁶	7.0 ⁶	na
VOC (tpy)	365 day rolling total	57.4	57.4	76.8	1.7
SO ₂ (pph)	24 hour	2.8	3.7	3.7	93.0
SO ₂ (tpy)	365 day rolling total	12.0	13.0	13.0	9.0
TSP (pph)	24 hour	10.2	18.2	18.2	17.0
TSP (tpy) ⁷	365 day rolling total	40.2	49.1	49.1	2.2
PM ₁₀ (pph)	24 hour	10.1	18.1	18.1	17.0
PM ₁₀ (tpy) ⁷	365 day rolling total	40.2	48.5	48.5	2.2
PM _{2.5} (pph)	24 hour	10.0	18.0	18.0	17.0

Pollutant	Averaging Period	Simple Cycle ² (Scenario 1, Units 1, 4: Stack 1A)	Combined Cycle ^{3,9} (Scenario 2, Units 1, 3, 4: Stack 1B)	Combined Cycle ^{3,10} (Scenario 3, Units 1, 3, 4, 7: Stack 1B)	Oil Fired ¹¹ (Scenario 4)
PM _{2.5} (tpy) ⁷	365 day rolling total	40.2	48.2	48.2	2.2
NH ₃ (pph)	24 hour	na	21	21	21
NH ₃ (ppm) wet	24 hour		10.0	10.0	10.0
NH ₃ (tpy)	365 day rolling total	na	82	82	na
HCHO (pph) ⁸	NA	1.1	1.1	1.1	0.5
HCHO (tpy)	365 day rolling total	4.6	4.6	4.6	0.05

1. Hourly emissions are at zero degrees Fahrenheit and annual are at 60 degrees Fahrenheit.
 2. Scenario 1, Simple cycle emissions from Units 1 and 4 shall be emitted from Stack 1A
 3. Combined cycle emissions from Units 1, 3, and 4 shall be emitted from Stack 1B
 4. Combined cycle NO₂ emissions of 3.5 PPM shall be achieved using the Department’s BACT determination that SCR at this emission rate constitutes BACT.
 5. Combined cycle CO emissions of 9.0 PPM shall be achieved by using the BACT determination of good combustion practices and the use of natural gas as fuel.
 6. Combined cycle VOC emissions of 7.0 PPM shall be achieved by using the BACT determination of good combustion practices
 7. Particulate emissions in the combined cycle mode include a Cooling Tower contribution of TSP = 0.21 pph and 0.93 tpy; PM₁₀ = .07 pph and 0.3 tpy; and PM_{2.5} = .0004 pph and .002 tpy.
 8. On-going compliance with carbon monoxide emissions shall be used to determine compliance with formaldehyde emissions as suggested by Sims Roy’s 12/30/99 USEPA memorandum regarding formaldehyde emissions from dry low NO_x combustion turbines.
 9. Scenario 2, Combined Cycle without Duct Burner, Unit 7.
 10. Scenario 3, Combined Cycle with Duct Burner, Unit 7.
 11. Scenario 4, Oil Fired emissions shall be counted toward annual plant wide emissions
 12. If the facility has operated in both the simple and combined cycle modes during any 365-day rolling period, the annual emission limit applicable to that 365-day period shall be the pro-rated value in tpy obtained as follows: The sum of a) The ratio of the number of hours of simple cycle operation to total number of operating hours times the simple cycle annual emission limit in tpy; and b) The ratio of the number of hours of combined cycle operation to the total number of operating hours times the combined cycle annual emission limit in tpy.
 13. 24-hour averages for 24-hour periods that include SSM emissions shall be calculated by excluding the hours with SSM emissions and calculating an average based on the remaining emissions and hours during the 24-hour period. An hour with any period of SSM emissions during the hour shall be considered an SSM hour.
 14. The Dew Point Heater emissions have been incorporated into the tons per year emission rates for each scenario.
- B.** Total allowables are for information only, not enforceable conditions, and used to determine annual Operating Fees. Based on the authorized hours of operation per scenario per pollutant in condition A108.A, the following would be the totals used for fee purposes. Values are maximum emissions of each pollutant for each of the four possible operating scenarios. Note on how totals/fees amounts are calculated. CO is based on scenario 1 (prorated for 6840 hrs/y to 89.9) plus scenario 3 (prorated for 1920 hrs/y to 76.0) for 165.8 tpy. NO_x is based on scenario 1 (prorated for 8560 hrs/y to 226.8) plus scenario 4 (200 hrs/y max 31.1) for 257.9 tpy. VOC is based on scenario 1 (prorated for 6840 hrs/y to 44.8) plus scenario 3 (prorated for 1920 to 32.0) for 76.8 tpy. TSP, NH₃, and SO₂ are based solely on scenario 2 for 49.1, 82.0, and 13.0 tpy respectively.

Table 106.B: Allowable Emissions for Annual Fees

	NO _x tpy	CO tpy	VOC tpy	SO ₂ tpy	TSP tpy	TAP-NH ₃ tpy
Total	257.9	165.8	76.8	13.0	49.1	82.0

- C. Emissions from the turbine (Scenarios 1 or 4, Unit 1: Stack 1A), dew point heater (Unit 4, Stack 4), and turbine with or without duct burner (Scenarios 2 or 3, Units 1, 7: Stack 1B) shall not equal or exceed an opacity of 20 percent as required by 20.2.61 NMAC and shall not exceed an opacity of 20 % as required by 40 CFR 60.42Da(b).
- D. The turbine (Unit 1) shall comply with the standard for nitrogen oxide and sulfur dioxide required by 40 CFR 60.332, 60.333, and 60.334(Subpart GG).
- E. When operating in Scenario 3, the turbine with duct burner (Units 1,7: Stack 1B) shall comply with the emissions standards required by 40 CFR 60 Subpart Da Sections 60.42a Standard for particulate matter, 60.43a Standard for sulfur dioxide and 60.44a Standard for nitrogen oxides.
- F. The Dew point Heater (Unit 4) shall not exceed the emission rates as specified by Table 106.F. The Dew Point Heater emissions have been incorporated into the tons per year emission rates for each scenario shown in Table 102.A.

Table 106.F: Dew Point Heater Emissions

Unit No.	NO ₂ ¹ (pph / tpy)		CO (pph / tpy)		VOC (pph / tpy)		SO _x (pph / tpy)		TSP (pph / tpy)		PM ₁₀ (pph / tpy)	
	<	1.1	<	1.0	<	<	<	<	<	<	<	<
4	<	1.1	<	1.0	<	<	<	<	<	<	<	<

¹ Nitrogen dioxide emissions include all oxides of nitrogen expressed as NO₂.

² The “<” symbol indicates a value that is less than 1.0 lb/hr or less than 1.0 tpy.

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

- A. The maximum allowable SSM emission limits for this facility are listed in Table 107.A and were relied upon by the Department to determine compliance with applicable regulations.

Table 107.A: Allowable and Enforceable Emissions from Routine and Predictable Startup, Shutdown, and Maintenance^{1, 2}

Scenario	NO _x ³	CO
	pph	pph
1 (Simple Cycle, Units 1, 4: Stack 1A)	105.3	644.0
2 (Combined Cycle, Units 1, 3, 4: Stack 1B)	94.0	644.0
3 (Combined Cycle, Units 1, 3, 4, 7: Stack 1B)	94.3	644.0

¹ The SSM emissions shall be monitored using CEMS during the entire startup or shutdown event. Emission limits are total emissions collected by CEMS during the SSM event, not emissions in excess of steady-state.

² SSM emissions shall be counted toward annual plant-wide emissions for compliance with tpy emission limits.

³ Nitrogen dioxide emissions include all oxides of nitrogen expressed as NO₂.

- B. Compliance with the SSM limits in Table 107.A, for each SSM event, shall be based on the emission rate as monitored by the CEMS and averaged over the duration of the SSM event. The start and end times of startup and shutdown events will be determined by:

Scenario	Startup		Shutdown	
	Start	End	Start	End
1 (Simple Cycle, Units 1, 4: Stack 1A)	Turbine Ignition	Turbine Reaches Mode 6	Instruction to shutdown given	Fuel flow to turbine stops
2 (Combined Cycle, Units 1, 3, 4: Stack 1B)	Turbine Ignition	Turbine/HRSG/Steam Turbine Reaches Mode 6	Instruction to shutdown given	Fuel flow to turbine stops
3 (Combined Cycle, Units 1, 3, 4, 7: Stack 1B)	Turbine Ignition	Turbine/HRSG/Steam Turbine Reaches Mode 6	Instruction to shutdown given	Fuel flow to turbine stops

SSM emissions shall be counted toward annual plant-wide emissions for compliance with tpy emission limits.

- C. The authorization of emission limits for startup, shutdown, maintenance, and malfunction does not supersede the requirements to minimize emissions according to Conditions B101.C and B107.A.

D. SSM Emissions (Unit 1)

Requirement: Compliance with the allowable emission limits in Table 107.A shall be demonstrated by the using the CEMS-generated NO_x and CO emissions for each event. (NSR PSD2466-M4 Condition A107.C)

Monitoring: (1) The permittee shall monitor and record the date, time, duration, Scenario, and CEMS-generated NO_x and CO emissions for each SSM event. The record shall include the calculated hourly NO_x and CO emissions rates in lb/hr.

(2) Each 24-hour period from midnight to midnight shall represent one calendar day.

Recordkeeping: The following records shall be maintained:

(1) Date, time, duration, Scenario, and CEM – generated NO_x and CO emissions data for each SSM event.

(2) Each day, the permittee shall calculate and record the daily 24-hour emission rates according to Table 106.A, Footnote 13, and shall exclude SSM emissions. Calculated hourly NO_x and CO emissions rate in lb/hr averaged over the duration of the SSM event.

(3) Daily 24-hour emission rates in accordance with Table 106.A, Footnote 13 (excluding SSM emissions).

(4) Each day, the permittee shall calculate and record the 365-day rolling total annual emission rates based on total emissions per 24-hour calendar day. Total daily emissions shall include both steady-state and SSM emissions, and shall comply with the annual permitted emission limits in

Table 106.A. See also Footnote 2, Table 107.A.

(5) Unit 1 and 3, Maintenance of SSM Records: In accordance with 40 CFR Part 60, Subpart A, Section 60.7 the permittee shall maintain records (electronic recordkeeping is acceptable) of startups, shutdowns, and malfunctions of the Combustion Turbine and/or the SCR control device; and periods that the CEMS system is inoperative.

Reporting: In accordance with Section B110, the permittee shall keep reports of items 1-5 in the recordkeeping section.

A108 Facility: Allowable Operations

A. Hours of Operation

Requirement: The facility is authorized to operate on a continuous basis in Scenario 1 or Scenario 2, but not more than 1920 hours per year in Scenario 3, and not more than 200 hours per year in Scenario 4. Compliance shall be determined using a twelve-month rolling total. Scenarios 1-4 are defined in Condition A112. (NSR PSD2466-M4 Condition A108.A)

Monitoring: The permittee shall record the total annual hours for each Combustion Turbine operation Scenario (fuel oil operation, simple cycle operation and hours of combined cycle operation (including duct burner) on a monthly basis. Annual total hours of operation shall be calculated from these monthly values on a rolling twelve-month basis. The permittee shall record the total turbine hours the facility operates and the total turbine hours operated using fuel oil.

Recordkeeping: In accordance with Section B109, the following records shall be maintained:

- (1) Total annual hours for each Combustion Turbine operating scenario on a monthly basis.
- (2) Annual total hours of operation on a rolling twelve-month basis.
- (3) Total hours of operation using fuel oil.

Reporting: In accordance with Section B110, the permittee shall keep reports of items 1-3 in the recordkeeping section.

A109 Facility: Reporting Schedules (20.2.70.302.E NMAC)

- A. 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. 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. Turbine overhauls or exchanges are allowed provided the overhaul or exchange does not cause a change in the turbine's make or model number, the firing rate, and the potential emission rate of any regulated air pollutant. Before any overhaul or exchange, the Permittee

shall report any proposed overhaul or replacement of the turbine (Unit 1) no later than thirty (30) days prior to the proposed overhaul or replacement and within fifteen (15) days after completion, and SCR (Unit 3) catalyst repair or replacement within fifteen (15) days after such repair or replacement. (NSR PSD2466-M4 Condition A109.A)

A110 Facility: Fuel and Fuel Sulfur Requirements

A. Fuel and Fuel Sulfur Requirements (Units 1, 4, and 7)

Requirement: (1) Units 1, 4, and 7 shall only combust natural gas containing no more than 0.6 grains of total sulfur per 100 dry standard cubic foot when operating in Scenarios 1, 2, or 3.

(2) Unit 1 shall use fuel oil containing no more than 0.05% by weight total sulfur when operating in Scenario 4. (NSR PSD2466-M4 Condition A110.A, revised)

Monitoring: None.

Recordkeeping: Records of all fuel sulfur content analyses collected in accordance with 40 CFR 60, Subpart GG shall be maintained for at least five years from the date of the analyses. In lieu of analyses, the permittee can elect to demonstrate compliance with the natural gas or fuel oil limit on total sulfur content by maintaining records of a current, valid purchase contract, tariff sheet or transportation contract for the gaseous or liquid fuel, specifying the maximum total sulfur content of the fuel is 0.6 grains of total sulfur per 100 standard cubic feet or less.

Reporting: In accordance with Section B110 of this permit.

A111 Facility: 20.2.61 NMAC Opacity

A. 20.2.61 NMAC Opacity Limit (Units 1, 4, and 7)

Requirement: Visible emissions from all stationary combustion emission stacks shall not equal or exceed an opacity of 20 percent.

Monitoring: Use of natural gas fuel or natural gas liquids constitutes compliance with 20.2.61 NMAC unless opacity equals or exceeds 20% averaged over a 10-minute period. At such time as fuel other than natural gas or natural gas liquids is used, or when any visible emissions are observed during steady state operation, opacity shall be measured over a 10-minute period in accordance with the procedures at 40 CFR 60, Appendix A, Method 9 as required by 20.2.61.114 NMAC. Opacity measurements shall continue on a quarterly basis per calendar year for each affected unit until such time as natural gas or natural gas liquids are used.

Recordkeeping: The permittee shall record dates and duration of use of any fuels other than natural gas or natural gas liquids and the corresponding opacity readings. The opacity measures and readings shall be recorded in accordance with Method 9 in 40 CFR 60, Appendix A.

Reporting: The permittee shall report in accordance with Section B110.

B. 20.2.61 NMAC Opacity Limit (Unit 8)

Requirement: Visible emissions from all stationary combustion emission stacks shall not equal or exceed an opacity of 20 percent.
Monitoring for Standby Generators: Opacity measurement shall be performed at least once every five years on Unit 8 for a minimum of 10 minutes in accordance with the procedures of 40 CFR 60, Appendix A, Method 9 as required by 20.2.61.114 NMAC.
Recordkeeping: The permittee shall record the opacity measures with the corresponding opacity readings on the form referenced in EPA Method 9, Sections 2.2 and 2.4.
Reporting: The permittee shall report in accordance with Section B110.

A112 Alternative Operating Scenario

- A. The permittee shall operate this facility in such manner that all applicable requirements and the requirements of 20.2.70 NMAC are met regardless of what scenario the facility is operating under. (20.2.70.302.A.3 NMAC)
- B. The facility shall operate using a simple cycle scenario with natural gas fuel (Scenario 1, 152 MW nominal), combined cycle non duct burner scenario (Scenario 2, 220 MW nominal), or combined cycle duct burner scenario (Scenario 3, 280 MW nominal). The facility may use fuel oil during emergency situations and for testing purposes, and during simple cycle scenario only (Scenario 4). (NSR PSD2466-M4 Condition A112.B)
- C. During all combined cycle operations (Scenarios 2, 3), emissions from the turbine (Unit 1: Scenario 2) and from the turbine with duct burner (Units 1, 7: Scenario 3) shall be routed to a Selective Catalytic Reduction (SCR) system. The SCR system shall employ ammonia injection to reduce NOx emissions only, and is regarded by the Department as BACT for the Facility when operating in Scenarios 2 and 3. (NSR PSD2466-M4 Condition A112.C)

EQUIPMENT SPECIFIC REQUIREMENTS

POWER GENERATION INDUSTRY

A600 Power Generation Industry

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

A601 Turbines

A. Unit 1 and 7, 40 CFR 60, Subparts A, Da, GG and 40 CFR 75

Requirement:

(1) The General Electric 7FA natural gas fired turbine (Unit 1) is subject to federal NSPS found in 40 CFR 60, Subpart A - General Provisions, and Subpart GG Standards of Performance for Stationary Gas Turbines and shall comply with both the notification requirements in Subpart A and with the specific requirements of Subpart GG.

(2) The 505 MMBtu/hr duct burner (Unit 7) is subject to 40 CFR 60, Subpart A - General Provisions, and Subpart Da Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced after 9/18/78 and shall comply with both the notification requirements in Subpart A and with the specific requirements of Subpart Da.

(3) The turbine (Unit 1) shall comply with the standard for nitrogen oxide and sulfur dioxide required by 40 CFR 60.332, 60.333, and 60.334 (Subpart GG).

(4) When operating in Scenario 3, the turbine with duct burner (Units 1,7: Stack 1B) shall comply with the emissions standards required by 40 CFR 60 Subpart Da Sections 60.42a Standard for particulate matter, 60.43a Standard for sulfur dioxide and 60.44a Standard for nitrogen oxides.

(NSR PSD2466-M4 Condition A401.A)

Monitoring:

(1) The permittee shall meet the applicable testing and monitoring requirements of 40 CFR 60, Subpart A and GG.

(2) The permittee shall meet the applicable testing requirements of 40 CFR 60, Subpart A and Da.

Recordkeeping: The permittee shall comply with the applicable record keeping requirements of 40 CFR 60 Subparts A, Da, and GG.

Reporting: The permittee shall comply with the applicable reporting requirements of 40 CFR 60 Subparts A, Da, GG and 40 CFR 75.

B. Unit 1, CEMS**Requirement:**

(1) The NO_x and O₂ or CO₂ CEMS shall be designed, installed and certified in accordance with 40 CFR 75.

(2) A continuous emissions monitoring system (CEMS) meeting the requirements of 40 CFR 75 and 40 CFR 60.13, Monitoring Requirements shall be operated to periodically measure the oxides of nitrogen (NO_x) and oxygen (O₂) concentrations (ppmv) in the exhaust gas of the turbine, Unit 1. The CEMS shall be located downstream of the turbine when operated in simple cycle mode and downstream of the SCR catalyst when operating in a combined cycle mode. A CEMS meeting the requirements of 40 CFR 75 will be presumed to meet the requirements of 40 CFR 60. In addition, the CEMS shall measure CO concentrations (ppmv) and temperature in the exhaust gas of the turbine downstream of the turbine or SCR catalyst.

(NSR PSD2466-M4 Condition A401.B)

Monitoring:

(1) The CEMS shall obtain a reading of the NO_x, CO, and O₂ concentrations at least once every fifteen (15) minutes from the combustion turbine exhaust. For time periods outside of compliance testing, EPA Method 19 shall be used to determine exhaust flow. During compliance testing, a flow measurement device shall be in the turbine duct downstream of the turbine or SCR catalyst to accurately measure the exhaust flow at various load rates. This shall be achieved by: a pitot tube, or multiple pitot tubes as necessary, or an equivalent flow measurement device.

(2) The output of the CEMS shall be (1) in ppmv of NO_x (dry standard conditions), CO (dry standard conditions), and O₂ or CO₂ at actual stack conditions, (2) in ppmv of NO_x and CO corrected to 15% oxygen on a dry basis, and (3) in pph of NO_x and CO.

(3) The permittee shall recalibrate any CEMS after any maintenance activity that could affect the system calibration and shall re-certify as required by and within the time periods specified by 40 CFR 75.20(b) whenever the permittee makes a replacement, modification, or change that may significantly affect the ability of the system to accurately measure or record emissions.

(4) Per 40 CFR 60.47a(c)(2), the certification of the NO_x, and O₂ monitors shall be carried out in accordance with 40 CFR 75, Appendix A. The CO monitor in accordance with 40 CFR 60, Appendix B, Spec 4. The QA/QC plan, shall include a data substitution procedure for the CO CEMS that is consistent with requirements of 40 CFR 75's missing data procedure for SO₂ data. Any changes to the QA/QC plan as a result of CEMS re-certification shall be submitted to the Enforcement Section Department.

Recordkeeping: The permittee shall maintain records in accordance with 40 CFR 75 and 40 CFR 60.

Reporting: The permittee shall comply with the reporting requirements of 40 CFR 60.7.

(1) All CEMS shall be subject to 40 CFR 60.7, notification and record keeping.

(2) The daily average NO_x (as NO₂) and CO readings from the CEMS identified in parts per million by volume (on a dry basis corrected to 15% O₂) and pounds per hour; and the rolling 365 day total for NO_x and CO emissions from the turbine (Unit 1) (in tons per year).

C. Unit 1, 3, and 7, CEMS Data Capture

Requirement:

(1) The turbine (Unit 1), duct burner (Unit 7), and the SCR system used in conjunction with Unit 3 shall be equipped with a NO_x, CO, and O₂ or CO₂ CEMS. The CEMS shall be installed and maintained according to manufacturer's requirements.

(2) The CO CEMS(s) shall be designed, installed and certified in accordance with the provisions of 40 CFR 60, Appendix B, Performance Specification 4A – Specification and Test Procedure for Carbon Monoxide Continuous Emissions Monitoring Systems in Stationary Sources. Following certification testing, the CO CEMS shall be operated in accordance with the provisions of 40 CFR 60, Subpart A, Section 60.13 and the provisions of 40 CFR 60, Appendix F – Quality Assurance Requirements for Continuous Emissions Monitoring Systems.

(NSR PSD2466-M4 Condition A401.C)

Monitoring: All required continuous emissions monitoring equipment shall have a minimum data capture rate of ninety percent (90%) per calendar month. The data capture rate is defined as the amount of time the equipment generates the required data divided by the time the unit is in operation. The 10% non-capture residual is intended for periods of malfunction, calibration, or adjustment.

Recordkeeping: In accordance with Section B109 of this permit. The permittee shall also maintain records of CEMS and performance test measurements, all CEMS performance evaluations, all CEMS calibration checks, and all adjustment and maintenance of the CEMS.

Reporting: In accordance with Section B110 the permittee shall keep summaries of any certifications, malfunctions, calibrations, and data capture records. Also include a summary table of the data capture rate of all required continuous monitoring equipment on each Combustion Turbine for each calendar month during the reporting period. If the data capture rate for the month is below the minimum level of 90%, the permittee shall identify in the summary table whether the data capture rate was influenced by low operating time and show that operating time.

D. Unit 1, Fuel Consumption

Requirement: A natural gas fuel flow monitor or equivalent measuring device, shall be installed on the turbine (Unit 1) and meet the initial certification requirements of 40 CFR 75 Appendix D 2.1.5, and the quality assurance requirements of 40 CFR 75 Appendix D 2.1.6.

(NSR PSD2466-M4 Condition A401.D)

Monitoring: A fuel flow monitor shall be installed to monitor and record the fuel consumption of the turbine, Unit 1. The fuel flow monitor shall be certified as required by 40 CFR 75.

Recordkeeping: In accordance with Section B109, the permittee shall maintain records of the total volumetric flow of natural gas consumed by the turbine (Unit 1) on daily, monthly, and 12-month rolling total basis (calculated once per month).

Reporting: In accordance with Section B110, the permittee shall keep reports of the fuel flow meter certification, the total volumetric flow of natural gas consumed by the turbine (Unit 1).

E. Unit 1, 40 CFR 60, Subpart A, GG

Requirement: The Permittee shall comply with the applicable monitoring requirements in 40 CFR 60.334 for the turbine. In particular, the permittee shall either (1) on a daily basis, monitor the sulfur content of the fuel being burned by the turbine, (2) utilize the custom fuel monitoring schedule presented in Attachment 1 to this permit, or (3) maintain a current purchase record showing fuel sulfur content.

In accordance with EPA document EMTIG—GD-009 (March 12, 1990), no daily monitoring for fuel bound nitrogen is required for the turbine (Unit 1).

(NSR PSD2466-M4 Condition A401.E, revised)

Monitoring:

Recordkeeping: In accordance with Section B109. Records of all fuel sulfur content analyses collected in accordance with the 40 CFR Part 60, Subpart GG shall be maintained for at least three years from the date of the analyses. In lieu of analyses, the Permittee can elect to demonstrate compliance with the natural gas limit on total sulfur content by maintaining records of a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying the maximum total sulfur content of the fuel is 0.6 grains of total sulfur per 100 standard cubic feet (SCF) or less.

Reporting: In accordance with Section B110, the permittee shall keep reports of all fuel sulfur content testing performed in accordance with 40 CFR 60.334 or a purchase record showing fuel sulfur content as outlined above.

A602 Boilers – *Not Required*

A603 Engines

A. 40 CFR 63, Subpart ZZZZ (Unit 8)

Requirement: The unit is subject to 40 CFR 63, Subpart ZZZZ and the permittee shall comply with all applicable requirements of Subpart A and Subpart ZZZZ.

Monitoring: The permittee shall comply with all applicable monitoring requirements of 40 CFR 63, Subpart A and Subpart ZZZZ.

Recordkeeping: The permittee shall comply with all applicable recordkeeping requirements of 40 CFR 63, Subpart A and Subpart ZZZZ, including but not limited to 63.6655 and 63.10.

Reporting: The permittee shall comply with all applicable reporting requirements of 40 CFR 63, Subpart A and ZZZZ, including but not limited to 63.6640, 63.6650, 63.9, and 63.10.

A604 Heaters – Not Required

A605 Cooling Towers

A. Unit 2, TDS Concentration

Requirement: (1) The facility shall not use any cooling water additives containing heavy metals such as chromium in the cooling tower (Unit 2). The maximum total dissolved solids (TDS) for the circulating water used in the cooling tower shall not exceed a daily average of 4,500 mg/l. The daily average TDS content of the cooling water shall be determined through conductivity measurements as outlined below.

(2) The cooling towers shall be low drift design and equipped with drift eliminators.

(3) The cooling tower recirculating water system shall be equipped with a circulating water pump with a maximum capacity of 18,781 gallons per minute.

(4) The cooling tower recirculating water system shall be equipped with a conductivity meter, capable of directly measuring electrolytic conductivity (mhos/cm). The meter shall be a high quality, industrial grade instrument that meets standard industry requirements for accuracy.

(5) All equipment, including emission-monitoring equipment and the cooling towers, shall be installed, operated and maintained in a manner consistent with the manufacturer's intended purpose, specifications and recommended procedures.

(NSR PSD2466-M4 Condition A405.A)

Monitoring:

(1) When operating in combined cycle mode, the permittee shall measure the TDS concentration (ppm) from the cooling towers basin on a weekly basis until an accurate correlation between conductivity and TDS content is established. Thereafter, the permittee shall measure the TDS concentration on an annual basis or establish a new correlation if the source of cooling tower water changes.

(2) When operating in combined cycle mode, the daily average TDS content of the cooling tower recirculating water shall be determined through continuous monitoring of the conductivity using the in-line meter and the derived TDS/conductivity correlation.

Recordkeeping: The permittee shall maintain the following records in accordance with Section B109.

(1) Records of the cooling tower recirculating water daily average conductivity and correlated TDS.

(2) Manufacturer's specifications for the cooling tower recirculating water pump. Manufacturer's specifications for the cooling tower recirculating water conductivity meter to

include any periodic calibration or other testing requirements. The record shall include a specification for meter accuracy.

(3) Create and maintain a correlation diagram that relates electrolytic conductivity to TDS in the cooling water. This correlation shall contain a minimum of ten (10) conductivity readings within the TDS range of 2000-5000 mg/l. If the source of the cooling tower recirculating water changes, the permittee shall create a new correlation diagram to be used for future TDS determinations.

Reporting: In accordance with Section B110, the permittee shall keep reports of the daily average conductivity of the cooling tower re-circulating water and the correlated TDS when the unit is operating in the combined cycle mode.

A606 Haul Roads/Storage piles (Coal-Fired Plants) – Not Required

A607 Baghouses – Not Required

A608 Tanks

A. Tank 2, Sulfuric Acid Storage

Requirement: The sulfuric acid concentrate used at the facility shall not exceed 93% H₂SO₄ to demonstrate compliance with emissions calculations. (NSR PSD2466-M4 Condition A408.A)

Monitoring: Purchasing and delivery records of sulfuric acid ordered and delivered shall be obtained and maintained to show that the sulfuric acid concentrate did not exceed 93% H₂SO₄.

Recordkeeping: In accordance with Section B109, the permittee shall maintain purchase and delivery records of sulfuric acid.

Reporting: In accordance with Section B110, the permittee shall keep reports of the concentration of Sulfuric acid used at the facility.

A609 Selective Catalytic Reduction (SCR) System

A. Unit 3, SCR Operation

Requirement: The permittee shall demonstrate the proper operation of the SCR's ammonia injection system. (NSR PSD2466-M4 Condition A409.A)

Monitoring: (1) The permittee shall monitor the total ammonia consumed by the SCR system on a weekly basis.

(2) The ammonia injection systems, when the SCR is operating, shall be inspected on a daily basis to insure proper operation. When Unit 1 is running in the simple cycle mode, the SCR is not being used and hence neither is ammonia being consumed.

Recordkeeping: In accordance with Section B109, record any abnormalities of the ammonia injection System found during the daily inspections and record actions taken to correct bring the system into normal operating conditions, and maintenance activities. Maintain a record of the

total ammonia consumed on a weekly basis.

Reporting: In accordance with Section B110, the permittee shall keep reports of any abnormalities of the ammonia injection system found during the daily inspections and shall contain the total ammonia consumed for the six-month period.

MISCELLANEOUS DOCUMENTS

A800 40 CFR 72 Acid Rain Program Permit P008AR3 (Attached)

PART B GENERAL CONDITIONS (Attached)

PART C MISCELLANEOUS: Supporting On-Line Documents; Definitions; Acronyms (Attached)