



20.11.42 NMAC
TITLE V OPERATING
PERMIT RENEWAL APPLICATION
For
PUBLIC SERVICE COMPANY
OF
NEW MEXICO
RIO BRAVO GENERATING STATION
Albuquerque, NM
Presently Operating Under
Operating Permit #2093-RV1

PREPARED BY
CLASS ONE TECHNICAL SERVICES
ALBUQUERQUE, NM
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I. Executive Summary

I. Executive Summary

Public Service Company of New Mexico (PNM) operates the Rio Bravo Generating Station (“RBGS” or “facility”) located at 725 Electric Avenue, Albuquerque, New Mexico. The facility generates electricity with a nominal 150 MW, GE7FA simple-cycle combustion turbine powered primarily with pipeline quality natural gas and with low-sulfur #2 fuel oil as the secondary fuel. Emissions controls on the turbine include dry low-NO_x (“DLN”) burners for natural gas and water injection for #2 fuel oil combustion. Annual hours of operation limit on each fuel type are 7,320 hours per year for natural gas and 1,440 hours per year for #2 fuel oil.

This Title V Operating Permit Renewal Application is a requirement per 20.11.42.B(1)(a) NMAC. The existing Title V Operating Permit #2093-RV1 will expire June 22, 2016. The Title V Operating Permit Renewal Application shall be submitted twelve (12) months prior to the date of expiration per 20.11.42.12.(2)(a)(ii) NMAC.

Over the Title V Operating Permit period since the original Title V Operation Permit was issued, several Authority to Construct (ATC) and Title V Operating Permit modifications have been submitted. The following list summarizes the requested changes in these modification applications.

1. June 17, 2013 ATC Permit #0694-M1-RV1 Modification Application
 - a. Based on stack test data for similar GE 7FA gas turbine, requested upward revision of PM emission limits to reflect PM₁₀ and PM_{2.5} emission rates for fuel-oil combustion.
 - b. Re-establish the original application PM₁₀ emission limit for combustion of natural gas.
 - c. Requests removal of PM testing requirement with an alternative compliance approach.
2. October 21, 2013 ATC Permit #0694-M1-RV1 Modification Application Supplemental
 - a. Reaffirms the original BACT determination for TSP/PM₁₀ remains BACT for TSP/PM₁₀/PM_{2.5}.
 - b. Correction of incorrect emissions factors based on a Siemens Westinghouse 501F turbine with the correct emission factors for a GE7FA turbine for NO_x, CO, SO₂, and VOC.
 - c. Removal of SO₂ CEMS requirement for compliance monitoring to fuel flow measurement and sulfur content data monitoring.
 - d. Incorporates PSD/BACT determination language into the Statement of Basis.
 - e. Remove incorrect reference to Permit 752-M2-RV3
3. November 26, 2013 Title V Operating Permit Modification Application
 - a. Requests removal of PM testing requirement with an alternative compliance approach.

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- b. Correction of incorrect emissions factors based on a Siemens Westinghouse 501F turbine with the correct emission factors for a GE7FA turbine for NO_x, CO, SO₂, and VOC.
 - c. Removal of SO₂ CEMS requirement for compliance monitoring to fuel flow measurement and sulfur content data monitoring.
 - d. Incorporates PSD/BACT determination language into the Statement of Basis.
 - e. Remove incorrect reference to Permit 752-M2-RV3
 - f. Requests consolidation of a number of conditions; Conditions 3.1.3 and 3.2.1.2, 3.1.5 and 3.2.1.3, 3.1.6 and 3.2.1.4, 3.1.7 and 3.2.1.4, and 3.1.2 and 3.2.1.1.
 - g. Requests correction of citation in Condition 3.4.1.6 from 20.11.76.20(A) NMAC to 20.11.67.19 NMAC.
 - h. Requests correction of citation in Condition 4.1.1 for 40 CFR Appendix F to 40 CFR Part 75 Appendix F.
4. October 10, 2014 ATC Permit #0694-M1-RV1 Modification Application Supplemental
 - a. Requests removal of PM testing requirement with an alternative compliance approach using work practices, monitoring and associated permit conditions.
 - b. Supports the conclusion that this permit revision does not trigger PSD review.
 - c. PNM supports retaining the VOC emission limits submitted in the October 21, 2013 ATC Permit #0694-M1-RV1 Modification Application Supplemental.
 - d. Update ownership information to reflect PNM's ownership.
 - e. Include a discussion on the RICE Fire Pump Emergency Engine's applicability with 40 CFR Part 60 Subpart ZZZZ. Attached the ATC application submitted for the Fire Pump Emergency Engine.
 5. May 18, 2015 ATC Draft ATC Permit #0692-M2 comments (partial list)
 - a. Clarification of time period for rolling averages
 - b. Inclusion of Subpart GG emission limits for Unit 1 into permit.
 - c. Include opacity testing requirements into permit conditions following EPA Method 9 testing.
 - d. Revision of emission rates calculations for Fire Pump Emergency Engine into ATC permit application.
 - e. Include 40 CFR Part 60 Subpart ZZZZ requirements for the Fire Pump Emergency Engine.

The changes requested in this renewal application include all permit modifications requested by PNM for RBGS to be incorporated into the revised ATC Permit #0694-M2. Detailed information on several of the major changes is discussed below:

- Remove the requirement for initial performance test for total particulate matter found in Condition 3.4.1.4. PNM will show compliance with particulate matter emission limits using a PM compliance demonstration calculation methodology, work practices, opacity testing when combusting #2 fuel oil (when conditions met the sun angle requirements

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found in EPA's Method 9), and operational monitoring parameters. These calculation methodologies and conditions are discussed in Section V under "*Particulate Matter (TSP/PM₁₀) Compliance Demonstration Method*" and Attachment D.

- Remove the requirement for SO₂ CEMS found in Conditions 3.4.1.6 and 3.4.1.7. Compliance with SO₂ emission limits will be demonstrated using fuel flow meters and fuel sulfur content data.
- Incorporate into the permit 40 CFR 60 Subpart GG NO_x emission limits for emission unit 1. Include averaging period for NO_x ppm limit compliance with Subpart GG.
- Include permit language that defines the averaging period for showing compliance with NO_x pound per hour emission limits as calculated from the NO_x CEMs data.
- Including emission calculations to verify applicability determination for insignificant activities found in Section XVI.
- Include language developed for modification of ATC Permit #0694-M1-RV2.
- Review potential new requirements for GHG regulations specific to RBGS. The GHG rule for New Mexico will limit the carbon intensity of the state's electrical grid as a whole. The proposed statewide rate-based goal for New Mexico is 1,107 lb/MWh for the interim period of 2020-2029, and the final goal is 1,048 lb/MWh in 2030. The alternative statewide mass-based goal equivalent is 10,977 thousand metric tons (interim) and 10,391 thousand metric tons (final), but states are allowed to convert the rate-based goal differently, so the mass-based numbers may be different. At this time, no limits or requirements have been applied to RBGS. When these limits or requirements become effective, RBGS will comply.
- PNM requests a change in the six month and annual reporting schedules in Conditions 5.2 and 6.1 to within 45 days of June 30th and December 31 (six month reports) and to no later than 30 days after the end of the reporting period of June 30th of every year (annual reports). This aligns the reporting periods to coincide with Reeves Generation Station.

II. Applicable Regulations and Requirements Review

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COMPLIANCE STATUS WITH APPLICABLE REQUIREMENTS

Based on information and belief formed after reasonable inquiry, Public Service Company of New Mexico (PNM) certifies that, as provided in this report, Rio Bravo Generating Station (RBGS) is in compliance with each applicable requirement. Previous permit deviations reported have been addressed by facility work practices or requested permit modifications. A signed certification in accordance with 20 NMAC 11.42.12.A.(5), is provided at the end of Section IV of this Title V renewal application package.

20.11.2 NMAC - Permit Fees

PNM pays all filing and permit fees as required.

20.11.5 NMAC- Visible Air Contaminants

PNM's Rio Bravo Generating Station is in compliance with this regulation by performing visual observations based on Method 9 of 40 CFR 60, Appendix A when operating on fuel oil and when able to meet the Method 9 sun angle position criteria requested in the most recent ATC Permit #0694-M1-RV2.

20.11.6 NMAC - Emergency Action Plan

PNM's Rio Bravo Generating Station will comply with the provisions of this part as necessary.

20.11.7 NMAC - Variance Procedure

PNM will comply with the provisions of this part if they need to obtain a variance from requirements prescribed by the Board.

20.11.8 NMAC - Ambient Air Quality Standards

PNM's Rio Bravo Generating Station is in compliance with National Ambient Air Quality Standards (NAAQS) and the State Ambient Air Quality Standards (NMAAQS) based on the results of air quality dispersion modeling submitted in the original Operating Permit Application package and revised dispersion modeling conducted in support of revision to ATC Permit #0694-M1-RV1.

20.11.20 NMAC - Fugitive Dust Control

The active areas of the property are either paved or have a gravel surface. PNM's Rio Bravo Generating Station takes adequate steps to ensure that all persons conducting active operations that result in disturbed surface areas use reasonably available control measures or other effective measure on an ongoing basis to prevent or abate injury to human health and animal and plant life

II. Applicable Regulations and Requirements Review

and to prevent or abate unreasonable interference with public welfare, visibility and the reasonable use of property. PNM's Rio Bravo Generating Station is in compliance with this regulation.

20.11.40 NMAC - Source Registration

PNM's Rio Bravo Generating Station has received ATC and Title V permits from the City of Albuquerque/Bernalillo County Air Quality Program (ABCAQP) that includes sources that need to be registered/permited.

20.11.41 NMAC - Authority-to-Construct Permits

PNM's Rio Bravo Generating Station has received a construction permit from ABCAQP that includes sources that need to be registered/permited. A significant revision to ATC Permit #0694-M1-RV1 and #0694-M1-RV2 was submitted to the ABCAQP on June 17, 2013, amended on October 21, 2013, and supplemented on October 10, 2014. When issued, PNM's Rio Bravo Generating Station will comply with all terms and conditions of ATC Permit #0694-M2.

20.11.42 NMAC - Operating Permits

PNM's Rio Bravo Generating Station received Operating Permit #2093-RV1 on September 19, 2014 from ABCAQP that includes all sources regulated by this regulation.

20.11.43 NMAC - Stack Height Requirements

As part of permits pursuant to 20.11.41, 60, or 61 NMAC, sources shall demonstrate compliance with good engineering practice.

20.11.60 NMAC - Permitting Nonattainment Areas

PNM's Rio Bravo Generating Station is not currently located in a non-attainment area for any criteria pollutant, so this part is currently not applicable.

20.11.61 NMAC - Prevention of Significant Deterioration

PNM's Rio Bravo Generating Station currently operating under PSD Permit #0694-M1-RV2 and will comply with the provisions of this part if new construction or modification of existing equipment triggers any additional requirements. A significant revision to ATC Permit #0694-M1-RV1 and #0694-M1-RV2 was submitted to the ABCAQP on June 17, 2013, amended on October 21, 2013, and amended on October 10, 2014. When issued, PNM's Rio Bravo Generating Station will comply with all terms and conditions of ATC Permit #0694-M2.

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20.11.62 NMAC - Acid Rain Program Permits

PNM's Rio Bravo Generating Station is an applicable source affected by the Federal Acid Rain Program. PNM's Rio Bravo Generating Station operates under Acid Rain Permit #AR2093-RV1 issued April 24, 2015.

20.11.63 NMAC - New Source Performance Standards

PNM's Rio Bravo Generating Station is applicable to requirements under 40 CRF Part 60.

20.11.65 NMAC - Volatile Organic Compounds

PNM's Rio Bravo Generating Station takes the appropriate steps to minimize VOC emissions from stationary sources. PNM's Rio Bravo Generating Station is in compliance with this regulation.

20.11.67 NMAC – Equipment, Emissions, Limitations

PNM's Rio Bravo Generating Station will comply with the applicable requirements of 20.11.67.17, 18, 19, and 20 NMAC under normal operating conditions.

20.11.90 NMAC - Administration, Enforcement, Inspection

PNM's Rio Bravo Generating Station complies with the provisions of this regulation when operating equipment under abnormal conditions.

20.11.100, 101, and 102 NMAC - Motor Vehicle Inspection and Oxygenated Fuels

As part of its vehicle maintenance program, PNM's Rio Bravo Generating Station ensures that emissions control devices exist on all motor vehicles, and that they are not disabled. PNM's Rio Bravo Generating Station ensures oxygenated fuels are used in their vehicles as appropriate.

40 CFR 50 - National Primary and Secondary Ambient Air Quality Standards (NAAQS)

PNM's Rio Bravo Generating Station is in compliance with NAAQS based on the results of air quality dispersion modeling submitted in the original Operating Permit Application package and revised dispersion modeling conducted in support of revision to ATC Permit #0694-M1-RV1.

40 CFR 60 Subpart A – General Provisions

PNM's Rio Bravo Generating Station complies with this regulation. This regulation applies because 40 CFR 60 Subpart GG applies to Rio Bravo Generating Station.

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40 CFR 60 Subparts K through Kb - New Source Performance Standards for Petroleum Liquid Storage Vessels

PNM's Rio Bravo Generating Station currently has a fuel storage tank that meets the volumes subject to the requirements of Subparts A and Kb. However, the tank stores only #2 fuel oil which has a vapor pressure less than 3.5 kPA, which exempts PNM's Rio Bravo Generating Station from the General Provision (Part 60, Subpart A) and from the provisions of Subpart Kb.

40 CFR 60 Subparts GG - New Source Performance Standards for Stationary Gas Turbines

PNM's Rio Bravo Generating Station is applicable to this regulation for stationary gas turbines with a heat input at peak load greater than or equal to 10.7 gigajoules/hr constructed, modified, or reconstructed after October 3, 1977. Ongoing compliance is demonstrated by the continuous emissions monitoring system (CEMS) installed on the turbine for NO_x emissions and fuel sulfur contents for compliance with SO₂ emissions. Relative accuracy test audits (RATA) are conducted to ensure the validity of the CEMS data as required by 40 CFR Part 75. Fuel invoices or supplier's specification sheets are maintained to show compliance with fuel sulfur content limits.

40 CFR 61 Subpart M - Asbestos NESHAP

PNM's Rio Bravo Generating Station will notify the appropriate regulators of demolition activities that trigger the provisions of this regulation. PNM's Rio Bravo Generating Station is in compliance with this regulation.

40 CFR 63 Subpart A – General Provisions

PNM's Rio Bravo Generating Station complies with this regulation. This regulation applies because 40 CFR 63 Subpart ZZZZ applies to Rio Bravo Generating Station's fire pump.

40 CFR 63 Subpart ZZZZ – National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

PNM's Rio Bravo Generating Station complies with this regulation. Maintenance and recordkeeping requirements are conducted as specified by the regulation for the Rio Bravo Generating Station's fire pump.

40 CFR 64 – Compliance Assurance Monitoring

PNM's Rio Bravo Generating Station controls NO_x emission rates with water injection for combustion of #2 fuel oil and low NO_x burners for combustion of natural gas. Monitoring of NO_x emission limits is determined per the requirements in 40 CFR Part 75. This regulation is not applicable to Rio Bravo Generating Station.

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40 CFR 68 - Emergency Response

PNM's Rio Bravo Generating Station does not currently store propane, and therefore does not require preparation of a Risk Management Plan. PNM's Rio Bravo Generating Station will meet the compliance requirements of the General Duty Clause for this rule.

40 CFR 70 – State Operating Permit Programs

PNM's Rio Bravo Generating Station received Title V operating permit #2093-RV1, dated September 19, 2014, from ABCAQP that includes all regulated air emissions sources.

40 CFR 72 – Permits Regulation

PNM's Rio Bravo Generating Station is subject to Permits Regulation and is in compliance with applicable requirements.

40 CFR 73 – Sulfur Dioxide Allowances

PNM's Rio Bravo Generating Station is subject to this part and maintains sufficient SO₂ allowances in its compliance accounts. Facilities subject to 40 CFR 72 include: independent power producers; facilities who may apply to receive allowances under the Energy Conservation and Renewable Energy Reserve Program; small diesel refineries; and any other person who chooses to purchase, hold, or transfer allowances (authorization to emit up to one ton of sulfur dioxide).

40 CFR 75—Continuous Emission Monitoring

PNM's Rio Bravo Generating Station operates a continuous emission monitoring system (CEMS) and reports NO_x emissions data from the CEMS, and calculates SO₂ emissions based on fuel flow measurements, sulfur content, and heat content data, in compliance with this regulation.

II. Applicable Regulations and Requirements Review

Summary of All City of Albuquerque/Bernalillo County Potentially Applicable Requirements

Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.1 NMAC	General Provisions	All pollutants	Ambient Air Quality Standards for sources subject to another requirement under 20 NMAC 11.	Applicable
11.2 NMAC	Permit Fees	All pollutants	Sources subject to another requirement of 20 NMAC 11.	Applicable
11.3 NMAC	Transportation Conformity	Criteria pollutants in nonattainment or maintenance status	Federally funded transportation projects.	Not applicable
11.4 NMAC	General Conformity	Criteria pollutants in nonattainment or maintenance status	Federally funded transportation projects.	Not applicable
11.5 NMAC	Visible Air Contaminants	Visible air contaminants (PM, fumes, smoke, or aerosols)	Incinerator, PWDs, stationary spark ignition engines, diesel-powered engines.	Applicable
11.6 NMAC	Emergency Action Plan	All pollutants	All sources.	Applicable
11.7 NMAC	Variance Procedure	All pollutants	All sources.	Applicable
11.8 NMAC	Ambient Air Quality Standards	CO, NO ₂ , O ₃ , SO ₂ , PM _{2.5} , PM ₁₀ , Pb, H ₂ S, Total Reduced Sulfur, PM (TSP)	All sources.	Applicable
11.20 NMAC	Airborne Particulate Matter	Airborne PM	Industrial/commercial activities, unpaved roads and parking areas, surface disturbances, sandblasting and other surface preparation, demolition.	Applicable
11.21 NMAC	Open Burning	All pollutants	Open burning.	Not applicable

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Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.22 NMAC	Woodburning	CO, PM, visible emissions	Woodburning.	Not applicable
11.23 NMAC	Stratospheric Ozone Protection	ODCs	Equipment used to service motor vehicle AC system must meet SAE Standard J-1990, Repair and Disposal of Refrigeration Units.	Applicable
11.40 NMAC	Source Registration	All pollutants	By 1 January 1974, commercial/industrial sources emitting >2,000 lb/yr of any air contaminant or any amount of HAPs must obtain a Registration Certificate. Sources constructed after 1 September 1973 must obtain a Registration Certificate within 180 days after initial startup of source.	Applicable
11.41 NMAC	Authority-to-Construct	All pollutants	New construction or modification of sources with >10 lb/hr or >25 tpy (any regulated pollutant precontrolled) or >5 tpy precontrolled lead and sources that emit a significant amount of air contaminant listed in 40 CFR 61.01(b).	Applicable
11.42 NMAC (40 CFR 70)	Operating Permits	All pollutants	Major sources.	Applicable
11.43 NMAC (40 CFR Part 51 Section 51.100)	Stack Height Requirements	All pollutants	As part of permits pursuant to 20 NMAC 11.41, 60 and 61, sources shall demonstrate compliance with good engineering practice.	Applicable
11.46 NMAC	Sulfur Dioxide Emissions Inventory Requirements: Western Backstop Sulfur Dioxide Trading Program	SO ₂	Implement the western backstop (WEB) sulfur dioxide (SO ₂) trading program provisions required under the federal Regional Haze Rule, 40 CFR 51.309, and the concomitant Albuquerque/Bernalillo county element of the state of New Mexico's regional haze implementation plan.	Not Applicable

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Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.47 NMAC	Emission Inventory Requirements	Regulated Pollutants	Each person who owns or operates a source or who intends to construct or modify a source within Bernalillo county must submit certain relevant information to ensure that the regulations and standards under the Air Quality Control Act and the federal act will not be violated.	Applicable
11.49 NMAC	Excess Emissions	All pollutants	Implement requirements for the reporting of excess emissions and establish affirmative defense provisions for facility owners and operators for excess emissions.	Applicable
11.60 NMAC	Permitting in Nonattainment Areas	All pollutants	Major stationary source or major modification for any source with emissions >100 tpy wishing to locate in an area where federal AAQS are being exceeded.	Not applicable
11.61 NMAC	Prevention of Significant Deterioration	Criteria pollutants in attainment	Stationary sources in attainment areas listed with potential emissions ≥ 250 tpy or specifically listed sources with potential emissions ≥ 100 tpy of any regulated pollutant.	Applicable
11.62 NMAC (40 CFR 72)	Acid Rain Program Permits	Acid rain pollutants	Large power and cogeneration facilities.	Applicable
11.63 NMAC 40 CFR 60 Subpart A	NSPS – General Provisions	Pollutants applicable to 40 CFR 60	General provisions for any new or revised NSPS.	Applicable for each emission unit affected by a NSPS, as indicated in 40 CFR Part 60 (see below)
11.63 NMAC 40 CFR 60 Subpart B	NSPS – Adoption and Submittal of State Plans for Designated Facilities	Pollutants applicable to 40 CFR 60	Guidelines to control designated pollutants from affected facilities.	Applicable for each air pollutant that is subject to a NSPS that has not been issued air quality criteria
11.63 NMAC 40 CFR 60 Subpart C	NSPS – Emissions Guidelines and Compliance Times	PM, Cd, Pb, Hg, SO ₂ , HCl, dioxins/furans, NO _x , CO, fugitive ash, non-methane organic compounds, sulfuric acid mist	Municipal waste combustors, municipal solid waste landfills, sulfuric acid production units.	Applicability based on Subparts Cb, Cc, and Cd (see below)

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Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.63 NMAC 40 CFR 60 Subpart Ca	NSPS – Emissions Guidelines and Compliance Times	PM, Cd, Pb, Hg, SO ₂ , HCl, dioxins/furans, NO _x , CO, fugitive ash, non-methane organic compounds, sulfuric acid mist	Municipal waste combustors, municipal solid waste landfills, sulfuric acid production units.	Non-applicability based on Subparts Cb, Cc, and Cd (see below)
11.63 NMAC 40 CFR 60 Subpart Cb	NSPS – Emissions Guidelines and Compliance Schedules for Municipal Waste Combustors	PM, Cd, Pb, Hg, SO ₂ , HCl, dioxins/furans, NO _x , CO, fugitive ash, non-methane organic compounds, sulfuric acid mist	Municipal waste combustors with a plant capacity greater than 35 megagrams/day constructed on or before September 20, 1994.	Not applicable
11.63 40 CFR 60 Subpart Cc	NSPS – Emissions Guidelines and Compliance Times for Municipal Solid Waste Landfills	Non-methane organic compounds	Municipal solid waste landfills with a design capacity greater than or equal to 2.5 million cubic meters constructed, reconstructed, or modified before May 30, 1991.	Not applicable
11.63 NMAC 40 CFR 60 Subpart Cd	NSPS – Emissions Guidelines and Compliance Times for Sulfuric Acid Production Units	Sulfuric acid mist	Sulfuric acid production units.	Not applicable
11.63 NMAC 40 CFR 60 Subpart D	NSPS – Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971	PM, SO ₂ , NO _x	Fossil-fuel-fired steam generating units with a heat input rate greater than 250 million Btu/hr constructed or modified after August 17, 1971.	Not applicable

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Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.63 NMAC 40 CFR 60 Subpart Da	NSPS – Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978	PM, SO ₂ , NO _x	Electric utility steam generating units with a heat input rate greater than 250 million Btu/hr constructed or modified after September 18, 1978.	Not applicable
11.63 NMAC 40 CFR 60 Subpart Db	NSPS – Standards of Performance for Industrial-Commercial- Institutional Steam Generating Units	PM, SO ₂ , NO _x	Industrial, commercial-institutional steam generating units with a heat input rate greater than 100 million Btu/hr constructed, modified, or reconstructed after June 19, 1984.	Not applicable
11.63 40 CFR 60 Subpart Dc	NSPS – Standards of Performance for Small Industrial-Commercial- Institutional Steam Generating Units	PM, SO ₂	Small industrial-commercial-institutional steam generating units with a heat input rate greater than or equal to 10 million Btu/hr and less than or equal to 100 million Btu/hr constructed, modified, or reconstructed after June 9, 1989.	Not applicable
11.63 40 CFR 60 Subpart E	NSPS – Standards of Performance for Incinerators	PM	Incinerators with a charging rate greater than 50 tons/day constructed or modified after August 17, 1971.	Not applicable
11.63 NMAC 40 CFR 60 Subpart Ea	NSPS – Standards of Performance for Municipal Waste Combustors for Which Construction is Commenced After December 20, 1989 and On or Before September 20, 1994	PM, dioxins/furans, SO ₂ , HCl, NO _x , CO	Municipal waste combustors with a capacity greater than 250 tons/day constructed after December 20, 1989 and on or before September 20, 1994 or modified or reconstructed after December 20, 1989 and on or before June 19, 1996.	Not applicable

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Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.63 NMAC 40 CFR 60 Subpart Eb	NSPS – Standards of Performance for Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994	PM, Cd, Pb, Hg, SO ₂ , HCl, dioxins/furans, NO _x , CO, fugitive ash	Municipal waste combustors with a capacity greater than 35 megagrams/day constructed after September 20, 1994 or modified or reconstructed after June 19, 1996.	Not applicable
11.63 NMAC 40 CFR 60 Subpart F	NSPS – Standards of Performance for Portland Cement Plants	PM	Portland cement plants constructed or modified after August 17, 1971.	Not applicable
11.63 NMAC 40 CFR 60 Subpart G	NSPS – Standards of Performance for Nitric Acid Plants	NO _x	Nitric acid production units constructed or modified after August 17, 1971.	Not applicable
11.63 40 CFR 60 Subpart H	NSPS – Standards of Performance for Sulfuric Acid Plants	SO ₂ , Sulfuric acid mist	Sulfuric acid production units constructed or modified after August 17, 1971.	Not applicable
11.63 40 CFR 60 Subpart I	NSPS – Standards of Performance for Hot Mix Asphalt Facilities	PM	Hot mix asphalt facilities constructed or modified after June 11, 1973.	Not applicable
11.63 NMAC 40 CFR 60 Subpart J	NSPS – Standards of Performance for Petroleum Refineries	PM, CO, SO ₂	Petroleum refineries: fluid catalytic cracking unit catalyst regenerators or fuel gas combustion devices constructed or modified after June 11, 1973 or sulfur recovery plants constructed or modified after October 4, 1976.	Not applicable
11.63 40 CFR 60 Subpart K	NSPS – Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978	VOCs	Storage vessels for petroleum liquids with a storage capacity greater than 40,000 gallons, but not exceeding 65,000 gallons, constructed or modified after March 8, 1974 and prior to May 19, 1978 or with a storage capacity greater than 65,000 gallons constructed or modified after June 11, 1973 and prior to May 19, 1978.	Not applicable

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Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.63 NMAC 40 CFR 60 Subpart Ka	NSPS – Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984	VOCs	Storage vessels for petroleum liquids with a storage capacity greater than 40,000 gallons constructed or modified after May 18, 1978 and prior to July 23, 1984.	Not applicable
11.63 40 CFR 60 Subpart Kb	NSPS – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984	VOCs	Storage vessels for volatile organic liquids with a storage capacity greater than 40,000 cubic meters constructed or modified after July 23, 1984.	Note Applicable however, exempt due to low vapor pressure
11.63 NMAC 40 CFR 60 Subpart L	NSPS – Standards of Performance for Secondary Lead Smelters	PM	Secondary lead smelters constructed or modified after June 11, 1973: pot furnaces with a charging capacity greater than 250 kg (550 lb), blast furnaces, and reverberatory furnaces.	Not applicable
11.63 NMAC 40 CFR 60 Subpart M	NSPS – Standards of Performance for Secondary Brass and Bronze Production Plants	PM	Secondary brass or bronze production plants constructed or modified after June 11, 1973: reverberatory and electric furnaces with a production capacity greater than or equal to 1,000 kg (2205 lb) and blast furnaces with a production capacity greater than or equal to 250 kg/hr (550 lb/hr).	Not applicable

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Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.63 NMAC 40 CFR 60 Subpart N	NSPS – Standards of Performance for Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After 11 June 1973	PM	Basic oxygen process furnaces constructed or modified after June 11, 1973.	Not applicable
11.63 NMAC 40 CFR 60 Subpart Na	NSPS - Standards of Performance for Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983	PM	Iron and steel plants constructed, modified, and reconstructed after January 20, 1983: top-blown basic oxygen process furnaces and hot metal transfer stations and skimming stations.	Not applicable
11.63 NMAC 40 CFR 60 Subpart O	NSPS - Standards of Performance for Sewage Treatment Plants	PM	Incinerators constructed or modified after June 11, 1973 that combust waste containing more than 10% sewage sludge produced by municipal sewage treatment plants, or incinerators that charge greater than 1,000 kg/day (2,205 lb/day) municipal sewage sludge.	Not applicable
11.63 NMAC 40 CFR 60 Subpart P	NSPS - Standards of Performance for Primary Copper Smelters	PM, SO ₂	Primary copper smelters constructed or modified after October 16, 1974.	Not applicable
11.63 NMAC 40 CFR 60 Subpart Q	NSPS - Standards of Performance for Primary Zinc Smelters	PM, SO ₂	Primary zinc smelters constructed or modified after October 16, 1974.	Not applicable
11.63 NMAC 40 CFR 60 Subpart R	NSPS - Standards of Performance for Primary Lead Smelters	PM, SO ₂	Primary lead smelters constructed or modified after October 16, 1974.	Not applicable

II. Applicable Regulations and Requirements Review

Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.63 NMAC 40 CFR 60 Subpart S	NSPS - Standards of Performance for Primary Aluminum Reduction Plants	Fluorides	Primary aluminum reduction plants constructed or modified after October 23, 1974.	Not applicable
11.63 NMAC 40 CFR 60 Subpart T	NSPS - Standards of Performance for the Phosphate Fertilizer Industry: Wet-Process Phosphoric Acid Plants	Fluorides	Wet-process phosphoric acid plants with a design capacity greater than 15 tons of equivalent P ₂ O ₅ feed per day constructed or modified after October 22, 1974.	Not applicable
11.63 NMAC 40 CFR 60 Subpart U	NSPS - Standards of Performance for the Phosphate Fertilizer Industry: Superphosphoric Acid Plants	Fluorides	Superphosphoric acid plants with a design capacity greater than 15 tons of equivalent P ₂ O ₅ feed per day constructed or modified after October 22, 1974.	Not applicable
11.63 NMAC 40 CFR 60 Subpart V	NSPS - Standards of Performance for the Phosphate Fertilizer Industry: Diammonium Phosphate Plants	Fluorides	Granular diammonium phosphate plants with a design capacity greater than 15 tons of equivalent P ₂ O ₅ feed per day constructed or modified after October 22, 1974.	Not applicable
11.63 NMAC 40 CFR 60 Subpart W	NSPS - Standards of Performance for the Phosphate Fertilizer Industry: Triple Superphosphate Plants	Fluorides	Triple superphosphate plants with a design capacity greater than 15 tons of equivalent P ₂ O ₅ feed per day constructed or modified after October 22, 1974.	Not applicable
11.63 NMAC 40 CFR 60 Subpart X	NSPS - Standards of Performance for the Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities	Fluorides	Granular triple superphosphate storage facilities constructed or modified after October 22, 1974.	Not applicable

II. Applicable Regulations and Requirements Review

Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.63 NMAC 40 CFR 60 Subpart Y	NSPS - Standards of Performance for Coal Preparation Plants	PM	Coal preparation plants, which process greater than 200 tons/day constructed or modified after October 24, 1974.	Not applicable
11.63 NMAC 40 CFR 60 Subpart Z	NSPS - Standards of Performance for Ferroalloy Production Facilities	PM, CO	Electric submerged arc furnaces constructed or modified after October 21, 1974.	Not applicable
11.63 NMAC 40 CFR 60 Subpart AA	NSPS - Standards of Performance for Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974, and On or Before August 17, 1983	PM	Steel plants: electric arc furnaces and dust-handling systems constructed, modified, or reconstructed after October 21, 1974 and on or before August 17, 1983.	Not applicable
11.63 NMAC 40 CFR 60 Subpart AAa	NSPS - Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983	PM	Steel plants: electric arc furnaces, argon-oxygen decarburization vessels, and dust-handling systems constructed, modified, or reconstructed after August 17, 1983.	Not applicable
11.63 NMAC 40 CFR 60 Subpart BB	NSPS - Standards of Performance for Kraft Pulp Mills	PM, total reduced sulfur	Kraft pulp mills constructed or modified after September 24, 1976.	Not applicable
11.63 NMAC 40 CFR 60 Subpart CC	NSPS - Standards of Performance for Glass Manufacturing Plants	PM	Glass melting furnaces with production greater than or equal to 4,550 kg/day constructed or modified after June 15, 1979.	Not applicable
11.63 NMAC 40 CFR 60 Subpart DD	NSPS - Standards of Performance for Grain Elevators	PM	Grain terminal elevators or grain storage elevators constructed, modified, or reconstructed after August 3, 1978.	Not applicable

II. Applicable Regulations and Requirements Review

Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.63 NMAC 40 CFR 60 Subpart EE	NSPS - Standards of Performance for Surface Coating of Metal Furniture	VOCs	Metal furniture surface coating operations that use greater than or equal to 3,842 liters coating/yr constructed, modified, or reconstructed after November 28, 1980.	Not applicable
11.63 NMAC 40 CFR 60 Subpart GG	NSPS - Standards of Performance for Stationary Gas Turbines	NO _x , SO ₂	Stationary gas turbines with a heat input at peak load greater than or equal to 10.7 gigajoules/hr constructed, modified, or reconstructed after October 3, 1977.	Applicable
11.63 NMAC 40 CFR 60 Subpart HH	NSPS - Standards of Performance for Lime Manufacturing Plants	PM	Rotary lime kilns constructed or modified after May 3, 1977.	Not applicable
11.63 NMAC 40 CFR 60 Subpart KK	NSPS - Standards of Performance for Lead-Acid Battery Manufacturing Plants	Pb	Lead-acid battery manufacturing plants with a design capacity to produce batteries containing lead greater than or equal to 6.5 tons/day constructed or modified after January 14, 1980.	Not applicable
11.63 NMAC 40 CFR 60 Subpart LL	NSPS - Standards of Performance for Metallic Mineral Processing Plants	PM	Metallic mineral processing plants constructed or modified after August 24, 1982.	Not applicable
11.63 NMAC 40 CFR 60 Subpart MM	Standards of Performance for Automobile and Light Duty Truck Surface Coating Operations	VOCs	Automobile or light-duty truck assembly plants constructed, reconstructed, or modified after October 5, 1979.	Not applicable
11.63 NMAC 40 CFR 60 Subpart NN	Standards of Performance for Phosphate Rock Plants	PM	Phosphate rock plants with a maximum production capacity greater than 4 tons/hr constructed, modified, or reconstructed after September 21, 1979.	Not applicable
11.63 NMAC 40 CFR 60 Subpart PP	Standards of Performance for Ammonium Sulfate Manufacture	PM	Ammonium sulfate dryers constructed or modified after February 4, 1980.	Not applicable

II. Applicable Regulations and Requirements Review

Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.63 NMAC 40 CFR 60 Subpart QQ	Standards of Performance for the Graphics Industry: Publication Rotogravure Printing	VOCs	Publication rotogravure printing presses constructed, modified, or reconstructed after October 28, 1980.	Not applicable
11.63 NMAC 40 CFR 60 Subpart RR	Standards of Performance for Pressure Sensitive Tape and Label Surface Coating Operations	VOCs	Coating lines used in the manufacture of pressure sensitive tape and label materials constructed, modified, or reconstructed after December 30, 1980.	Not applicable
11.63 NMAC 40 CFR 60 Subpart SS	Standards of Performance for Industrial Surface Coating: Large Appliances	VOCs	Surface coating operations in a large appliance surface coating line constructed, modified, or reconstructed after December 24, 1980.	Not applicable
11.63 NMAC 40 CFR 60 Subpart TT	Standards of Performance for Metal Coil Surface Coating	VOCs	Metal coil surface coating operations constructed, modified, or reconstructed after January 5, 1981.	Not applicable
11.63 NMAC 40 CFR 60 Subpart UU	Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture	PM	Asphalt roofing plants, asphalt processing plants, and petroleum refineries constructed or modified after November 18, 1980.	Not applicable
11.63 NMAC 40 CFR 60 Subpart VV	Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry	VOCs	Synthetic Organic Chemicals Manufacturing Industry (SOCMI) facilities constructed or modified after January 5, 1981.	Not applicable
11.63 NMAC 40 CFR 60 Subpart WW	Standards of Performance for the Beverage Can Surface Coating Industry	VOCs	Beverage can surface coating lines constructed, modified, or reconstructed after November 26, 1980.	Not applicable

II. Applicable Regulations and Requirements Review

Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.63 NMAC 40 CFR 60 Subpart XX	Standards of Performance for Bulk Gasoline Terminals	VOCs	Total of all the loading racks at a bulk gasoline terminal (throughput greater than 75,700 liters/day) which deliver liquid product into gasoline trucks constructed or modified after December 17, 1980.	Not applicable
11.63 NMAC 40 CFR 60 Subpart AAA	Standards of Performance for New Residential Wood Heaters	PM	Wood heaters manufactured on or after July 1, 1988, or sold at retail on or after July 1, 1990.	Not applicable
11.63 NMAC 40 CFR 60 Subpart BBB	Standards of Performance for the Rubber Tire Manufacturing Industry	VOC	Rubber tire manufacturing plants constructed, modified, or reconstructed after January 20, 1983.	Not applicable
11.63 NMAC 40 CFR 60 Subpart DDD	Standards of Performance for Volatile Organic Compound (VOC) Emissions from the Polymer Manufacturing Industry	Total organic compounds	Facilities involved in the manufacture of polypropylene, polyethylene, polystyrene, or poly (ethylene terephthalate).	Not applicable
11.63 NMAC 40 CFR 60 Subpart FFF	Standards of Performance for Flexible Vinyl and Urethane Coating and Printing	VOCs	Rotogravure printing lines used to print or coat flexible vinyl and urethane products constructed, modified, or reconstructed after January 18, 1983.	Not applicable
11.63 NMAC 40 CFR 60 Subpart GGG	Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries	VOCs	Petroleum refineries constructed or modified after January 4, 1983.	Not applicable
11.63 NMAC 40 CFR 60 Subpart HHH	Standards of Performance for Synthetic Fiber Production Facilities	VOCs	Solvent spun synthetic fiber processes that produce greater than 500 megagrams fiber/yr constructed or reconstructed after November 23, 1982.	Not applicable

II. Applicable Regulations and Requirements Review

Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.63 NMAC 40 CFR 60 Subpart III	Standards of Performance for Volatile Organic Compound (VOC) Emissions from the Synthetic Organic Chemicals Manufacturing Industry (SOCMI) Air Oxidation Unit Processes	Total organic compounds	Air oxidation reactors constructed, modified, or reconstructed after October 21, 1983.	Not applicable
11.63 NMAC 40 CFR 60 Subpart JJJ	Standards of Performance for Petroleum Dry Cleaners	VOCs	Petroleum dry cleaner plants with a total manufacturers' rated dryer capacity greater than or equal to 84 lb constructed or modified after December 14, 1982.	Not applicable
11.63 NMAC 40 CFR 60 Subpart KKK	Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants	VOCs	Onshore natural gas processing plants constructed, reconstructed, or modified after January 20, 1984.	Not applicable
11.63 NMAC 40 CFR 60 Subpart LLL	Standards of Performance for Onshore Natural Gas Processing: SO ₂ Emissions	SO ₂	Natural gas processing facilities located on land constructed or modified after January 20, 1984.	Not applicable
11.63 NMAC 40 CFR 60 Subpart NNN	Standards of Performance for Volatile Organic Compound (VOC) Emissions from Synthetic Organic Chemicals Manufacturing Industry (SOCMI) Distillation Operations	Total organic compounds	Distillation units constructed, modified, or reconstructed after December 30, 1983.	Not applicable

II. Applicable Regulations and Requirements Review

Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.63 NMAC 40 CFR 60 Subpart OOO	Standards of Performance for Nonmetallic Mineral Processing Plants	PM	Fixed or portable nonmetallic mineral processing plants constructed, reconstructed, or modified after August 31, 1983.	Not applicable
11.63 NMAC 40 CFR 60 Subpart PPP	Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants	PM	Rotary spin wool fiberglass insulation manufacturing lines constructed, modified, or reconstructed after February 7, 1984.	Not applicable
11.63 NMAC 40 CFR 60 Subpart QQQ	Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems	VOCs	Petroleum refineries constructed, modified, or reconstructed after May 4, 1987: individual drain systems, oil water separators, and aggregate facilities.	Not applicable
11.63 NMAC 40 CFR 60 Subpart RRR	Standards of Performance for Volatile Organic Compound Emissions from Synthetic Organic Chemicals Manufacturing Industry (SOCMI) Reactor Processes	Total organic compounds	Reactor processes constructed, modified, or reconstructed after June 29, 1990.	Not applicable
11.63 NMAC 40 CFR 60 Subpart SSS	Standards of Performance for Magnetic Tape Coating Facilities	VOCs	Coating operations for magnetic tape coating facilities constructed, modified, or reconstructed after January 22, 1986.	Not applicable
11.63 NMAC 40 CFR 60 Subpart TTT	Standards of Performance for Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines	VOCs	Spray booths for plastic parts for use in the manufacture of business machines constructed, modified, or reconstructed after January 8, 1986.	Not applicable

II. Applicable Regulations and Requirements Review

Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.63 NMAC 40 CFR 60 Subpart UUU	Standards of Performance for Calciners and Dryers in Mineral Industries	PM	Calciners and dryers at mineral processing plants constructed, modified, or reconstructed after April 23, 1986.	Not applicable
11.63 NMAC 40 CFR 60 Subpart VVV	Standards of Performance for Polymeric Coating of Supporting Substrate Facilities	VOCs	Coating operations for polymeric coating of supporting substrates constructed, modified, or reconstructed after April 30, 1987.	Not applicable
11.63 NMAC 40 CFR 60 Subpart WWW	Standards of Performance for Municipal Solid Waste Landfills	Non-methane organic compounds	Municipal solid waste landfills with a design capacity greater than or equal to 2.5 million cubic meters constructed, reconstructed, modified, or began accepting waste on or after May 30, 1991.	Not applicable
11.63 NMAC 40 CFR 60 Subpart AAAA	Standards of Performance for Small Municipal Waste Combustion Units for Which Commenced After August 30, 1999 or for Which Modifications or Reconstruction is Commenced After June 6, 2001	PM, Cd, Pb, Hg, SO ₂ , HCl, dioxins/furans, NO _x , CO, fugitive ash	Establishes new source performance standards for new small municipal waste combustion units that commenced construction after August 30, 1999 or commenced reconstruction or modification after June 6, 2001.	Not applicable
11.63 NMAC 40 CFR 60 Subpart BBBB	Emission Guidelines and Compliance Times for Small Municipal Waste Combustion Units Constructed On or Before August 30, 1999	PM, Cd, Pb, Hg, SO ₂ , HCl, dioxins/furans, NO _x , CO, fugitive ash	Establishes emission guidelines and compliance schedules for the control of emissions from existing small municipal waste combustion units that commenced construction on or before August 30, 1999.	Not applicable
11.63 NMAC 40 CFR 60 Subpart CCCC	Standards of Performance for Commercial and Industrial Solid Waste Incineration Units for	PM, Cd, Pb, Hg, SO ₂ , HCl, dioxins/furans, NO _x , CO, Opacity	Establishes new source performance standards for commercial and industrial solid waste incineration (CISWI) units. A CISWI unit that commenced construction after June 4, 2010 or A CISWI unit that	Not applicable

II. Applicable Regulations and Requirements Review

Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
	Which Construction is Commenced After November 30, 1999 or for Which Modification or Reconstruction is Commenced After June 1, 2001		commenced reconstruction or modification after August 7, 2013.	
11.63 NMAC 40 CFR 60 Subpart DDDD	Emission Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units that Commenced Construction On or Before November 30, 1999	PM, Cd, Pb, Hg, SO ₂ , HCl, dioxins/furans, NO _x , CO, fugitive ash, Opacity	Establishes emission guidelines and compliance schedules for the control of emissions from commercial and industrial solid waste incineration (CISWI) units that commenced construction after November 30, 1999, but no later than June 4, 2010, or commenced modification or reconstruction after June 1, 2001 but no later than August 7, 2013.	Not applicable
11.63 NMAC 40 CFR 60 Subpart EEEE	Standards of Performance for Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006	PM, Cd, Pb, Hg, SO ₂ , HCl, dioxins/furans, NO _x , CO, Opacity	Establishes new source performance standards for other solid waste incineration units are very small municipal waste combustion units and institutional waste incineration units that commenced construction after December 9, 2004 or commenced reconstruction or modification on or after June 16, 2006	Not applicable
11.63 NMAC 40 CFR 60 Subpart FFFF	Emission Guidelines and Compliance Times for Other Solid Waste Incineration Units that Commenced Construction On or Before December 9, 2004	PM, Cd, Pb, Hg, SO ₂ , HCl, dioxins/furans, NO _x , CO, Opacity	Establishes emission guidelines and compliance schedules for the control of emissions from other solid waste incineration (OSWI) units that commenced construction on or before December 9, 2004	Not applicable

II. Applicable Regulations and Requirements Review

Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.63 NMAC 40 CFR 60 Subpart III	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	PM, SO ₂ , NO _x , CO, NMHC	The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) that commence construction after July 11, 2005.	Not applicable
11.63 NMAC 40 CFR 60 Subpart JJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	PM, SO ₂ , NO _x , CO, NMHC	The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) that commence construction after July 11, 2005.	Not applicable
11.63 NMAC 40 CFR 60 Subpart KKKK	Standards of Performance for Stationary Combustion Turbines	SO ₂ , NO _x	Establishes emission standards and compliance schedules for the control of emissions from stationary combustion turbines that commenced construction, modification or reconstruction after February 18, 2005.	Not applicable
11.63 NMAC 40 CFR 60 Subpart LLLL	Standards of Performance for New Sewage Sludge Incineration Units	PM, Cd, Pb, Hg, SO ₂ , HCl, dioxins/furans, NO _x , CO, fugitive ash handling	Establishes new source performance standards for sewage sludge incineration (SSI) units which construction commenced after October 14, 2010 or for which modification commenced after September 21, 2011.	Not applicable
11.63 NMAC 40 CFR 60 Subpart MMMM	Emission Guidelines and Compliance Times for Existing Sewage Sludge Incineration Units	PM, Cd, Pb, Hg, SO ₂ , HCl, dioxins/furans, NO _x , CO, fugitive ash handling	Establishes emission guidelines and compliance schedules for the control of emissions from sewage sludge incineration (SSI) units that commenced construction on or before October 14, 2010.	Not applicable
11.63 NMAC 40 CFR 60 Subpart OOOO	Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution	VOC, SO ₂	Establishes emission standards and compliance schedules for the control of volatile organic compounds (VOC) and sulfur dioxide (SO ₂) emissions from onshore affected facilities that commence construction, modification or reconstruction after August 23, 2011.	Not applicable
11.64 NMAC 40 CFR 61 Subpart A	General Provisions	HAPs	General provisions for National Emission Standards for Hazardous Air Pollutants (NESHAP).	Applicable for each emission unit affected by NESHAP, as indicated in 40 CFR 61 (see below)

II. Applicable Regulations and Requirements Review

Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.64 NMAC 40 CFR 61 Subpart B	National Emission Standards for Radon Emissions from Underground Uranium Mines	Radon-222	Active underground uranium mines, which have mined, will mine, or are designed to mine over 100,000 tons of ore during the life of the mine or have had or will have an annual ore production greater than 10,000 tons.	Not applicable
11.64 NMAC 40 CFR 61 Subpart C	National Emission Standards for Beryllium	Beryllium	Extraction plants, ceramic plants, foundries, incinerators, propellant plants, and machine shops which process beryllium.	Not applicable
11.64 NMAC 40 CFR 61 Subpart D	National Emission Standards for Beryllium Rocket Motor Firing	Beryllium	Rocket motor test sites that conduct static test firing of beryllium rockets and/or the disposal of beryllium propellants.	Not applicable
11.64 NMAC 40 CFR 61 Subpart E	National Emission Standards for Mercury	Mercury	Sources which process mercury ore to recover mercury, use mercury chlor-alkali cells to produce chlorine gas and alkali metal hydroxide, and incinerate or dry wastewater treatment plant sludge.	Not applicable
11.64 NMAC 40 CFR 61 Subpart F	National Emission Standards for Vinyl Chloride	Vinyl chloride	Plants which produce ethylene dichloride by reaction of oxygen and hydrogen chloride with ethylene, vinyl chloride by any process, and/or one or more polymers containing any fraction of polymerized vinyl chloride.	Not applicable
11.64 NMAC 40 CFR 61 Subpart H	National Emission Standards for Emissions of Radionuclides Other Than Radon from Department of Energy Facilities	Radionuclides	DOE facilities that emit any radionuclide other than radon-222 and radon-220.	Not applicable
11.64 NMAC 40 CFR 61 Subpart I	National Emission Standards for Radionuclide Emissions from Federal Facilities Other Than Nuclear Regulatory	Radionuclides	Facilities other than nuclear power reactors which are licensed by the Nuclear Regulatory Commission and facilities owned or operated by any Federal agency other than the DOE.	Not applicable

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Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
	Commission Licensees and Not Covered by Subpart H			
11.64 NMAC 40 CFR 61 Subpart J	National Emission Standards for Equipment Leaks (Fugitive Emission Sources) of Benzene	Benzene	Sources that are intended to operate in benzene service that produce or use greater than or equal to 1,000 megagrams of benzene/yr.	Not applicable
11.64 NMAC 40 CFR 61 Subpart K	National Emission Standards for Radionuclide Emissions from Elemental Phosphorus Plants	Polonium-210	Calciners and nodulizing kilns at elemental phosphorous plants.	Not applicable
11.64 NMAC 40 CFR 61 Subpart L	National Emission Standards for Benzene Emissions from Coke By-Product Recovery Plants	Benzene	Furnace and foundry coke by-product recovery plants.	Not applicable
11.64 NMAC 40 CFR 61 Subpart M	National Emission Standards for Asbestos	Asbestos	Asbestos mills, roadways with asbestos tailings, manufacturing operations using commercial asbestos, demolition and renovation activities, spraying of asbestos-containing materials, fabricating operations using commercial asbestos, and operations that convert asbestos-containing material into asbestos-free material.	Not Applicable
11.64 NMAC 40 CFR 61 Subpart N	National Emission Standards for Inorganic Arsenic Emissions from Glass Manufacturing Plants	Inorganic arsenic	Glass melting furnaces that use commercial arsenic as a raw material.	Not applicable
11.64 NMAC 40 CFR 61 Subpart O	National Emission Standards for Inorganic Arsenic Emissions from Primary Copper Smelters	Inorganic arsenic	Copper converters at primary copper smelters.	Not applicable

II. Applicable Regulations and Requirements Review

Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.64 NMAC 40 CFR 61 Subpart P	National Emission Standards for Inorganic Arsenic Emissions from Arsenic Trioxide and Metallic Arsenic Production Facilities	Inorganic arsenic	Metallic arsenic production plants and arsenic trioxide plants.	Not applicable
11.64 NMAC 40 CFR 61 Subpart Q	National Emission Standards for Radon Emissions from Department of Energy Facilities	Radon-222	Storage and disposal facilities for radium-containing material that are owned or operated by the DOE.	Not applicable
11.64 NMAC 40 CFR 61 Subpart R	National Emission Standards for Radon Emissions from Phosphogypsum Stacks	Radon-222	Phosphogypsum stacks and wet acid phosphorus production operations.	Not applicable
11.64 NMAC 40 CFR 61 Subpart T	National Emission Standards for Radon Emissions from the Disposal of Uranium Mill Tailings	Radon-222	Sites used for the disposal of uranium mill tailings.	Not applicable
11.64 NMAC 40 CFR 61 Subpart V	National Emission Standards for Equipment Leaks (Fugitive Emission Sources)	Volatile hazardous air pollutants	Sources that are intended to operate in volatile hazardous air pollutant service.	Not applicable
11.64 NMAC 40 CFR 61 Subpart W	National Emission Standards for Radon Emissions from Operating Mill Tailings	Radon-222	Uranium mill tailings.	Not applicable

II. Applicable Regulations and Requirements Review

Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.64 NMAC 40 CFR 61 Subpart Y	National Emission Standards for Benzene Emissions from Benzene Storage Vessels	Benzene	Storage vessels greater than or equal to 10,000 gallons storing benzene having a specific gravity within the range specified in ASTM D.	Not applicable
11.64 NMAC 40 CFR 61 Subpart BB	National Emission Standards for Benzene Emissions from Benzene Transfer Operations	Benzene	Total of all loading racks at which benzene is loaded at benzene production facilities and bulk terminals.	Not applicable
11.64 NMAC 40 CFR 61 Subpart FF	National Emission Standards for Benzene Waste Operations	Benzene	Chemical manufacturing plants, coke by-product recovery plants, and petroleum refineries.	Not applicable
11.65 NMAC	Volatile Organic Compounds	VOCs (HC Vapor)	Covers sources not otherwise covered under 40 CFR 60— Gasoline storage tanks >40,000 gallon capacity; gasoline loading rack w/30-day throughput >600,000 gallons; transport and delivery of gasoline; delivery of gasoline into underground storage tanks; gasoline handling and holding at retail and fleet service stations; industrial handling storage, or use of organic, fluids and gases; cutback asphalt; or contaminated soils and/or groundwater treatment.	Not Applicable
11.66 NMAC	Process Equipment	PM, fugitive dust	Process equipment, cement kilns, gypsum cookers, and asphaltic batch plants.	Not applicable
11.67.12 NMAC	Equipment, Emissions, Limitations – Orchard Heaters	Opacity	Orchard heaters.	Not applicable
11.67.13 NMAC	Equipment, Emissions, Limitations – Kraft Mills	Total reduced sulfur	Kraft mills.	Not applicable

II. Applicable Regulations and Requirements Review

Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.67.14 NMAC	Equipment, Emissions, Limitations – Coal Burning Equipment – Nitrogen Dioxide	NO ₂	Coal burning equipment constructed after 31 December 1974 >25 MW or >250 million Btu/hr; Emission Limit: 0.45 lb/million Btu.	Not applicable
11.67.15 NMAC	Equipment, Emissions, Limitations – Coal Burning Equipment – Sulfur Dioxide	SO ₂	Coal burning equipment constructed after 31 December 1974 >25 MW or >250 million Btu/hr; Emission Limit: 0.34 lb/million Btu.	Not applicable
11.67.16 NMAC	Equipment, Emissions, Limitations – Coal Burning Equipment – Particulate Matter	PM	Coal burning equipment constructed after 31 December 1974; Emission Limit: 0.05 lb/million Btu.	Not applicable
11.67.17 NMAC	Equipment, Emissions, Limitations – Oil Burning Equipment – Nitrogen Dioxide	NO ₂	Oil burning equipment >1 million Btu/yr/unit; Emission Limit: 0.3 lb/million Btu.	Applicable
11.67.18 NMAC	Equipment, Emissions, Limitations – Oil Burning Equipment – Particulate Matter	PM, visible emissions, opacity	Oil burning equipment >250 million Btu/yr/unit; PM emission limit: 0.03 lb/million Btu; 20% Opacity.	Applicable
11.67.19 NMAC	Equipment, Emissions, Limitations – Oil Burning Equipment – Sulfur Dioxide	SO ₂	Oil burning equipment >1 million Btu/yr/unit; Emission limit: 0.34 lb/million Btu.	Applicable
11.67.20 NMAC	Equipment, Emissions, Limitations – Gas Burning Equipment – Nitrogen Dioxide	NO ₂	Gas burning equipment constructed after 31 December 1974 > 1 million Btu/yr/unit; Emission Limit: 0.3 lb/million Btu.	Applicable

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Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.68 NMAC	Incinerators and Crematories	PM, visible emissions, noxious fumes	Incinerators and crematories.	Not applicable
11.69 NMAC	Pathological Waste Destructors	Listed in 11.69	PWDs.	Not applicable
11.71 NMAC	Municipal Solid Waste Landfills	NMOC	New and existing MSW landfills with design capacities greater than or equal to 2.5 million megagrams or 2.5 million cubic meters	Not applicable
11.90.13 NMAC	Administration, Enforcement, Inspection – Source Surveillance	All	When notified by the Director, the facility must keep records deemed necessary by the Director.	Applicable
11.90.14 NMAC	Administration, Enforcement, Inspection – Administration and Enforcement	All	When notified by the Director, the facility must determine emissions from a source with a 20 NMAC 11 permit.	Applicable
11.100 NMAC	Motor Vehicle Inspection - Decentralized	Motor vehicle emissions	Motor vehicle air pollution emissions control devices.	Not Applicable
11.101 NMAC	Motor Vehicle Inspection - Centralized	Motor vehicle emissions	Motor vehicle air pollution emissions control devices.	Not Applicable
11.102 NMAC	Oxygenated Fuels	Motor vehicle emissions	Motor vehicles.	Not Applicable
11.103 NMAC	Motor Vehicle Visible Emissions	Motor vehicle emissions	Motor vehicles visible air contaminant emissions.	Not Applicable
11.104 NMAC	Emission Standards for New Motor Vehicles	Motor vehicle emissions	Motor vehicles.	Not Applicable

II. Applicable Regulations and Requirements Review

Summary of All Federal Potentially Applicable Requirements (Not a complete list of all federal regulations)

Federal Regulation Citation	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
40 CFR 50	National Primary and Secondary Ambient Air Quality Standards	NO _x , CO, SO ₂ , PM ₁₀ , PM _{2.5} , Ozone, Lead	Facility	Applicable
40 CFR 51	Requirements for Preparation, Adoption, and Submittal of Implementation Plans	All Regulated Pollutants	City of Albuquerque/Bernalillo County are the regulating authority for this facility.	Applicable
40 CFR 52	Approval and Promulgation of Implementation Plans	All Regulated Pollutants	City of Albuquerque/Bernalillo County are the regulating authority for this facility.	Applicable
40 CFR 63 Subpart A	Requirements for Control Technology Determinations for Major Sources in Accordance With Clean Air Act Sections, Sections 112(g) and 112(j)	HAPs	General provisions for stationary sources that emit or have the potential to emit HAPs.	Applicable for each source category, as indicated in 40 CFR 63 (see below)
40 CFR 63 Subpart B	List of Hazardous Air Pollutants, Petition Process, Lesser Quantity Designations, Source Category List	HAPs	One or more stationary sources, that is a major source of HAPs, included in a source category for which emission standards have not been established.	Applicable for each source category for which emission standards have not been established
40 CFR 63 Subpart C	Regulations Governing Compliance Extensions for Early Reductions of Hazardous Air Pollutants	Caprolactam	Caprolactam has been deleted from the list of HAPs.	Not applicable

II. Applicable Regulations and Requirements Review

Federal Regulation Citation	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
40 CFR 63 Subpart D	Regulations Governing Compliance Extensions for Early Reductions of Hazardous Air Pollutants	HAPs	Existing sources that require a compliance extension from a standard issued under Section 112(d) of the Clean Air Act.	Applicable for sources that require a compliance extension from a standard issued under Section 112(d) of the Clean Air Act
40 CFR 63 Subpart E	Approval of State Programs and Delegation of Federal Authorities	HAPs	Establishes procedures for the approval of State rules or programs to establish limitations on the potential to emit pollutants listed in or pursuant to section 112(b) of the Act.	Applicable
40 CFR 63 Subpart H	National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks	HAPs	Devices or systems that are intended to operate in organic hazardous air pollutants service 300 hours or more during the calendar year, within a source subject to a specific subpart.	Not applicable
40 CFR 63 Subpart I	National Emission Standards for Organic Hazardous Air Pollutants for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks	Butadiene, styrene, carbon tetrachloride, methylene chloride, ethylene dichloride, tetrachloro-ethylene and chloroform	Styrene-butadiene rubber production; polybutadiene rubber production; Captafol, Captan, chlorothalonil, dacthal, and Tordon acid production; Hypalon, OBPA, polycarbonates, polysulfide rubber, chlorinated paraffins, and symmetrical tetrachloropyridine production; pharmaceutical production using carbon tetrachloride or methylene chloride; and methylmethacrylate-butadiene-styrene resins, butadiene- furfural cotrimer, methylmethacrylate-acrylonitrile- butadiene-styrene resins, and ethylidene norbornene production.	Not applicable
40 CFR 63 Subpart Q	National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers	HAPs	Industrial process cooling towers that are operated with chromium-based water treatment chemicals on or after September 8, 1994.	Not applicable

II. Applicable Regulations and Requirements Review

Federal Regulation Citation	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
40 CFR 63 Subpart R	National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations)	Total organic compounds	Bulk gasoline terminals and pipeline breakout stations.	Not applicable
40 CFR 63 Subpart HH	National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities	HAPs	Applies to the owners and operators of the emission points that are located at oil and natural gas production facilities	Not applicable
40 CFR 63 Subpart OO	National Emission Standards for Tanks - Level 1	HAPs	Tanks subject to another subpart of 40 CFR Parts 60, 61, or 63 that references this subpart.	Not applicable
40 CFR 63 Subpart QQ	National Emission Standards for Surface Impoundments	HAPs	Surface impoundments subject to another subpart of 40 CFR Parts 60, 61, or 63 that references this subpart.	Not applicable
40 CFR 63 Subpart SS	National Emission Standards for Closed Vent Systems, Control Devices, Recovery Devices and Routing to a Fuel Gas System or a Process	HAPs	Requirements for closed vent systems, control devices and routing of air emissions to a fuel gas system or process.	Not applicable
40 CFR 63 Subpart TT	National Emission Standards for Equipment Leaks - Control Level 1	HAPs	Applies to the control of air emissions from equipment leaks for which another subpart references the use of this subpart for such air emission control.	Not applicable

II. Applicable Regulations and Requirements Review

Federal Regulation Citation	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
40 CFR 63 Subpart UU	National Emission Standards for Equipment Leaks - Control Level 2 Standards	HAPs	Applies to the control of air emissions from equipment leaks for which another subpart references the use of this subpart for such air emission control.	Not applicable
40 CFR 63 Subpart VV	National Emission Standards for Oil-Water Separators and Organic-Water Separators	HAPs	Oil-water separators and organic-water separators subject to another subpart of 40 CFR Parts 60, 61, or 63 that references this subpart.	Not applicable
40 CFR 63 Subpart WW	National Emission Standards for Storage Vessels (Tanks) - Control Level 2	HAPs	Applies to the control of air emissions from storage vessels for which another subpart references the use of this subpart for such air emission control.	Not applicable
40 CFR 63 Subpart YYYY	National Emission Standard for Hazardous Air Pollutants for Stationary Combustion Turbines	HAPs	Establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emissions from stationary combustion turbines located at major sources of HAP emissions, and requirements to demonstrate initial and continuous compliance with the emission and operating limitations.	Not applicable RBGS is not a major source of HAPs
40 CFR 63 Subpart ZZZZ	National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines	HAPs	Establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions.	Applicable for RBGS limited use fire pump
40 CFR 63 Subpart UUUU	National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units	HAPs	Establishes national emission limitations and work practice standards for hazardous air pollutants (HAP) emitted from coal- and oil-fired electric utility steam generating units (EGUs)	Not applicable RBGS is not a steam generating unit.

II. Applicable Regulations and Requirements Review

Federal Regulation Citation	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
40 CFR 63 Subpart JJJJJ	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources	HAPs	Owner or operator of an industrial, commercial, or institutional boiler.	Not applicable RBGS is not a boiler.
40 CFR 64	Compliance Assurance Monitoring	All pollutants	Emission units with controls and with a potential to emit greater than the Major Source Threshold.	Not applicable RGGS is not applicable to CAM.
40 CFR 68	Chemical Accident Prevention Provisions	Toxic and flammable substances	Facilities with a stationary source that has more than the threshold quantity of a listed regulated substance.	Not applicable
40 CFR 70	State Operating Permits Programs	Regulated Pollutants	Establishment of comprehensive State air quality permitting systems consistent with the requirements of title V of the Clean Air Act	Applicable
40 CFR 72	Permits Regulation	SO ₂ , NO _x	Sources subject to the Acid Rain Program: units listed in Tables 1, 2, or 3 of 40 CFR 73 or utility units (units that sell electricity).	Applicable
40 CFR 73	Sulfur Dioxide Allowance System	SO ₂	Facilities applicable to 40 CFR 72; independent power producers; facilities who may apply to receive allowances under the Energy Conservation and Renewable Energy Reserve Program; small diesel refineries; and any other person who chooses to purchase, hold, or transfer allowances (authorization to emit up to one ton of sulfur dioxide).	Applicable, RBGS holds SO ₂ Allowances
40 CFR 74	Sulfur Dioxide Opt-Ins	SO ₂	Combustion or process sources not affected by 40 CFR 72 may submit an opt-in permit application to become opt-in sources.	Not applicable
40 CFR 75	Continuous Emission Monitoring	SO ₂ , NO _x , CO	Units subject to Acid Rain emission limitations and reduction requirements for SO ₂ and NO _x .	Applicable

II. Applicable Regulations and Requirements Review

Federal Regulation Citation	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
40 CFR 76	Acid Rain Nitrogen Oxides Emission Reduction Program	NO _x	Coal-fired utility units.	Not applicable
40 CFR 77	Excess Emissions	SO ₂ , NO _x	Facilities affected under the Acid Rain Program.	Applicable
40 CFR 79	Registration of Fuels and Fuel Additives	VOCs, HAPs	Fuel manufacturers.	Not applicable
40 CFR 80 Subpart A	General Provisions	VOCs, HAPs	General provisions for the control and/or prohibition of fuels and additives for use in motor vehicles and motor vehicle engines.	Not applicable
40 CFR 80 Subpart B	Controls and Prohibitions	VOCs, HAPs	Fuel distributors, wholesale purchaser-consumers, motor vehicle manufacturers, retailers, refiners, importers, resellers and carriers for gasoline, diesel fuel, liquefied petroleum gas, and natural gas.	Not applicable
40 CFR 80 Subpart C	Oxygenated Gasoline	VOCs, HAPs	Gasoline retailers responsible for labeling pumps that are part of the oxygenated gasoline program.	Not applicable
40 CFR 80 Subpart D	Reformulated Gasoline	Multiple pollutants associated with reformulated gasoline	Reformulated gasoline intended for sale or use in any covered area.	Not applicable
40 CFR 80 Subpart E	Anti-Dumping	Multiple pollutants associated with anti-dumping	Refiners and importers of conventional gasoline.	Not applicable
40 CFR 80 Subpart F	Attest Engagements	VOCs, HAPs	Gasoline refiners, importers, and oxygenate blenders.	Not applicable
40 CFR 80 Subpart G	Detergent Gasoline	VOCs, HAPs	Gasoline distributors.	Not applicable

II. Applicable Regulations and Requirements Review

Federal Regulation Citation	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
40 CFR 80 Subpart H	Gasoline Sulfur	Gasoline sulfur standards	Gasoline refiners and importers.	Not applicable
40 CFR 80 Subpart I	Motor Vehicle Diesel Fuel; Nonroad, Locomotive, and Marine Diesel Fuel; and ECA Marine Fuel	Diesel fuel additive standards	Standards for diesel fuel additives for nonroad, locomotive, and marine diesel Fuel and ECA marine fuel	Not applicable
40 CFR 80 Subpart J	Gasoline Toxics	Toxicants	Refiners and importers of conventional gasoline.	Not applicable
40 CFR 80 Subpart K	Renewable Fuel Standard	Renewable Fuel Standard	Standards for fuel that is used to replace or reduce the quantity of fossil fuel present in a fuel mixture used to operate a motor vehicle.	Not applicable
40 CFR 80 Subpart L	Gasoline Benzene	Benzene	Gasoline produced at each refinery of a refiner or imported by an importer, must meet the specific benzene standard.	Not applicable
40 CFR 80 Subpart M	Renewable Fuel Standard	GHG	Apply to all renewable fuel produced on or after July 1, 2010, for all RINs generated on or after July 1, 2010, and for all renewable volume obligations and compliance periods starting with January 1, 2010.	Not applicable
40 CFR 80 Subpart N	Additional Requirements for Gasoline-Ethanol Blends	Labeling	Any retailer or wholesale purchaser-consumer who sells, dispenses, or offers for sale or dispensing E15 shall affix a conspicuous and legible label to the fuel dispenser	Not applicable
40 CFR 80 Subpart O	Gasoline Sulfur	Gasoline sulfur standards	Gasoline refiners and importers.	Not applicable
40 CFR 82 Subpart A	Production and Consumption Controls	Class I substances: chlorofluorocarbons (CFCs), halons, carbon tetrachloride, and methyl chloroform Class II substances: hydrochlorofluoro- carbons (HCFCs)	Produce, transform, destroy, import, or export a controlled substance or import a controlled product.	Not applicable

II. Applicable Regulations and Requirements Review

Federal Regulation Citation	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
40 CFR 82 Subpart B	Servicing of Motor Vehicle Air Conditioners	Class I and II substances	Service on a motor vehicle that involves the refrigerant in the air conditioner.	Not applicable
40 CFR 82 Subpart D	Federal Procurement	Class I and II substances	Federal departments, agencies, and instrumentalities to adopt procurement regulations.	Not applicable
40 CFR 82 Subpart E	The Labeling of Products Using Ozone Depleting Substances (ODS)	Class I and II substances	Containers filled with CFCs, halons, carbon tetrachloride, methyl chloroform or HCFCs and products manufactured with CFCs, halons, carbon tetrachloride, and methyl chloroform.	Not applicable
40 CFR 82 Subpart F	Recycling and Emissions Reduction	Class I and II substances	Servicing, maintaining, repairing, or disposing of appliances, as well as refrigerant reclaimers, appliance owners, manufacturers of appliances, and recycling and recovery equipment.	Not applicable
40 CFR 82 Subpart G	Significant New Alternatives Policy Program	ODS	Producers and users of substitutes for ODS	Not applicable
40 CFR 82 Subpart I	Ban on Refrigeration and Air-Conditioning Appliances Containing HCFCs	Class I and II substances	Protect stratospheric ozone by restricting the sale and distribution of HCFC containing appliances.	Not applicable
40 CFR 85	Control of Air Pollution from Motor Vehicles and Motor Vehicle Engines	Exhaust hydrocarbons, CO, NO _x , PM, evaporative hydrocarbons	Automobile manufacturers or importers.	Not applicable
40 CFR 86	Control of Air Pollution from New and In-Use Motor Vehicles and New and In-Use Motor Vehicle Engines Certification and Test Procedures	NO _x , PM	Automobile manufacturers.	Not applicable

II. Applicable Regulations and Requirements Review

Federal Regulation Citation	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
40 CFR 87	Control of Air Pollution from Aircraft and Aircraft Engines	Fuel venting emissions and exhaust emissions	Aircraft gas turbines of classes T3, T8, TSS, and TF.	Not applicable
40 CFR 88	Clean-Fuel Vehicles	Exhaust emissions, carbon or nitrogen compounds, non-methane organic gas, CO, NO _x , PM, formaldehyde, non-methane hydrocarbon, total hydrocarbon,	Vehicles used in the Clean Fuel Fleet Program and the California Pilot Test Program.	Not applicable
40 CFR 89	Control of Emissions from New and In-Use Nonroad Engines	NO _x , CO, hydrocarbon, and PM exhaust emissions	Nonroad compression-ignition engines with a gross power output greater than or equal to 37 kilowatts.	Not applicable
40 CFR 90	Control of Emissions from Nonroad Spark-Ignition Engines	NO _x , CO, hydrocarbon, and PM exhaust emissions	Nonroad spark-ignition engines and vehicles with a gross power output less than or equal to 19 kilowatts.	Not applicable
40 CFR 91	Control of Emissions from Marine Spark-Ignition Engines	NO _x , CO, hydrocarbon, and PM exhaust emissions	Applies to marine spark-ignition engines used to propel marine vessels.	Not applicable
40 CFR 92	Control of Air Pollution from Locomotive and Locomotive Engines	NO _x , CO, hydrocarbon, and PM exhaust emissions	The provisions of this part apply to manufacturers, remanufacturers, owners and operators of: (1) Locomotives and locomotive engines manufactured on or after January 1, 2000; and (2) Locomotives and locomotive engines manufactured on or after January 1, 1973 and remanufactured on or after January 1, 2000; and (3) Locomotives and locomotive engines manufactured prior to January 1, 1973, and upgraded on or after January 1, 2000.	Not applicable

II. Applicable Regulations and Requirements Review

Federal Regulation Citation	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
40 CFR 93	Determining Conformity of Federal Actions to State or Federal Implementation Plans	Planning Implementation	Determining Conformity of Federal Actions to State or Federal Implementation Plans	Not applicable
40 CFR 94	Control of Emissions from Marine Compression-Ignition Engines	NO _x , CO, hydrocarbon, and PM exhaust emissions	Applies to marine compression-ignition engines used to propel marine vessels.	Not applicable
40 CFR 96	NO _x Budget Trading Program and CAIR NO _x and SO ₂ Trading Programs for State Implementation Plans	NO _x	Establishes general provisions and the applicability, permitting, allowance, excess emissions, monitoring, and opt-in provisions for the NO _x Budget Trading Program for State implementation plans as a means of mitigating the interstate transport of ozone and nitrogen oxides, an ozone precursor.	Not applicable
40 CFR 97	Federal NO _x Budget Trading Program and CAIR NO _x and SO ₂ Trading Programs	NO _x and SO ₂	Establishes general provisions and the applicability, permitting, allowance, excess emissions, monitoring, and opt-in provisions for the federal NO _x Budget Trading Program as a means of mitigating the interstate transport of ozone and nitrogen oxides, an ozone precursor	Not applicable
40 CFR 98	Mandatory Greenhouse Gas Reporting	GHG	Establishes mandatory greenhouse gas (GHG) reporting requirements for owners and operators of certain facilities that directly emit GHG as well as for certain suppliers	Applicable

II. Applicable Regulations and Requirements Review

Notes:

<	=	less than	HCl	=	hydrogen chloride	PM	=	particulate matter
>	=	greater than	Hg	=	mercury	PWD	=	pathological waste destructor
AAQS	=	Ambient Air Quality Standards	Kg	=	kilogram(s)	SAE	=	Society of Automotive Engineers
AC	=	air conditioning	Lb/yr	=	pounds per year	SNAP	=	Significant New Alternative Policy
AQCR	=	Air Quality Control Region	MVAC	=	motor vehicle air conditioner	SO ₂	=	sulfur dioxide
Btu/hr	=	British thermal units per hour	NESHAP	=	National Emission Standards for Hazardous Air Pollutants	SOCMI	=	Synthetic organic chemicals manufacturing industry
Cd	=	cadmium	NO ₂	=	nitrogen dioxide	tpy	=	tons per year
CFC	=	chlorofluorocarbon	NO _x	=	nitrogen oxide	VOC	=	volatile organic compound
CFR	=	<i>Code of Federal Regulations</i>	NMAC	=	<i>New Mexico Administrative Code</i>	DOE	=	Department of Energy
CO	=	carbon monoxide	NSPS	=	New Source Performance Standards	Pb	=	lead
ODS	=	ozone-depleting substances	HAP	=	hazardous air pollutant			

III. Monitoring Protocol

III. Monitoring Protocol

CFR 40 Part 64; Compliance Assurance Monitoring

64.2 Applicability

(a) *Except for backup utility units that are exempt under paragraph (b)(2) of this section, the requirements of this part shall apply to a pollutant-specific emissions unit at a major source that is required to obtain a part 70 or 71 permit if the unit satisfies all of the following criteria:*

(1) The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under paragraph (b)(1) of this section;

(2) The unit uses a control device to achieve compliance with any such emission limitation or standard; and

(3) The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source. For purposes of this paragraph, "potential pre-control device emissions" shall have the same meaning as "potential to emit," as defined in §64.1, except that emission reductions achieved by the applicable control device shall not be taken into account.

For PNM's Rio Bravo Generating Station, NO_x emissions are achieved with low-NO_x burners when combusting natural gas and water injection when combusting #2 fuel oil. Both control methods reduce the formation of NO_x emissions by 40 to 50%.

Pursuant to 40 CFR 64.2(b)(1)(iii) and (vi), Rio Bravo Generating Station is exempt from the potential requirements of 40 CFR Part 64.

64.2 Applicability

(b) Exemptions

(1) Exempt emission limitations or standards. The requirements of this part shall not apply to any of the following emission limitations or standards:

(i) Emission limitations or standards proposed by the Administrator after November 15, 1990 pursuant to section 111 or 112 of the Act.

(ii) Stratospheric ozone protection requirements under title VI of the Act.

III. Monitoring Protocol

(iii) Acid Rain Program requirements pursuant to sections 404, 405, 406, 407(a), 407(b), or 410 of the Act.

(iv) Emission limitations or standards or other applicable requirements that apply solely under an emissions trading program approved or promulgated by the Administrator under the Act that allows for trading emissions within a source or between sources. (v) An emissions cap that meets the requirements specified in § 70.4(b)(12) or § 71.6(a)(13)(iii) of this chapter.

(vi) Emission limitations or standards for which a part 70 or 71 permit specifies a continuous compliance determination method, as defined in § 64.1. The exemption provided in this paragraph (b)(1)(vi) shall not apply if the applicable compliance method includes an assumed control device emission reduction factor that could be affected by the actual operation and maintenance of the control device (such as a surface coating line controlled by an incinerator for which continuous compliance is determined by calculating emissions on the basis of coating records and an assumed control device efficiency factor based on an initial performance test; in this example, this part would apply to the control device and capture system, but not to the remaining elements of the coating line, such as raw material usage).

IV. Monitoring, Recordkeeping, and Reporting Compliance Certification

IV. Monitoring, Recordkeeping, and Reporting Compliance Certification

PNM's Rio Bravo Generating Station certified compliance with all applicable requirements of Title V Operating Permit #2093 as of July 16, 2014. A revised Title V Operating Permit #2093-RV1 was issued September 19, 2014 which changed the ownership and name of the plant from Delta-Persons Generating Station to PNM's Rio Bravo Generating Station. The following list includes monitoring, recordkeeping, and reporting requirements and their compliance status as of June 19, 2015, the application submittal date. A compliance certification is enclosed in this section of the Title V Operating Permit 2093-RV-1 Renewal Application.

Permit Condition	Requirement	Compliance Status
Emission Limits		
3.2.1	Table of hourly and annual emission limits in pounds per hour and tons per year for emission unit 1.	<p>Deviation</p> <p>For the period of September 19, 2014 through June 19, 2015 there were two (2) exceedances of the NO_x pounds per hour emission limit in Condition 3.2.1.</p> <p>1) On October 16, 2014, Hour 16, while combusting fuel oil, a malfunction of the water injection system caused emissions to fluctuate. For this exceedance an excess emissions form was submitted to the Air Quality Program.</p> <p>2) On February 11, 2015, Hour 17, while combusting natural gas, during a startup hour an automatic on-line calibration reduced the number of minutes over which to average the hourly emissions. For this exceedance an excess emissions form was submitted to the Air Quality Program.</p>
Monitoring		
3.4.1.1	Emission unit number 1 is equipped with CEMS for monitoring NO _x emissions as required by 40 CFR 75. Each NO _x CEM for emission unit number 1 shall be used to demonstrate compliance with the 0.2 lb/MMBtu NO _x standard for "new gas burning equipment" in accordance with 20.11.67.20.A NMAC. This condition is pursuant to 20.11.42.12.C.(1).(a) NMAC.	In Compliance. NO _x emissions are monitored by CEMS following the requirements of 40 CFR 75.

IV. Monitoring, Recordkeeping, and Reporting Compliance Certification

Permit Condition	Requirement	Compliance Status
3.4.1.2	Emission unit number 1 is equipped with CEMS and shall be used to demonstrate compliance with the lb/hr NO _x emission limits in 3.2.1 in accordance with monitoring/reporting requirements of 40 CFR 75.	In Compliance. NO _x emissions are calculated using the NO _x CEMS and the requirements of 40 CFR 75.
3.4.1.3	The permittee shall demonstrate compliance with lb/hr CO emission limits by conducting periodic emission tests for CO in accordance with Condition 6 of PSD/Authority-to-Construct Permit #0694-M1-RV2. The emission tests shall be conducted in accordance with EPA Method 10 for CO contained in 40CFR60, Appendix A, and with the requirements of Subpart A, General Provisions, Sect. 60.8.	In Compliance. An initial CO stack test was completed showing compliance with CO emission limits. No further periodic testing has been required by the department.
3.4.1.4	The permittee shall demonstrate compliance with lb/hr total particulate matter (PM10) emission limit by conducting an initial performance test for total particulate matter (PM10) in accordance with Condition 6 of PSD/Authority-to-Construct Permit #0694-M1-RV2. The emission tests shall be conducted in accordance with EPA Methods 5 and 202 for total particulate matter (PM10) contained in 40CFR60, Appendix A, and with the requirements of Subpart A, General Provisions, Sect. 60.8.	Deviation No PM testing has been performed. PNM has submitted a revision to ATC Permit #0694-M1-RV2 and this Title V Operating Permit Renewal Application that proposes a revised methodology for determining compliance with PM10 emission limits. Once the permit is issued, PNM will monitor and report PM10 emission rates from Rio Bravo Generating Station based on type and amount of fuel combusted.
3.4.1.5	Emission unit number 1 shall comply with the requirements of the Federal Mandatory Greenhouse Gas Reporting Rule 40 CFR 98 Subpart A - General Provisions, and Subpart C – General Stationary Fuel Combustion Sources.	In Compliance. PNM complies with the reporting requirements for Federal Mandatory Greenhouse Gas Reporting.
3.4.1.6	Emission unit number 1 is equipped with CEMS for monitoring SO ₂ emissions as required by 40 CFR 75. Each SO ₂ CEM for emission unit number 1 shall be used to demonstrate compliance with the 0.34 lb/MMBtu SO ₂ standard for “new gas burning equipment” in accordance with 20.11.67.20.A NMAC. This condition is pursuant to 20.11.42.12.C.(1).(a).	Deviation No SO ₂ CEMS have been installed for monitoring SO ₂ emissions at RBGS. PNM has submitted a revision to ATC Permit #0694-M1-RV2 and this Title V Operating Permit Renewal Application that proposes emission unit number 1 be equipped with fuel flow a monitor which measures the fuel flow as required by 40 CFR Part 75. The flow recorded by the monitor shall be used to demonstrate compliance with the 0.34 lb/MMBtu SO ₂ standard for “oil burning equipment” found in 20.11.67.19 NMAC.

IV. Monitoring, Recordkeeping, and Reporting Compliance Certification

Permit Condition	Requirement	Compliance Status
3.4.1.7	Emission unit number 1 is equipped with CEMS and shall be used to demonstrate compliance with the lb/hr SO ₂ emission limits in 3.2.1 in accordance with monitoring/reporting requirements 40 CFR 75.11 (d) (2) and 40 CFR 75 Appendix D.	Deviation No SO ₂ CEMS have been installed for monitoring SO ₂ emissions at RBGS. PNM has submitted a revision to ATC Permit #0694-M1-RV2 and this Title V Operating Permit Renewal Application that proposes emission unit number 1 be equipped with fuel flow monitor which shall be used to demonstrate compliance with the lb/hr SO ₂ emission limits in 3.2.1 in accordance with monitoring/reporting requirements 40 CFR §75.11 (d)(2) and 40 CFR Part 75, Appendix D.
3.4.1.8	The permittee shall provide for the Department's approval a written test protocol at least thirty (30) days prior to the anticipated test date. The protocol shall describe the test methods to be used (including sampling methods and calibration procedures), shall list the equipment or devices to be tested (including sample locations), and shall describe data reduction procedures. Any variation from established sampling and analytical procedures or from facility operating conditions shall be presented for Department approval.	In Compliance. PNM will submit to the Department a written protocol at least 30 days prior to an anticipated test date. The protocol shall describe the test method(s) to be used, equipment or devices to be tested, and describe all data reduction procedures.
3.4.1.9	Monitor the amount of natural gas used on an hourly basis.	In Compliance. PNM monitors all hourly natural gas used.
3.4.1.10	Monitoring of visible emissions for emission unit number 1 shall be limited to 20 percent opacity, 6-minute timed average and when operated on fuel oil daily visible emissions readings shall be conducted utilizing 40 CFR 60 Appendix A, Method 9, or by other methods as approved by the Department.	Deviation. PNM performs daily visible emissions testing using 40 CFR Appendix A, Method 9 procedures when combusting #2 fuel oil. For the period of September 19, 2014 through June 19, 2015, there was one deviation (02/02/2015) of the visible determination of opacity while Unit 1 was combusting fuel oil during night time operations. PNM has submitted a revision to ATC Permit #0694-M1-RV2 and this Title V Operating Permit Renewal Application that proposes no daily opacity monitoring be required when conditions do not meet the Method 9 position criteria described in Section 2.1 of 40 CFR 60 Appendix A, Method 9.
3.4.1.11	Monitoring of visible emissions for emission unit number 1 shall be limited to 27 percent opacity, 6-minute timed average in any given 60-minute period and visible emissions readings shall be conducted utilizing 40 CFR 60 Appendix A, Method 9, or by other methods as approved by the Department.	Deviation PNM performs daily visible emissions testing using 40 CFR Appendix A, Method 9 procedures. PNM has submitted a revision to ATC Permit #0694-M1-RV2 and this Title V Operating Permit Renewal Application that proposes no daily opacity monitoring be required when conditions do not meet the Method 9 position criteria described in Section 2.1 of 40 CFR 60 Appendix A, Method 9.

IV. Monitoring, Recordkeeping, and Reporting Compliance Certification

Permit Condition	Requirement	Compliance Status
3.4.1.12	Monitor the monthly hours of operation for emission unit number 1 for each fuel.	In Compliance. PNM monitors the monthly hours of operation for emission unit number 1 when combusting natural gas or #2 fuel oil.
Recordkeeping		
4.1.1	Maintain and record the NO _x emissions for emission unit number 1 in accordance with 40 CFR 75.12 (c) and 40 CFR Appendix F.	In Compliance. PNM maintains and records the NO _x emission for emission unit number 1.
4.1.2	Maintain records of visible emissions monitoring on-site for emission unit number 1.	In Compliance PNM maintains all records of visible emissions monitoring for emission unit number 1.
4.1.3	Maintain and record the SO ₂ emissions for emission unit number 1 in accordance with 40 CFR 75.11 (d) (2) and 40 CFR 75 Appendix D.	In Compliance PNM maintains all records of fuel flow monitoring and sulfur content of fuel used for emission unit number 1 per 40 CFR Part 75 Appendix D.
4.1.4	Maintain all records relevant to the monitoring approved accordance with the Optional Emissions data Protocols in the Appendices D, F, and G of 40 CFR 75 (40 CFR 75, Subpart B).	In Compliance PNM has not submitted an Optional Emissions data Protocols. If PNM, in the future, submits an Optional Emissions data Protocols, they will maintains all records of Optional Emissions data Protocols in the Appendices D, F, and G of 40 CFR 75 (40 CFR 75, Subpart B).
4.1.5	Maintain and record the monthly operating hours for each type of fuel for emission unit number 1. These records shall also show the total hours of operation in any given 12-month period for each type of fuel.	In Compliance PNM maintains all records of operating hours for each fuel type for emission unit 1. These records also show the rolling 12 -month total hours of operations for each fuel type.
4.2	<p>All sampling and measured data required by this permit for the emissions units in this facility shall be recorded. The minimum information to be included in these records is:</p> <p>4.2.1 the date, place as defined in the permit, and time of sampling or measurements; 4.2.2 the date(s) analyses were performed; 4.2.3 the company or entity that performed the analyses; 4.2.4 the analytical techniques or methods used; 4.2.5 the results of such analyses; and 4.2.6 the operating conditions existing at the time of sampling or measurement.</p>	In Compliance PNM records all sampling and measured data following the procedures in Condition 4.2.

IV. Monitoring, Recordkeeping, and Reporting Compliance Certification

Permit Condition	Requirement	Compliance Status
4.3	The permittee shall keep copies of all monitoring and measurement data, equipment calibration and maintenance records, original strip charts for Continuous Emission Monitoring instruments if used, other supporting information, and reports required by this permit for at least five (5) years from the time the data was gathered or the reports written. Each record shall show clearly to which emissions unit and/or piece of monitoring equipment it applies, and the date the data was gathered. This condition is pursuant to 20.11.42.12.C.(4).(b) NMAC.	In Compliance PNM maintains copies of all monitoring and measurement data, equipment calibration and maintenance records, original strip charts for Continuous Emission Monitoring instruments if used, other supporting information, and reports required by this permit for at least five (5) years from the time the data was gathered or the report written.
4.4	The permittee shall keep a record describing off permit changes made at this source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under this permit, and the emissions resulting from those changes. This condition is pursuant to 20.11.42.12.C.(8).(b) NMAC.	In Compliance PNM maintains all records as defined in Condition 4.4.
Reporting		
5.1.1	Reports of monitoring of NO _x emissions for emission unit number 1 shall be expressed in lb/hr and as NO ₂ in lb/MMBtu based on the averaging times and rolling total specified by Conditions 3.2.1.1 and 3.2.1.2.	In Compliance PNM will expressed NO ₂ emission rates in lb/MMBtu based on the averaging times and rolling total specified by Conditions 3.2.1.1 and 3.2.1.2.
5.1.2	Reports of periodic CO emission tests shall summarize in tabular form the information required by 4.1.1.4.1.	In Compliance. An initial CO stack test report was submitted showing compliance with CO emission limits. No further periodic testing has been required by the department.
5.1.3	The permittee shall comply with any relevant reporting requirements under the provisions of the Acid Rain Program.	In Compliance. PNM operates under Acid Rain Permit AR2093-RV1. A renewal Acid Rain permit application is submitted with this application.
5.1.4	Opacity test results summary shall be reported in accordance with the Reporting Schedule in condition 5.2.	In Compliance. PNM reports all opacity test results per Condition 5.2.
5.1.5	Reports of monitoring monthly operating hours for emission unit number 1 for each type of fuel.	In Compliance. PNM reports all monthly operating hours for each fuel type for emission unit 1.
5.2	Monitoring activity reports for Conditions 5.1.1 through 5.1.5 will be submitted within 45 days following the end of every 6 month period following the date of permit issuance.	In Compliance. PNM submits all reports required under Conditions 5.1.1 through 5.1.5 every 6 months.
	The annual GHG report shall be submitted no later than March 31 of each calendar year for GHG emissions in the previous year.	In Compliance. PNM submits annual GHG emissions no later than March 31 of each calendar year.

IV. Monitoring, Recordkeeping, and Reporting Compliance Certification

Permit Condition	Requirement	Compliance Status
5.2.1.1	Report records of opacity readings for emission unit number 1.	In Compliance. PNM will report the results of all opacity tests performed on emission unit number 1.
5.2.2.1	Report monthly operating hours for emission unit number 1 for each type of fuel as required by Conditions 3.4.1.7 and 4.1.1.	In Compliance. PNM will report the monthly operating hours and type of fuel used for emission unit number 1.
5.3	The permittee shall submit reports of all deviations (including emergencies) from permit requirements to the Department when they occur. The permittee shall communicate initial notice of the deviation to the Department within twenty-four (24) hours of the start of the first business day following the start of the occurrence via telephone or facsimile. Within ten (10) calendar days of the start of the first business day following the start of the occurrence, written notice using the Excess Emissions Form (attached to this permit) shall be submitted to the Department. This condition is pursuant to 20.11.42.12.C.(5).(b) NMAC.	In Compliance PNM will submit reports of all deviations starting with a initial notice within 24 hours of the start of the first business day following the start of the occurrence, followed by a written notice on the Department's Excess Emission Forms within 10 calendar days of the start of the first business day following the start of the occurrence.
5.4	<p>The permittee shall submit reports of all excess emissions to the Department. The permittee shall report the excess emissions to the Department with written notice using the Excess Emission Reporting Form (attached to this permit). The permittee of a source having excess emissions shall report the following information to the Department:</p> <p>i. INITIAL REPORT: The permittee shall file an initial report, no later than the end of the next regular business day after the time of discovery of an excess emission pursuant to 20.11.49.15.A(1) NMAC;</p> <p>ii. FINAL REPORT: The permittee shall file a final report, no later than 10 days after the end of the excess emission. If the period of an excess emission extends beyond 10 days, the permittee shall submit the final report to the Department within 72 hours of the date and time the excess emission ceased. This condition is pursuant to 20.11.49.15.A(2) NMAC and 20.11.49.15.C NMAC; and,</p> <p>iii. ALTERNATIVE REPORTING: If the facility is subject to the reporting requirements of 40 CFR Parts, 60, 61, and 63 and the federal requirements duplicate the requirements of 20.11.49.15 NMAC, then the federal reporting requirements shall suffice. This condition is pursuant to 20.11.49.15.D NMAC.</p>	In Compliance PNM will submit all excess emissions on the Departments Excess Emission Reporting Forms. The report will consist of an Initial Report, Final Report, and an Alternative Report (if necessary).

IV. Monitoring, Recordkeeping, and Reporting Compliance Certification

CERTIFICATION OF COMPLIANCE WITH 20 NMAC 11.42

I, Richard Threet, hereby certify that the information and data submitted in this application package are as complete, true and accurate as possible, to the best of my personal knowledge and professional expertise and experience. Based on the information and belief formed after reasonable inquiry, PNM states that the Rio Bravo Generating Station will be operated in compliance with applicable requirements for which it is in compliance as of the date of submittal of this application.

In addition, PNM's Rio Bravo Generating Station will meet additional applicable requirements that become effective during the permit term in a timely manner or in such time as expressed in the schedule required by the applicable requirement. In the event that PNM should discover new information affecting the compliance status of the facility, PNM will make appropriate notifications and/or corrective actions.

Richard Threet

SIGNATURE

June 16, 2015

DATE

Richard Threet

PRINTED NAME

Plant Manager / Responsible
OFFICIAL

TITLE

V. Criteria Pollutant Emission Rate Calculations

Particulate Matter (TSP/PM10) Compliance Demonstration Method

As discussed in the October 10, 2014 ATC permit modification application supplemental, performance testing of the RBGS stack using EPA Reference Method 5 and 202 is technically infeasible. PNM understands that both EPA Region 6 and ABCAQD agree that the PM test cannot be performed at RBGS, because of the stack geometry and temperature. PNM has requested in the October 10, 2014 ATC permit modification application that the PM stack test requirement be replaced with alternative compliance demonstrations and monitoring requirements. Facility PM emissions will be continuously minimized by the work practice standards that PNM has proposed to be included in the permit. PNM is also proposing an alternative compliance demonstration approach that allows AQD staff to quantitatively verify compliance with the PM limits using several monitored parameters. The combination of work place practices and the alternative compliance approach described below is no less stringent than a one-time stack test because these activities will occur on an ongoing basis rather than a one-time event.

Section 3.1.3.3 -Stationary Gas Turbine Particulate Matter of EPAs AP-42 Document characterizes PM emissions as follows:

PM emissions from turbines primarily result from carryover of noncombustible trace constituents in the fuel. PM emissions are negligible with natural gas firing and marginally significant with distillate oil firing because of the low ash content. PM emissions can be classified as "filterable" or "condensable" PM. Filterable PM is that portion of the total PM that exists in the stack in either the solid or liquid state... Condensable PM is that portion of the total PM that exists as a gas in the stack but condenses in the cooler ambient air to form particulate matter. Condensable PM exists as a gas in the stack... Condensable PM is composed of organic and inorganic compounds and is generally considered to be all less than 1.0 micrometers in aerodynamic diameter.

The technique that PNM proposes to determine filterable and condensable PM to verify compliance is discussed in Attachment D, "*PM Calculation Approach for Rio Bravo Combustion Turbine*". The compliance demonstration approach will be used to demonstrate compliance with the lb/hr PM limits in Table 2(b) and the lb/MMBtu PM limit in Condition 2(k) of the Rio Bravo ATC permit #0694-MI-RV2. As discussed in Attachment D, the filterable PM components include; fuel oil ash, and total dissolved solids (TDS) in the water used to control NOx. The condensable PM components include both potential inorganic (SO₃)

V. Criteria Pollutant Emission Rate Calculations

and organic (unburned semi-volatile compounds) condensable PM that potentially is generated as products of the combustion process. However, because the amount of PM related to the ambient air used for combustion is so small the proposed compliance demonstration does not include a calculation for that component.

PNM will determine the PM emissions from the water injected for NO_x control while combusting oil by assuming that 100% of the TDS in the purified de-mineralized water becomes PM emissions. The water PM component will be calculated based on the measured water flow and TDS in the water. The TDS value of water used for NO_x control will be based on laboratory analysis every 6 months. The value used in the calculation will be the lab results or minimum laboratory detection limit if results are non-detect. The lb/hr and lb/MMBtu PM emissions from water will be calculated semi-annually by multiplying the semi-annual TDS results by the total water injected divided by the hours of operation on fuel oil (to calculate lb/hr) or #2 fuel oil heat input (to calculate lb/MMBtu) during the reporting period.

PNM will determine the PM emissions associated with fuel ash content data for each shipment of #2 fuel oil using ASTM-D482 or equivalent test method. Because natural gas contains no ash, this component is not relevant to natural gas operations. The lb/hr and lb/MMBtu PM emissions from fuel ash will be calculated semi-annually by multiplying the average #2 fuel oil ash content by the total oil usage divided by the hours of operation on fuel oil (to calculate lb/hr) or #2 fuel oil heat input (to calculate lb/MMBtu) during the reporting period.

PNM will calculate the inorganic condensable PM emissions related to sulfuric acid mist formation in the combustion process using the approach developed by EPRI and detailed in *"Estimating Total Sulfuric Acid Emissions from Stationary Power Plants."* EPRI, Palo Alto, CA: 2012, 1023790. PNM will calculate the inorganic condensable PM on a semi-annual basis and assume the calculated lb/hr and lb/MMBtu rates are representative of PM condensable emissions from this source during the reporting period. The sulfur content of the #2 fuel oil will be determined based on methods described in 40 CFR 75 for each shipment of #2 fuel oil. The Facility will assume the natural gas sulfur content is 1.5 grains S/1 00 scf (standard for pipeline quality gas). To calculate the semi-annual inorganic PM lb/hr rate, RBGS will use the average fuel sulfur content for each fuel times the EPRI H₂SO₄ conversion factor times the total fuel usage divided by the hours of operation on each fuel (to calculate lb/hr) or #2 fuel oil heat input (to calculate lb/MMBtu less the natural gas contribution) during the reporting period.

While PNM believes that the combustion process would produce minimal amounts of condensable organic PM components, PNM proposes to use the lb/hr VOC emissions measured during the initial performance test performed in the year 2000 as a surrogate for the organic PM component for the purposes of this approach. The lb/MMBtu rate will be calculated for #2 fuel oil by dividing the average lb/hr VOC by the average #2 fuel oil heat

V. Criteria Pollutant Emission Rate Calculations

input as determined during the initial stack test.

In addition to the approach described above, PNM also proposes to demonstrate compliance based on work practices, and Method 9 opacity measures when firing #2 fuel oil. Thus, PNM proposes to demonstrate compliance based on the following four measures:

1. Work Practice Standards:
 - a) Low Sulfur Fuel Oil: during oil operations, combust only low sulfur #2 fuel oil (less than 0.05% sulfur by weight) and maintain records of the sulfur content of each shipment of fuel oil delivery.
 - b) Pipeline Quality Natural Gas: during natural gas operations, combust only pipeline quality natural gas.
 - c) Hours of Operation: Monitoring and recordkeeping of the hours of operation on natural gas and fuel oil.
 - d) Good Air Pollution Control Practices: At all times facility shall, to the extent practicable, maintain and operate the affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions.
 - e) Periodic Tuning: The permittee shall perform maintenance and inspect equipment during planned outages and shall perform turbine tuning whenever major combustion components are replaced.

2. Method 9 Opacity Readings during Oil Operations: When firing #2 fuel oil in Unit 1, visible emissions from the stack shall be monitored daily, using 40 CFR 60, Appendix A, Method 9 and shall include two (2) six-minute observation periods. Daily opacity monitoring is not required when conditions do not meet the Method 9 position criteria described in Section 2.1 of 40 CFR 60 Appendix A Method 9 including the requirement that the qualified observer stand with the sun oriented in the 140° sector to his back. Daily Records of observations shall be maintained at the facility and made available to the Division upon request.

3. Semi-Annual Compliance Demonstration Based on monitoring data: Calculate the average TPM (total particulate emissions) semi-annually using the following formula:

Assume $TPM = TSP = PM_{10} = PM_{2.5}$ for compliance purposes.

$$TPM = F + W + S + O$$

F = PM formed from fuel ash; zero for natural gas, and based on the average fuel ash test data collected after each fuel oil delivery multiplied by the total #2 fuel oil

V. Criteria Pollutant Emission Rate Calculations

usage divided by the hours of operation on fuel oil (to calculate lb/hr) or heat input (to calculate lb/MMBtu) during the reporting period.

W = PM formed from components in water injected to control NO_x emissions when #2 fuel oil is fired; based on laboratory analysis every 6 month multiplied by the total water injected for NO_x control divided by the hours of operation on fuel oil (to calculate lb/hr) or #2 fuel oil heat input (to calculate lb/MMBtu) during the reporting period. The value used in the calculation will be the lab results or minimum laboratory detection limit if results of non-detect.

S = inorganic condensable PM (primarily sulfur compounds); based on the average sulfur content of each fuel converted to sulfuric acid mist using calculations prepared in accordance with Estimating Total Sulfuric Acid Emissions from Stationary Power Plant, 1023790 Technical Update, prepared by Fossil Energy Research Corporation, Laguna, CA, for Electric Power Research Institute, Palo Alto, California, March 2012 multiplied by the total #2 fuel oil and natural gas usage divided by the hours of operation on each fuel (to calculate lb/hr) or #2 fuel oil heat input (to calculate lb/MMBtu while subtracting out the natural gas contribution) during the reporting period

O = organic condensable PM (carbon-containing compounds); based on the July, 2000 DPGS Compliance Emission Testing report results in lb/hr and converted to lb/MMBtu for VOCs for each fuel

Each term of the above formula shall be calculated as follows when fired on natural gas to determine the semi-annual average TPM in (lb/hr).

1. F = 0
 - a. Natural gas contains no ash.
2. W = 0
 - a. NO_x control water injection not used when firing on natural gas.
3. $S = (Q_{\text{fuel}})(S_{\text{fuel}})(F1)(3.06 \text{ lb H}_2\text{SO}_4 / 1 \text{ lb S})$
 - a. $Q_{\text{fuel}} = \text{total natural gas usage} / \text{total hours of operation (scf/hr)}$
 - b. $S_{\text{fuel}} = \text{sulfur concentration of fuel} = (0.5 \text{ grains S}/100 \text{ scf})(1 \text{ lb} / 7,000 \text{ grains})$
 - c. F1 = fraction of sulfur in fuel converted to H₂SO₄ which can condense into PM = (0.0005)
 - d. (3.06 lb H₂SO₄ / 1 lb S), mass ratio for H₂SO₄ to sulfur
4. O = 5.23 (lb/hr)
 - a. 100% of VOC emissions from 2000 stack test when fired on natural gas.

V. Criteria Pollutant Emission Rate Calculations

Each term of the above formula shall be calculated as follows when fired on #2 fuel oil to determine the semi-annual average TPM in (lb/hr).

1. $F = (Q_{\text{fuel}})(A_{\text{fuel}})$
 - a. Q_{fuel} = total fuel oil usage / total hours of operation (lb/hr)
 - b. A_{fuel} = fuel ash concentration from fuel oil analysis (%)
2. $W = (Q_{\text{water}})(\text{TDS})$
 - a. Q_{water} = total water used for NOx control / total hours of operation (lb/hr)
 - b. TDS = total dissolved solids in NOx control water (ppm)
3. $S = (Q_{\text{fuel}})(S_{\text{fuel}})(F1)(3.06 \text{ lb H}_2\text{SO}_4 / 1 \text{ lb S})$
 - a. Q_{fuel} = total fuel oil usage / total hours of operation (lb oil/hr)
 - b. S_{fuel} = sulfur concentration of fuel from fuel oil analysis (ppm)
 - c. F1 = fraction of sulfur in fuel converted to H2SO4 which can condense into PM = (0.0005)
 - d. (3.06 lb H₂SO₄/ 1 lb S), mass ratio for H2SO4 to sulfur
4. $O = 4.77$ (lb/hr)
 - a. 100% of VOC emissions from 2000 stack test when fired on fuel oil.

Each term of the above formula shall be calculated as follows when fired on #2 fuel oil to determine the semi-annual average TPM in (lb/MMBtu).

1. $F = (Q_{\text{fuel}})(A_{\text{fuel}})$
 - a. Q_{fuel} = total fuel oil usage / total heat input (lb/MMBtu)
 - b. A_{fuel} = fuel ash concentration from fuel oil analysis (%)
2. $W = (Q_{\text{water}})(\text{TDS})$
 - a. Q_{water} = total water used for NOx control / total heat input (lb/MMBtu)
 - b. TDS = total dissolved solids in NOx control water (ppm)
3. $S = (Q_{\text{fuel}})(S_{\text{fuel}})(F1)(3.06 \text{ lb H}_2\text{SO}_4 / 1 \text{ lb S})$
 - a. Q_{fuel} = total fuel oil usage / total heat input (lb/MMBtu)
 - b. S_{fuel} = sulfur concentration of fuel from fuel oil analysis (ppm)
 - c. F1 = fraction of sulfur in fuel converted to H2SO4 which can condense into PM = (0.0005)
 - d. (3.06 lb H₂SO₄/ 1 lb S), mass ratio for H2SO4 to sulfur
4. $O = 0.0033$ (lb/MMBtu)
 - a. 100% of VOC emissions from 2000 stack test when fired on fuel oil.

The facility shall submit the TPM lb/hr and lb/MMBtu values in the semi-annual monitoring report as required.

Annual TPM will be calculated by multiplying the average of the semi-annual TPM values during the reporting period by the operating hours during the reporting period.

V. Criteria Pollutant Emission Rate Calculations

4. The facility shall monitor the following parameters used in the calculations:
 - i. Operational hours, hourly fuel usage and fuel type on a daily basis.
 - ii. Fuel oil ash content data for each shipment of #2 fuel oil using ASTM-D482 or equivalent test method.
 - iii. Fuel oil sulfur content data based on methods described in 40 CFR 75 for each shipment of #2 fuel oil.
 - iv. TDS value of water used for NO_x control based on laboratory analysis every 6 months, values used in the calculation will be lab results or minimum laboratory detection limit if results are non-detect.
 - v. Hourly water injection rate used during fuel oil combustion.

V. Criteria Pollutant Emission Rate Calculations

Particulate Matter (TSP/PM₁₀/PM_{2.5}) Emission Rates

Supporting documentation regarding TSP/PM₁₀ and PM_{2.5} are included in Attachment C and show by a preponderance of the evidence that the proposed emission limits are reasonable and supported by other permit decisions nationwide for GE7FA turbines. Table 1 below contains the emissions limits for TSP/PM₁₀ and PM_{2.5}. These emission rates were submitted with the last ATC Permit #0694-MI-RV2 revision application. PM_{2.5} is calculated conservatively using the approach in EPA Factors Information Retrieval System (FIRE) to establish the PM_{2.5} emission factor for fuel oil as 91% of the PM₁₀ emission factor.

Table 1: PM Emission Limits

Pollutant	Natural Gas		#2 Fuel Oil	
	Lbs/ Hr	TPY	Lbs/ Hr	TPY
PM (TSP/PM ₁₀)	9.0	32.9	34.0	24.5
PM _{2.5}	8.2	30.0	30.9	22.3

Tables 2 through 6 on the following pages contain detailed emissions calculations for NO_x, CO, VOC and SO₂. The basis for emissions calculations are provided and supporting documentation, such as vendor guarantees, are included in Attachment C to this permit application.

V. Criteria Pollutant Emission Rate Calculations

Table 2: Emission Unit 1 Heat Input Calculation

Vendor Emission Guarantees (from Vendor guarantee dated 8/7/98)					
Natural Gas Operation			Fuel Oil Operation		
15	NO _x	PPMV @ 15% O ₂	42	NO _x	PPMV @ 15% O ₂
15	CO	PPMV @ 15% O ₂	20	CO	PPMV @ 15% O ₂

Table 3: Emission Unit 1 Heat Input Calculation

Heat Input Calculation					
Heat rate (MMBtu/hr)=Heat rate(btu/kW-hr)*power(kW)/1,000,000					
Natural Gas Operation			Fuel Oil Operation		
Maximum net heat rate	11,088	btu/kWh	Maximum net heat rate	11,298	btu/kWh
Maximum power guarantee	136,380	kW	Maximum power guarantee	142,460	kW
Heat rate ^(a)	1512.2	MMBtu/hr	Heat rate ^(a)	1609.5	MMBtu/hr
Heat rate ^(b)	1582.1	MMBtu/hr	Heat rate ^(b)	1680.1	MMBtu/hr
Heat rate ^(c)	1696	MMBtu/hr	Heat rate ^(c)	1644	MMBtu/hr
<p>^(a) Heat rate calculated as worst case by assuming highest heat rate (btu/kW-hr) and highest power guarantees (kW) from Zachary vendor guarantee dated 8/7/98.</p> <p>^(b) Heat rates for GE7FA (PG7241) from Dames and Moore fax dated 05/28/1998. (Used for calculations)</p> <p>^(c) Heat rates as indicated by Statement of Basis for Permit #894-M1-RV1, dated 6/20/2011</p> <p>(No basis found as related to GE PG7241 (7FA))</p>					

V. Criteria Pollutant Emission Rate Calculations

Table 4: Emission Unit 1 NO_x and CO Emission Rate Calculation

Emission Rate Calculation					
Natural Gas Operation			Fuel Oil Operation		
Molecular Weight, NO _x :	46.01	lb/lb-mol	Molecular Weight, NO _x :	46.01	lb/lb-mol
Molecular Weight, CO:	28	lb/lb-mol	Molecular Weight, CO:	28	lb/lb-mol
Emission Factor (E _f) = (Molecular Weight / 385.15 } * 10 ⁻⁶					
Emission Factor (E _f), NO _x :	1.19E-07	lb/DSCF	Emission Factor (E _f), NO _x :	1.19E-07	lb/DSCF
Emission Factor (E _f), CO:	7.27E-08	lb/DSCF	Emission Factor (E _f), CO:	7.27E-08	lb/DSCF
Assumed O ₂ Concentration:	15.0	% vol	Assumed O ₂ Concentration:	15.0	% vol
O ₂ F-Factor:	8710	DSCF/MMBtu	O ₂ F-Factor:	9190	DSCF/MMBtu
Emission rate (lb/MMBtu) = C _{ppm} * O ₂ F-Factor (DSCF/MMBtu) * E _f * 20.9 / (20.9 - O ₂ %)					
Emission Rate, NO _x :	5.53E-02	lb/MMBtu	Emission Rate, NO _x :	1.63E-01	lb/MMBtu
Emission Rate, CO:	3.36E-02	lb/MMBtu	Emission Rate, CO:	4.73E-02	lb/MMBtu
(d) From "Procedures For Preparing Emission factor Documents", EPA-454/R-95-015, Section 2.4.1					

Table 5: Emission Unit 1 SO₂ Emission Rate Calculation

SO ₂ Emission Rate Calculation					
Natural Gas Operation			Fuel Oil Operation		
SO ₂ Rate (lb/MMBtu) = (2.0 / 7000) * (10 ⁶ * (S _{tot} / GCV) ^(e)			SO ₂ Rate (lb/MMBtu) = 1.01 * S ^(f)		
S _{tot} :	0.5	grains /100 scf	S (% sulfur content of fuel)	0.05	low sulfur fuel oil
GCV:	102,000	Btu/100 SCF	Emission Rate, SO ₂ :	5.05E-02	lb/MMBtu
Emission Rate, SO ₂ :	1.40E-03	lb/MMBtu			
(e) From EPA Part 75, Appendix D, equation D-1H					
(f) AP-42 Table 3.1-2a					

V. Criteria Pollutant Emission Rate Calculations

Table 6: Emission Unit 1 NO_x, CO, VOC, and SO₂ Emission Rate Summary

NO _x , CO, VOC, SO ₂ Emission Rate Summary					
Natural Gas Operation			Fuel Oil Operation		
Mass Rate (lb/hr) = Emission Rate (lb/MMBtu) * Firing Rate (MMBtu/hr)					
Hourly rate (NO _x):	87.5	lb/hr ^(g)	Hourly rate (NO _x):	288.1	lb/hr ^{(g)(h)}
Hourly rate (CO):	106.5	lb/hr ^{(g)(i)}	Hourly rate (CO):	159	lb/hr ^{(g)(l)}
Hourly rate (VOC):	6	lb/hr ^(g)	Hourly rate (VOC):	17	lb/hr ^(g)
Hourly rate (SO ₂):	2.2	lb/hr ^(g)	Hourly rate (SO ₂):	84.8	lb/hr ^(g)
Mass Rate (tons/year) = Mass rate (lb/hr) * (Hours of operation/year)/ 2000 (lb/ton)					
Annual rate (NO _x):	320.1	tons/year ^{(j)(L)}	Annual rate (NO _x):	207.5	tons/year ^{(k)(L)}
Annual rate (CO):	389.7	tons/year ^{(j)(L)}	Annual rate (CO):	114.5	tons/year ^{(k)(L)}
Annual rate (VOC):	22	tons/year ^{(j)(L)}	Annual rate (VOC):	12	tons/year ^{(k)(L)}
Annual rate (SO ₂):	8.1	tons/year ^{(j)(L)}	Annual rate (SO ₂):	61.1	tons/year ^{(k)(L)}
^(g) Requested as a 24-hr average emission rate. ^(h) NO _x rate for fuel oil includes a 5% safety factor. ⁽ⁱ⁾ CO rate includes a 100% safety factor. ^(j) Based on 7320 hours per year. ^(k) Based on 1440 hours per year. ^(L) Requested as a 12 month rolling average rate.			Annual mass rate totals		
			NOx	527.6	tons/year
			CO	504.2	tons/year
			VOC	34	tons/year
			SO ₂	69.2	tons/year

RBGS's Unit 1 is applicable to the NO_x emission limits found in 40 CFR Part 60 Subpart GG. NO_x emission rate calculations per 40 CFR 60.332(a)(1) can be found in Table 7 below.

V. Criteria Pollutant Emission Rate Calculations

Table 7: Emission Unit 1 NSPS Subpart GG NO_x Emission Rate Summary

<p>Natural Gas NSPS Subpart GG NO_x Standard calculated as provided in 40CFR60.332(a)(1):</p>			
	$\text{STD} = \frac{0.0075 \times 14.4 + F}{Y}$		$1 \text{ Btu} = 1.0551 \text{ kJ}$
	where:		
	STD = allowable ISO corrected NO _x emission concentration (percent by volume at 15 percent oxygen and on a dry basis),		
	Y = manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour, and		
	F = NO _x emission allowance for fuel-bound nitrogen. For natural gas, F = 0. For fuel oil, F = 0 (no fuel bound nitrogen credit)		
	HHV	LHV	
Natural Gas (Btu)	22,453	20,267	0.90 Ratio of natural gas lower fuel heating value to higher heating value
Fuel Oil (Btu)	19,594	18,320	0.93 Ratio of fuel oil lower fuel heating value to higher heating value
* HHV and LHV values from Department of Energy, Energy Efficiency and Renewable Energy			
<p>Natural Gas - Calculation Using Data from Manufacturer's Specifications for GE PG7241 (FA) at Base Load</p>			
	Design heat rate (Btu/kWh)	10,320	HHV for natural gas from manufacturer's specifications for GE PG7241 (FA) at base load
	Calculated LHV (Btu/kWh)	9,315	0.90 ratio to determine low heating value
	conversion to kioules/kWh	9.829	Design heat rate BTU/kWh • 1.0551 joules/BTU • 1 kioules/1000 joules
	NO _x %v@15%O ₂ , dry basis	0.0110	STD = 0.0075' (14.4/9.829)+0
	NO_x ppmvd@15%O₂	109.9	Natural Gas
<p>Fuel Oil - Calculation Using Data from Manufactures Specifications for GE PG7241 (FA) at Base Load</p>			
	Design heat rate (Btu/kWh)	10,640	HHV for fuel oil from manufacturer's specifications for GE PG7241 (FA) at base load
	Calculated LHV (Btu/kWh)	9,948	0.93 ratio to determine low heating value
	conversion to kioules/kWh	10.496	Design heat rate BTU/kWh • 1.0551 joules/BTU • 1 kioules/1000 joules
	NO _x %v@15%O ₂ , dry basis	0.0103	STD = 0.0075' (14.4/10.496)+0
	NO_x ppmvd@15%O₂	102.9	Fuel Oil

VI. Greenhouse Gas (GHG) Potential Emission Rate Calculations

VI. Greenhouse Gas (GHG) Potential Emission Rate Calculations

Table 8: Greenhouse Gas Emission Calculations

Greenhouse Gas Potential Emission Rate (From 40CFR98, Subparts A,C, & D and 40CFR75, Appendix G)									
Natural Gas Operation		Fuel Oil Operation							
1040	F _c (scf/MMBtu) (F-Factor)	1420	F _c (scf/MMBtu) (F-Factor)						
1582.1	H (MMBtu/hr)(from Vendor Guarantee)	1680.1	H (MMBtu/hr)(from Vendor Guarantee)						
0.026	U _f (scf CO ₂ /lb-mole @ 14.7 psia & 68°F	0.0026	U _f (scf CO ₂ /lb-mole @ 14.7 psia & 68°F						
7320	hr/year (as permitted)	1440	hr/year (as permitted)						
44	MW _{CO2} (lb/lb-mole CO ₂) ^(a)	44	MW _{CO2} (lb/lb-mole CO ₂) ^(a)						
	W _{CO2} = (F _c *H* U _f *MW _{CO2}) / 2000 ^(a)		W _{CO2} = (F _c *H* U _f *MW _{CO2}) / 2000 ^(a)						
94	Mass Rate, CO ₂ (tons/hr)	136.3	Mass Rate, CO ₂ (tons/hr)						
1.00E-03	EF _{CH4} (kg/MMBtu)	3.00E-03	EF _{CH4} (kg/MMBtu)						
1.00E-04	EF _{N2O} (kg/MMBtu)	6.00E-04	EF _{N2O} (kg/MMBtu)						
$W_{CH4\ or\ N2O} = 1E-03 * HHV * EF * Fuel * Hours$ ^(b)									
11.6	W _{CH4} (tonnes/year)	7.3	W _{CH4} (tonnes/year)						
1.2	W _{N2O} (tonnes/year)	1.5	W _{N2O} (tonnes/year)						
21	GWP _{CH4}	21	GWP _{CH4}						
310	GWP _{N2O}	310	GWP _{N2O}						
$CO_2-e = W * GWP$ ^(c)									
243.2	CO ₂ -e (tonnes, CH ₄)	152.4	CO ₂ -e (tonnes, CH ₄)						
359	CO ₂ -e (tonnes, N ₂ O)	450	CO ₂ -e (tonnes, N ₂ O)						
$Mass\ Rate\ (tons/year) = Mass\ Rate\ (tons/hr) * hrs/year$									
688,240.6	Mass Rate, CO ₂ (tons/year)	196,312.5	Mass Rate, CO ₂ (tons/year)						
$Mass\ Rate\ (tons/year) = Mass\ Rate\ (tonnes/hr) * 1.1023\ tons/tonnes$									
268.1	Mass Rate, CH ₄ CO ₂ -e (tons/year)	168	Mass Rate, CH ₄ CO ₂ -e (tons/year)						
395.7	Mass Rate, N ₂ O CO ₂ -e (tons/year)	496	Mass Rate, N ₂ O CO ₂ -e (tons/year)						
688,904.4	Mass Rate, GHG (tons/year)	196,976.5	Mass Rate, GHG (tons/year)						
624,970.0	Mass Rate, GHG (tonnes/year)	178,695.9	Mass Rate, GHG (tonnes/year)						
<table border="1" style="margin: auto;"> <tr> <td colspan="2">Total GHG Potential Emission Rate</td> </tr> <tr> <td>803,665.9</td> <td>tonnes/year (metric tons)</td> </tr> <tr> <td>885,881.0</td> <td>tons/year (short tons)</td> </tr> </table>				Total GHG Potential Emission Rate		803,665.9	tonnes/year (metric tons)	885,881.0	tons/year (short tons)
Total GHG Potential Emission Rate									
803,665.9	tonnes/year (metric tons)								
885,881.0	tons/year (short tons)								
^(a) From 40 CFR 98, Subpart D which refers to 40 CFR part 75, Appendix G, Equation G-4									
^(b) From 40 CFR 98, Subpart C, Equation C-8									
^(c) From 40 CFR 98, Subpart A, Equation A-1									

VII. Hazardous Air Pollutants (HAPS) Potential Emission Rate Calculations

VII. Hazardous Air Pollutants (HAPS) Potential Emission Rate Calculations

Table 9: HAPS Emission Calculations – Natural GAS

Natural Gas Operation			
Hazardous Air Pollutants Potential Emission Rate			
Emission Factors - Uncontrolled (Values from AP-42 Table 3.1-3)			
Pollutant	Emission Factor (lb/MMBtu)	Potential Emission Rate (lb/hr)	Potential Emission Rate (tons per year)
1,3-Butadiene	<4.3E-07	0.001	0.002
Acetaldehyde	4.00E-05	0.063	0.232
Acrolein	6.40E-06	0.01	0.037
Benzene	1.20E-05	0.019	0.069
Ethylbenzene	3.20E-05	0.051	0.185
Formaldehyde	7.10E-04	1.123	4.111
Napthalene	1.30E-06	0.002	0.008
PAH	2.20E-06	0.003	0.013
Propylene Oxide	<2.9E-05	0.046	0.168
Toluene	1.30E-04	0.206	0.753
Xylenes	6.40E-05	0.101	0.371
Potential Emission Rate		1.625 lb/hr	5.949 tpy
Assumptions			
1582	MMBtu/hr (firing rate)		
7320	yearly hours of operation limit		

VII. Hazardous Air Pollutants (HAPS) Potential Emission Rate Calculations

Table 10: HAPS Emission Calculations – Fuel Oil

Fuel Oil Operation			
Hazardous Air Pollutants Potential Emission Rate			
Emission Factors - Uncontrolled (Values from AP-42 Table 3.1-4)			
Pollutant	Emission Factor (lb/MMBtu)	Potential Emission Rate (lb/hr)	Potential Emission Rate (tons per year)
1,3-Butadiene	<1.6E-05	0.027	0.019
Benzene	5.50E-05	0.092	0.067
Formaldehyde	2.80E-04	0.47	0.339
Napthalene	3.50E-05	0.059	0.042
PAH	4.00E-05	0.067	0.048
Potential Emission Rate		0.716 lb/hr	0.515 tpy
Metallic Hazardous Air Pollutants Potential Emission Rate			
Emission Factors - Uncontrolled (Values from AP-42 Table 3.1-5)			
Pollutant	Emission Factor (lb/MMBtu)	Potential Emission Rate (lb/hr)	Potential Emission Rate (tons per year)
Arsenic	<1.1E-05	0.018	0.013
Beryllium	<3.1E-07	0.001	0
Cadmium	4.80E-06	0.008	0.006
Chromium	1.10E-05	0.018	0.013
Lead	1.40E-05	0.024	0.017
Manganese	7.90E-04	1.327	0.956
Mercury	1.20E-06	0.002	0.001
Nickel	<4.6E-06	0.008	0.006
Selenium	<2.5E-05	0.042	0.03
Potential Emission Rate		1.448 lb/hr	1.042 tpy
Total Potential Emission Rate		2.164 lb/hr	1.558 tpy
Assumptions			
1680	MMBtu/hr (firing rate)		
1440	yearly hours of operation limit		

VII. Hazardous Air Pollutants (HAPS) Potential Emission Rate Calculations

Table 11: Total HAPS Emission Summary

Hazardous Air Pollutants Potential Emission Rate		
Fuel	E_{hr} (lb/hr)	E_{annual} (tons/year)
Natural Gas	1.63 lb/hr	5.95 tons/year
Fuel Oil	2.16 lb/hr	1.56 tons/year
HAP Potential Emission Rate	3.79 lb/hr	7.51 tons/year
Hazardous Air Pollutants		
Example Calculations		
$\text{Mass Rate (lb/hr)} = \text{Emission Rate (lb/MMBtu)} * \text{Firing Rate (MMBtu/hr)}$		
$\text{Benzene (NG) (lb/hr)} = 1.2\text{E-}05 \text{ (lb/MMBtu)} * 1582 \text{ (MMBtu/hr)}$		
$\text{Benzene (NG)} = 0.019 \text{ lb/hr}$		
$\text{Mass Rate (tons/year)} = \text{Mass rate (lb/hr)} * (\text{Hours of operation/year}) / 2000 \text{ (lb/ton)}$		
$\text{Benzene (NG) (tons/year)} = 0.019 \text{ (lb/hr)} * 7320 \text{ (hrs/year)} / 2000 \text{ (lb/ton)}$		
$\text{Benzene (NG)} = 0.069 \text{ tons/year}$		

VIII. Startup, Shutdown, and Maintenance Emissions

VIII. Startup, Shutdown, and Maintenance Emissions

No startup, shutdown, and maintenance (SSM) emission limits have been requested for PNM's Rio Bravo Generating Station. All SSM activities occur while control devices are in operation and are not expected to create any emission limit deviations specified in the current ATC Permit #0694-M1-RV2.

PNM's Rio Bravo Generating Station minimizes emissions during startup, shutdown, and emergency upset & breakdown conditions by utilizing the following guidelines:

1. Design considerations; all systems at the Rio Bravo Generating Station have been designed and constructed to meet established industry and equipment manufacturer design standards and practices.
2. Preventative Maintenance; Rio Bravo Generating Station has a preventative maintenance program in place. This program includes all systems that can potentially contribute to excessive emissions during startup, shutdown, and emergency conditions. Preventative maintenance programs are also intended to minimize conditions that could potentially lead to excessive startup time in an excessive number of startups, shutdowns, or malfunctions.
3. Improper Operations; Startup, shutdown, and emergency conditions resulting from improper or careless operations are minimized through job experience requirements and training programs that meet or exceed generally established industry programs.
4. Startup and Shutdown Operation; startup and shutdown procedures will follow equipment manufacturer specified procedures and PNM guidelines.

IX. Fee Pollutants

IX. Fee Information

Fee pollutants are shown in the following table:

Table 12: Fee Pollutants

Fee Pollutant	Total in Tons per Year (TPY)
Carbon Monoxide (CO)	504
Nitrogen Oxides (NOX)	528
Particulate Matter (PM)	57
Sulfur Dioxide (SO ₂)	69
Volatile Organic Compounds (VOC)	34
Facility-Wide Fee Pollutant Totals (TPY)	1,192

X. Operational Plan to Mitigate Emissions

X. Operational Plan to Mitigate Emissions

PNM minimizes emissions during startup, shutdown, and emergency upset & breakdown conditions by utilizing the following guidelines:

1. Design considerations; all systems at the Rio Bravo Generating Station have been designed and constructed to meet established industry design standards and practices.
2. Preventative Maintenance; PNM has a preventive maintenance program in place. This program includes all systems that can potentially contribute to excessive emissions during startup, shutdown, an emergency conditions. Preventative maintenance programs are also intended to minimize conditions that could potentially lead to excessive startup times or an excessive number of startups, shutdowns, or malfunctions.
3. Improper Operation; Startup, shutdown, and emergency conditions resulting from improper or careless operation are minimized through job experience requirements and training programs that meet or exceed generally established industry practices.
4. Startup and Shutdown Operation; startup and shutdown procedures will not depart from normal operating conditions as specified by the equipment manufacturer.

During periods of excess emissions caused by emergency upsets or breakdown conditions, PNM will perform the following actions:

1. Minimization; PNM will make the maximum reasonable effort to minimize the magnitude and duration of excess emissions. This effort may include, but is not limited to, depending on the nature of the cause, use of off-shift and /or over-time labor and use of contract labor and contractors.
2. Causes; determine, to the extent possible, the cause(s) and corrective measure(s) of the condition resulting in the excess emissions.
3. Notification; notify the City of Albuquerque/Bernalillo County Air Quality Program of all periods of excess emissions per the notification requirements of 20.11.49.15 NMAC.

XI. Facility Plot Plan

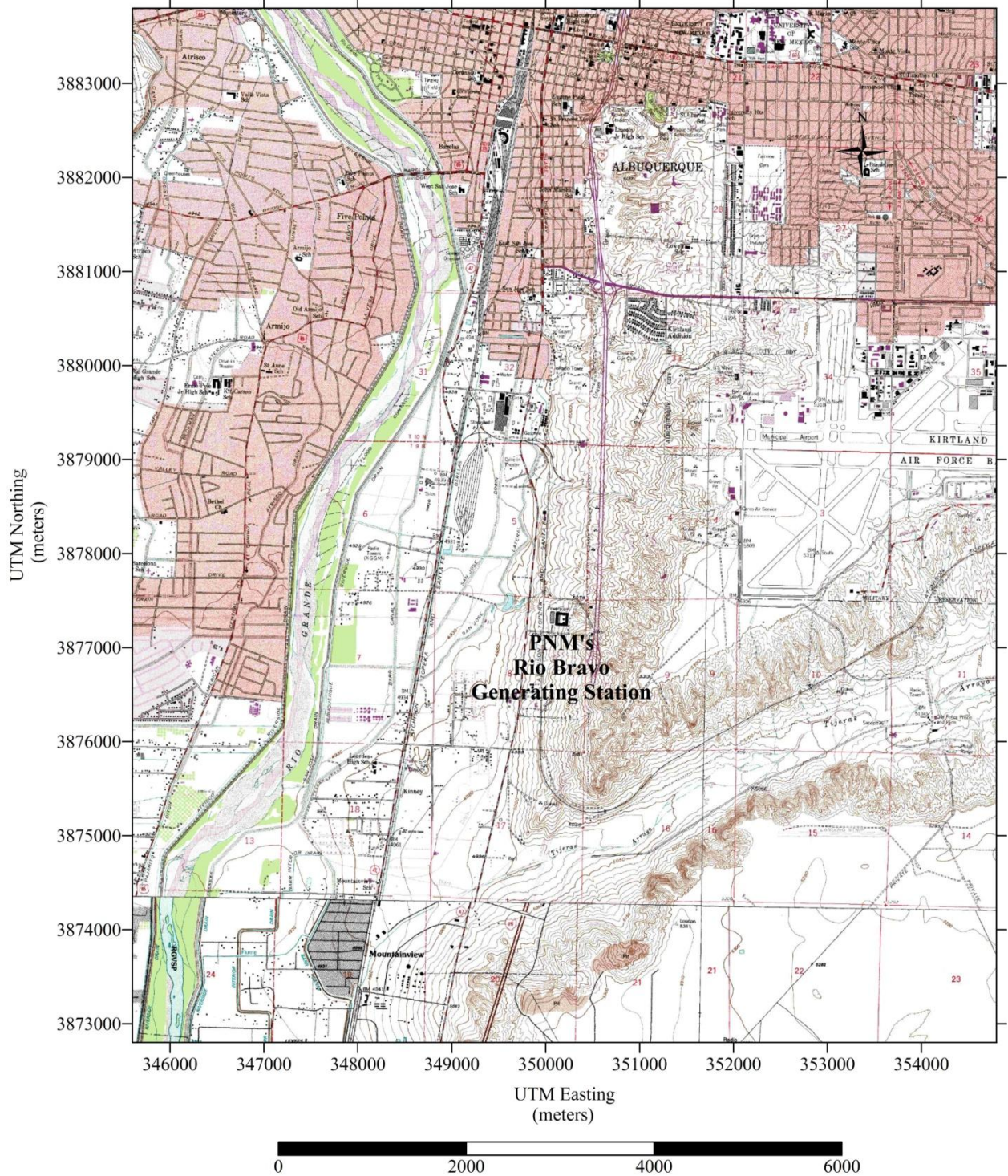


Figure 1: Topographical Map Showing Location of PNM's Rio Bravo Generating Station

XI. Facility Plot Plan

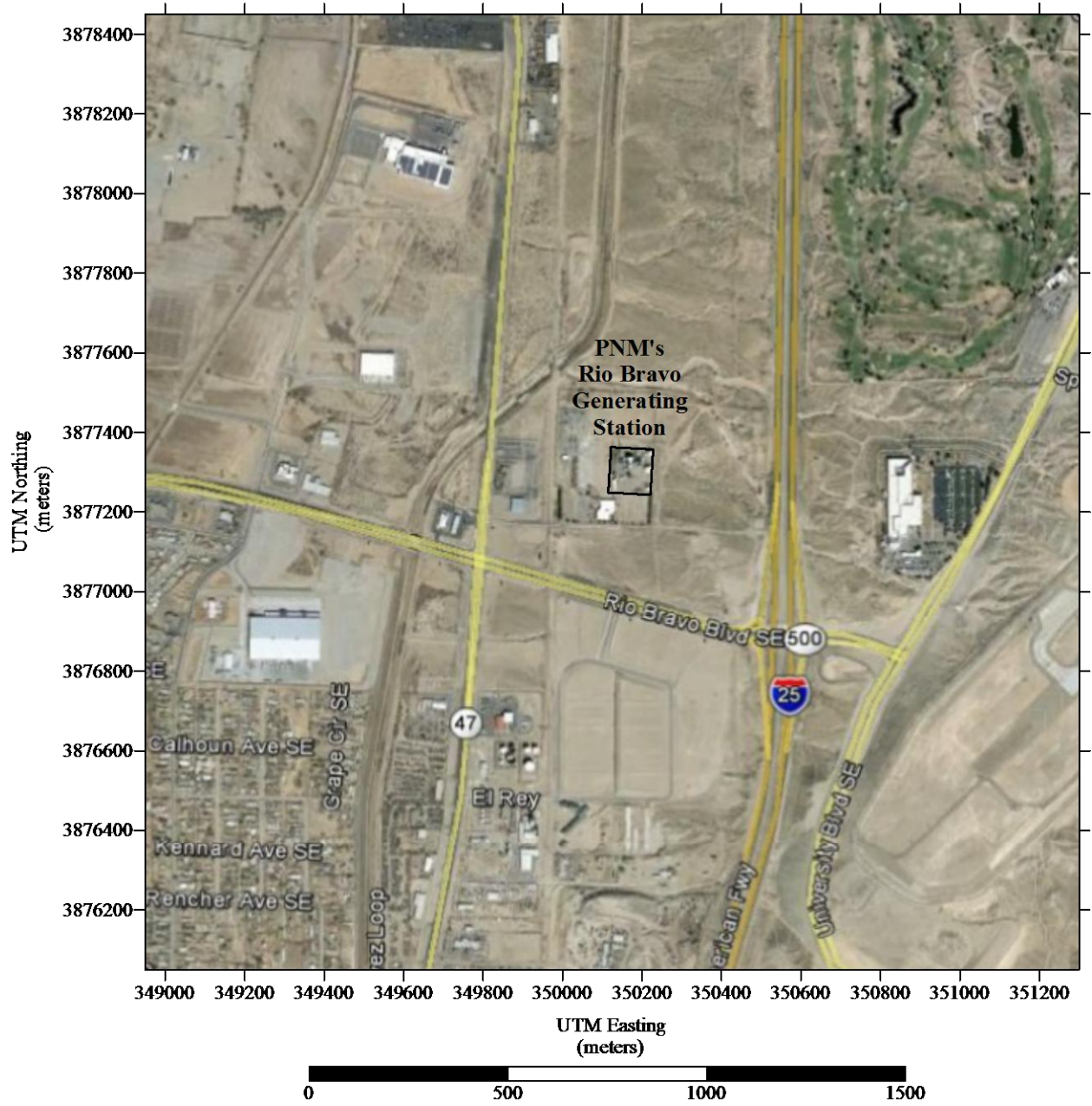


Figure 2: Aerial View Showing Location of PNM's Rio Bravo Generating Station

XI. Facility Plot Plan

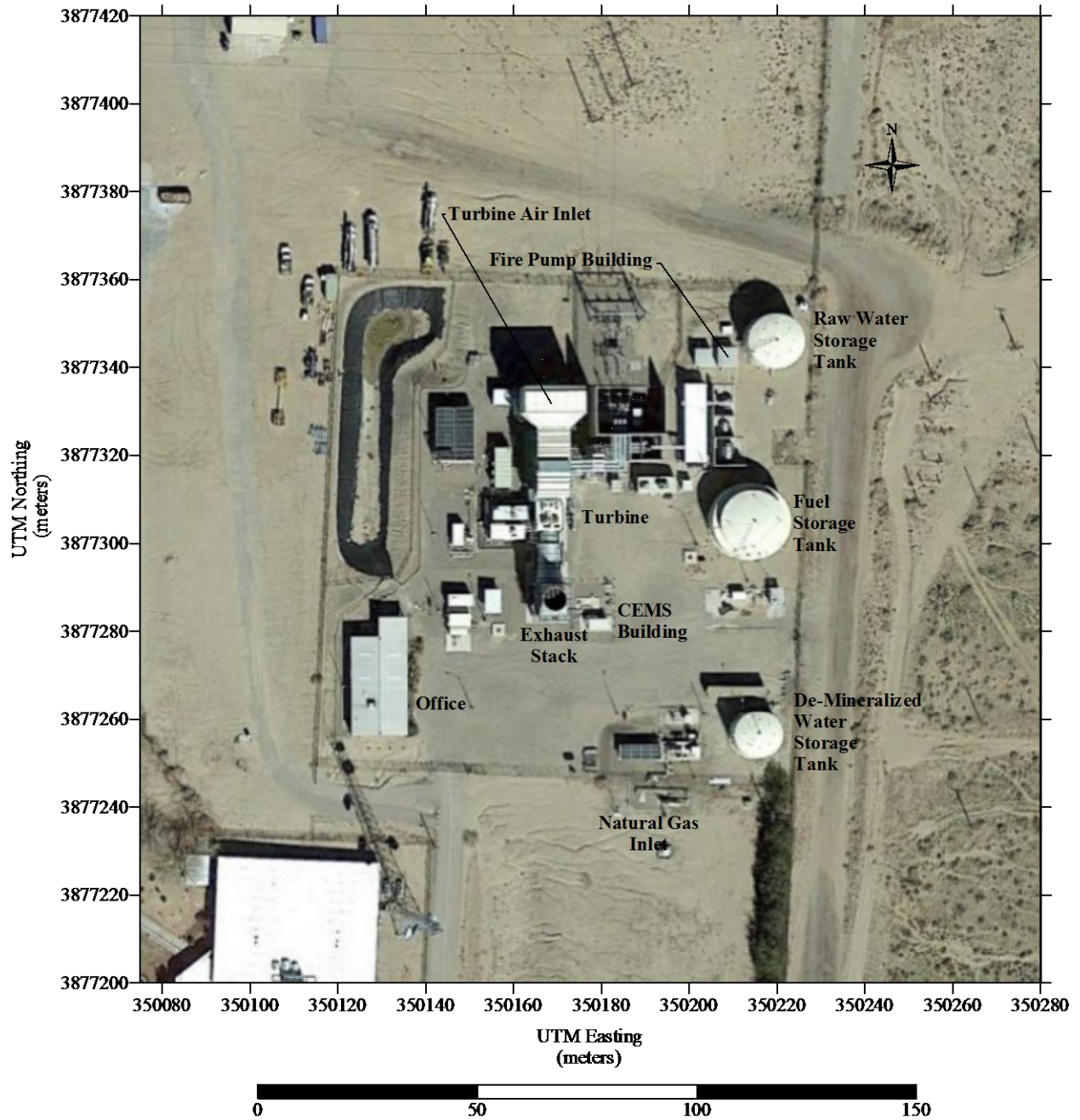
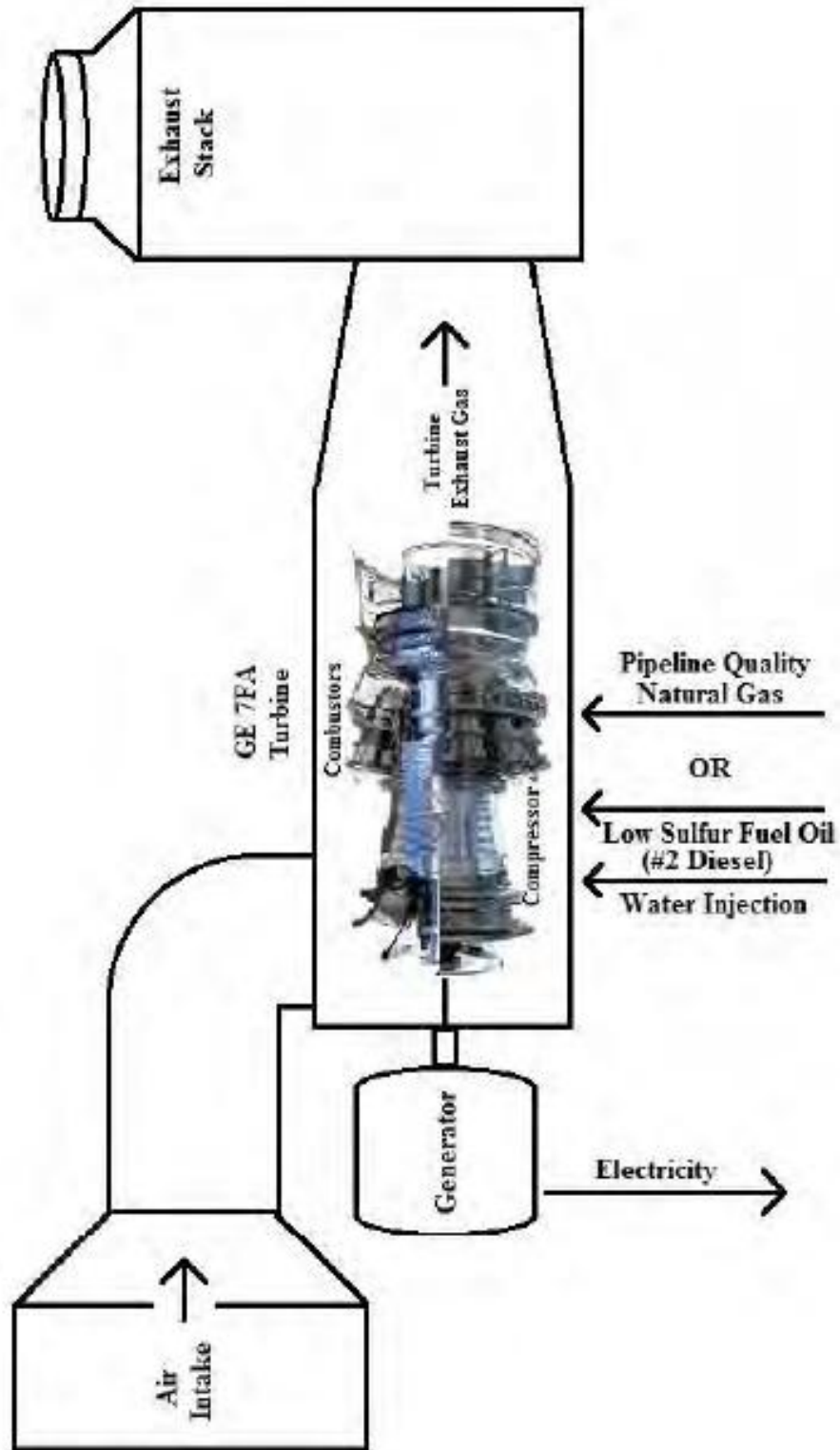


Figure 3: Aerial View Showing Equipment Layout of PNM's Rio Bravo Generating Station

XII. Process Flow Diagram



XIII. Alternative Operating Scenarios

XIII. Alternative Operating Scenarios

PNM's Rio Bravo Generating Station operates only in the manner described in their current operating permit and does not have alternative operating scenarios.

XIV. Dispersion Modeling

XIV. Dispersion Modeling Analysis

In 1998, DPGS was modeled for NO_x, CO, and SO₂ using the then EPA-approved ISCST3 air dispersion model. The facility was modeled alone and then the proposed source impacts added to the background to provide a total concentration which was compared to the NAAQS and NMAAQS. Results of the modeling analysis demonstrated that modeled impacts from the facility did not cause or contribute to a violation of any applicable NAAQS or NMAAQS for NO_x, CO, or SO₂.

In October 2013, modeling was conducted, using the most recent version of the EPA-approved air dispersion model AERMOD, to demonstrate compliance for the NO_x, CO, and SO₂ standards. Since the facility was previously modeled, the EPA promulgated 1-hour SO₂ standard, which has now been included in the analysis. The facility was modeled alone and then its impacts added to the background to provide a total concentration which was compared to the NAAQS and NMAAQS. Results of the modeling analysis demonstrate that modeled impacts from the facility did not cause or contribute to a violation of any applicable NAAQS or NMAAQS for NO_x, CO, and SO₂.

XV. Proposed Exemptions

XV. Proposed Exemptions

PNM's Rio Bravo Generating Station is not operating under or proposing any exemptions with this application.

XVI. Insignificant Activities

XVI. Insignificant Activities

PNM's Rio Bravo Generating Station has identified the following emission sources as insignificant activities pursuant to the Albuquerque Environmental Health Department, Air Quality Program's List of Insignificant Activities, revised January 3, 1996.

Insignificant Activity	Pollutant /Parameter	Insignificant Activity Citation
Diesel-fired Fire Pump	NO _x , CO, VOC, PM ₁₀ , PM _{2.5} < 1 TPY	II. A. 1. & 7.
Aboveground Fuel Oil Storage Tank	Vapor pressure < 3.5 kPa, VOC < 1 TPY	II. A. 1.

This section includes the emission rate calculations for the diesel-fired fire pump and the aboveground fuel oil storage tank. The diesel-fired fire pump emission rate calculations for NO_x, CO, VOC, and PM (PM₁₀ and PM_{2.5}) were submitted to the air quality program as part of the application for an Emergency Diesel Engine. Storage tank VOC emission rate calculations were determined using EPA's TANKs 4.0.9d.

Diesel-fired Fire Pump Information

Process Equipment Unit	Manufacturer	Model Number	Serial Number	Manufacturer Date	Engine Size In Horsepower (HP)
Engine	Cummins	6BTA5.9-F2	45877044	07/28/99	110
Pump	ITT	8100	88-030706-07-01	1999	

Diesel-fired Fire Pump Emission Calculations

Pollutant	Emission Factor (g/HP-Hr)	Engine HP	Pounds/Hr	Annual Operating Hours	Tons/Yr
NO _x	5.75	110	1.39	200	0.14
CO	2.11	110	0.51	200	0.05
NMHC	1.56	110	0.38	200	0.04
SO _x	0.63	110	0.15	200	0.02
PM	0.25	110	0.06	200	0.006

XVI. Insignificant Activities

TANKS 4.0.9d Emissions Report - Detail Format Tank Identification and Physical Characteristics

Identification

User Identification:	RBGS #1
City:	Albuquerque
State:	New Mexico
Company:	PNM
Type of Tank:	Vertical Fixed Roof Tank
Description:	PNM's RBGS #2 Fuel Oil Tank

Tank Dimensions

Shell Height (ft):	32.00
Diameter (ft):	48.00
Liquid Height (ft) :	30.50
Avg. Liquid Height (ft):	28.00
Volume (gallons):	420,000.00
Turnovers:	41.44
Net Throughput(gal/yr):	17,405,424.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	1.50
Radius (ft) (Dome Roof)	48.00

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meteorological Data used in Emissions Calculations: Albuquerque, New Mexico (Avg Atmospheric Pressure = 12.15 psia)

XVI. Insignificant Activities

TANKS 4.0.9d Emissions Report - Detail Format Liquid Contents of Storage Tank

RBGS #1 - Vertical Fixed Roof Tank Albuquerque, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Distillate fuel oil no. 2	All	58.54	51.41	65.66	56.17	0.0062	0.0048	0.0079	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0065

XVI. Insignificant Activities

TANKS 4.0.9d Emissions Report - Detail Format Detail Calculations (AP-42)

RBGS #1 - Vertical Fixed Roof Tank Albuquerque, New Mexico

Annual Emission Calculations

Standing Losses (lb):	22.8831
Vapor Space Volume (cu ft):	8,597.1646
Vapor Density (lb/cu ft):	0.0001
Vapor Space Expansion Factor:	0.0503
Vented Vapor Saturation Factor:	0.9984

Tank Vapor Space Volume:

Vapor Space Volume (cu ft):	8,597.1646
Tank Diameter (ft):	48.0000
Vapor Space Outage (ft):	4.7510
Tank Shell Height (ft):	32.0000
Average Liquid Height (ft):	28.0000
Roof Outage (ft):	0.7510

Roof Outage (Dome Roof)

Roof Outage (ft):	0.7510
Dome Radius (ft):	48.0000
Shell Radius (ft):	24.0000

Vapor Density

Vapor Density (lb/cu ft):	0.0001
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0062
Daily Avg. Liquid Surface Temp. (deg. R):	518.2062
Daily Average Ambient Temp. (deg. F):	56.1542
Ideal Gas Constant R (psia cu ft / (lb-mol-deg R)):	10.7310
Liquid Bulk Temperature (deg. R):	515.8442
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,765.3167

Vapor Space Expansion Factor

Vapor Space Expansion Factor:	0.0503
Daily Vapor Temperature Range (deg. R):	28.5089
Daily Vapor Pressure Range (psia):	0.0031
Breather Vent Press. Setting Range (psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0062
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0048
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0079
Daily Avg. Liquid Surface Temp. (deg R):	518.2062
Daily Min. Liquid Surface Temp. (deg R):	511.0790
Daily Max. Liquid Surface Temp. (deg R):	525.3334
Daily Ambient Temp. Range (deg. R):	27.9250

Vented Vapor Saturation Factor

Vented Vapor Saturation Factor:	0.9984
Vapor Pressure at Daily Average Liquid:	

XVI. Insignificant Activities

Surface Temperature (psia):	0.0062
Vapor Space Outage (ft):	4.7510
Working Losses (lb):	319.5486
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0062
Annual Net Throughput (gal/yr.):	17,405,424.0000
Annual Turnovers:	41.4400
Turnover Factor:	0.8906
Maximum Liquid Volume (gal):	420,000.0000
Maximum Liquid Height (ft):	30.5000
Tank Diameter (ft):	48.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	320.7088

TANKS 4.0.9d
Emissions Report – Detail
Format Individual Tank Emission Totals

Emissions Report for: Annual

RBGS #1 - Vertical Fixed Roof Tank
Albuquerque, New Mexico

Components	Losses(lbs)		
	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	297.83	22.88	320.71

ATTACHMENT A

Title V Operating Permit Renewal Application Forms



City of Albuquerque
Environmental Health Department
Air Quality Division
11850 Sunset Gardens SW
Albuquerque, New Mexico 87121
Telephone: (505) 768-1930 Fax: (505) 768-1977



Please answer all questions applicable to your specific business, operation and products. Use the abbreviation "N.A." for "not applicable" wherever appropriate.

SECTION 1 - GENERAL INFORMATION (20.11.42 NMAC)

{Specific instructions corresponding to numbers in brackets are included in the application package.}

1. Company Name: {1} Public Service Company of New Mexico
2. Application Date: 06/16/2015
3. Company Mailing Address: 2401 Aztec Rd. NE Albuquerque, NM 87107 4. Phone: (505) 241-2019
5. Owner's Name: {2} Claudette Horn, Senior Environmental Manager 6. Phone: (505) 241-2019
7. Owner's Address: 2401 Aztec Rd. NE Albuquerque, NM 87107
8. Plant Name: {3} {if different from 1} Rio Bravo Generating Station 9. Phone: (505) 241-4723
10. Plant Address: {if different from 3.} 725 Electric Avenue Albuquerque, NM 87105
11. Operator of Plant: {4} Richard Threet, Director Plant Management I 12. Phone: (505) 241-4723
13. Plant Operator Address: 4400 Paseo Del Norte NE, Albuquerque, NM 87109
14. Responsible Official {5}: Richard Threet 15. Phone: (505) 241-4723
16. Address of Responsible Official: 4400 Paseo Del Norte NE, Albuquerque, NM 87109
17. Person to Contact at Site {6}: Richard Threet 18. Title: Plant Manager 19. Phone: (505) 241-4723
20. Owner's Agent(s): {7} Robin DeLapp 21. Phone: (505) 241-2016
22. Company's State of Incorporation or Registration to do Business: New Mexico
23. Company's Corporate or Partnership Relationship to any other Air Quality Permittee: {8} N/A
24. Name of Parent Company: {9} PNM Resources INC.
25. Address of Parent Company: 414 Silver Avenue, Albuquerque, NM 87158
26. Names of Subsidiary Companies: {10} PNM, Texas-New Mexico Power Company (TNMP)
27. Air Quality Permits for this Source Already Received: (Permit Number(s)) 694-M1-RV1, OP2093-RV1, AR2093-RV1
28. Other Air Quality Permits Issued to this Applicant: (Permit Number(s)) 694, 694-M1, OP2093, AR2093
29. Reason this source must have a Part 42 operating permit: {11} Facility is a Title V Major Source and Title IV Acid Rain Source
30. Is U.S.G.S. quadrangular map or equivalent attached? {12} Yes
31. Ownership of land at plant site (private, State, Federal, Indian, etc.): Private

NOTE: If the land at the plant site is Indian land, contact the Air Pollution Control Division Engineering staff for assistance.

32. Distance, in meters, of plant site to nearest residence, school or occupied structure: {13} 850 m (approximately) from nearest residence or occupied structure.

33. Location of Plant:

33A. City or County: Bernalillo County 33B. Direction and distance from nearest town 4 miles south of Albuquerque

33C. UTM Zone: 13 UTME: 350169 km UTMN: 3877287 km

33D. Range: 3E Township: 9N Section: 8 30E. Latitude: Longitude: 35°, 1', 37.8" N; 106°, 38', 32.7" W

34. Plant Elevation 5075 ft above mean sea level

35. Describe briefly type of plant and nature of processes (or modification) and products, including primary and secondary SIC codes: {14} Electric Power Generation-SIC Code 4911. The facility operates a Nominal 150MW simple cycle combustion turbine electric power generation unit fueled with both natural gas and #2 fuel oil. The unit is operated to generate electric power which is supplied to the regional grid. (NAICS 221112)

36. Describe briefly any processes or products associated with any alternative operating scenarios described in this application, including primary and secondary SIC codes {15}: N/A

37. Plant's Maximum Allowable Hourly and Annual Capacities (specify units) {16}: Hourly: 15,510.8 100 Scf Natural Gas, 12,087.1 gal. Low Sulfur #2 Fuel Oil Annual: 11,354 MMScf Natural Gas, 17,405,424 gal. Low Sulfur #2 Fuel Oil

38. Permit Renewals or Significant Modifications

38A. Is this an application for an operating **permit renewal** or significant modification? Yes X No _____

38B. If yes, when does the current operating permit expire? 06/22/2016

39. Is this a portable or temporary source {17}? Yes _____ No X

39A. If yes, provide identifying numbers (e.g. serial numbers): N/A

39B. If yes, date of anticipated startup: _____ 40C. If yes, date of anticipated relocation: _____

40. Operational Periods: (20 NMAC 11.42.II.1.1.D.5.f.)

40A. Specify **standard** operational periods:

24 hours per day, _____ am to _____ pm, 7 days per week, 4.3 weeks per month 12 months per year

40B. Specify **maximum** operational periods:

24 hours per day, _____ am to _____ pm, 7 days per week, 4.3 weeks per month 12 months per year

SECTION 2 AIR POLLUTANT EMISSIONS RATES PRIOR TO CONTROL OR ABATEMENT EQUIPMENT OR TO ATMOSPHERE IF UNCONTROLLED (20 NMAC 11.42.II.1.1.D.)

(Use additional sheets if necessary)

UNIT No. {1}	EMISSIONS UNIT, PROCESS or OPERATION {2}	UNCONTROLLED AIR POLLUTANT EMISSION RATES {3}		MEASUREMENT OR ESTIMATION METHOD {6}	APPLICABLE REQUIREMENT(S) {7}
		Pollutant {4}	Quantity {5}		
001 Natural Gas	001 (GE 7FA (PG7241))	NO _x	87.5 lb/hr	Manufacturer Data	
			383.3 tn/yr		
001 Natural Gas	001 (GE 7FA (PG7241))	CO	106.5 lb/hr	Manufacturer Data	
			466.5 tn/yr		
001 Natural Gas	001 (GE 7FA (PG7241))	PM ₁₀	9.0 lb/hr	Manufacturer Data	
			39.4 tn/yr		
001 Natural Gas	001 (GE 7FA (PG7241))	PM _{2.5}	8.2 lb/hr	Manufacturer Data	
			35.9 tn/yr		
001 Natural Gas	001 (GE 7FA (PG7241))	VOC	6.0 lb/hr	Manufacturer Data	
			26.3tn/yr		
001 Natural Gas	001 (GE 7FA (PG7241))	SO _x	2.2 lb/hr	Manufacturer Data	
			9.6 tn/yr		
001 Fuel Oil	001 (GE 7FA (PG7241))	NO _x	288.1 lb/hr	Manufacturer Data	
			1261.9 tn/yr		
001 Fuel Oil	001 (GE 7FA (PG7241))	CO	159.0 lb/hr	Manufacturer Data	
			696.4 tn/yr		
001 Fuel Oil	001 (GE 7FA (PG7241))	PM ₁₀	34.0 lb/hr	Manufacturer Data	
			148.9 tn/yr		
001 Fuel Oil	001 (GE 7FA (PG7241))	PM _{2.5}	30.9 lb/hr	Manufacturer Data	
			135.3 tn/yr		

UNIT No. {1}	EMISSIONS UNIT, PROCESS or OPERATION {2}	UNCONTROLLED AIR POLLUTANT EMISSION RATES {3}		MEASUREMENT OR ESTIMATION METHOD {6}	APPLICABLE REQUIREMENT(S) {7}
		Pollutant {4}	Quantity {5}		
001 Fuel Oil	001 (GE 7FA (PG7241))	VOC	17.0 lb/hr	Manufacturer Data	
			74.5 tn/yr		
001 Fuel Oil	001 (GE 7FA (PG7241))	SO ₂	84.8 lb/hr	Manufacturer Data	
			371.4 tn/yr		
			lb/hr		
			tn/yr		
			lb/hr		
			tn/yr		
			lb/hr		
			tn/yr		
			lb/hr		
			tn/yr		
			lb/hr		
			tn/yr		
			lb/hr		
			tn/yr		
			lb/hr		
			tn/yr		

Section 2: Air Pollutant Emissions Rates Prior to Control or Abatement Equipment, or to Atmosphere if Uncontrolled

Each piece of equipment in the facility that emits air pollutants must be listed in this section. Maximum possible emissions rates **prior** to air pollution control equipment, waste abatement equipment, process control capture equipment, or to the atmosphere for uncontrolled emissions are to be provided in this section. Calculations made to determine the values shown on the form are to be shown and referenced in Package Element 6 (Emissions Calculations).

These emissions include: pollutants for which the source is major; regulated air pollutants; all fugitive emissions; and any hazardous or toxic air contaminants emitted as part of plant processes. If products or raw materials are stored and pollutants are passively released through off gassing while in storage, these pollutants must also be listed. Emissions from flares and wood waste burners should be listed in this section.

Notes

- {1} Use the process or operation equipment unit numbers that were assigned to each piece of equipment in Package Element 4A (Process Flow Sheets) above. For fugitive emissions, describe the source of the emissions. For liquid tank and solid material storage, use the tank or storage unit number.
- {2} For example: boiler, catalyst regeneration units, flare, furnace, gas engine, haul road, iron melting cupola, material dryer, process fugitive, silo, smelter furnace, solvent cleaner, storage tanks, etc.
- {3} Use one line for each pollutant emitted by each piece of equipment. Attach additional sheets if required.
- {4} List each pollutant defined by EPA to be a regulated air pollutant that this source emits. Also list all other pollutants for which this source is major. Provide trade name or common name and chemical composition if known. (E.g. particulate matter (describe composition), SO₂, CO, hydrogen sulfide, nitrogen oxides (as nitrogen dioxide), etc.)
- {5} Maximum allowable quantities at maximum allowable production rates and 8760 hours per year unless limited by federally enforceable permit conditions. See Section 1, Line 37. tn = tons (2,000 lb).
- {6} Specify how the quantity of emitted pollutant was determined: from actual measurement (specify equipment used) of emissions (preferred), process material balances, equipment manufacturer's information, EPA emission factor, or other source. Show the calculations used to obtain the emission rates in Package Element 4B (Emissions Calculations).
- {7} Specify the requirement(s) that is(are) applicable to this process, operation or emission unit. See Part 42 for list of applicable requirements. E.g. 20 NMAC 11.67.II.9; NSPS Subpart GG; 20 NMAC 11.41. If there is insufficient room on the form, please attach a clearly identified additional sheet.

SECTION 3 EMISSIONS FROM AIR POLLUTION CONTROL EQUIPMENT AND FROM UNCONTROLLED PROCESS EQUIPMENT
 (20 NMAC 11.42.II.1.1.D.)

(Use additional sheets if necessary)

Emission Unit Nos. {1}	CONTROL EQUIPMENT			AIR POLLUTANTS EMITTED {4}			CONTROL EFFICIENCY		APPLICABLE REQUIREMENTS {8}
	Unit No. {2}	Type {3}	Manufacturer and Model No.	Pollutant {5}	Quantity {6}		% by Weight	Method of Determination {7}	
					Actual	Units			
001 Natural Gas	001	Dry Low NO _x Burners	GE 7FA (PG7241) 297260	NO _x	87.5	lb/hr	87.5	40-50	Manufacturer Data
					320.1	tn/yr	320.1		
001 Natural Gas	001	N/A	GE 7FA (PG7241) 297260	CO	106.5	lb/hr	106.5	N/A	
					389.8	tn/yr	389.8		
001 Natural Gas	001	N/A	GE 7FA (PG7241) 297260	PM ₁₀	9.0	lb/hr	9.0	N/A	
					32.9	tn/yr	32.9		
001 Natural Gas	001	N/A	GE 7FA (PG7241) 297260	PM _{2.5}	8.2	lb/hr	8.2	N/A	
					30.0	tn/yr	30.0		
001 Natural Gas	001	N/A	GE 7FA (PG7241) 297260	VOC	6.0	lb/hr	6.0	N/A	See Section
					22.0	tn/yr	22.0		
001 Natural Gas	001	N/A	GE 7FA (PG7241) 297260	SO _x	2.2	lb/hr	2.2	N/A	
					8.1	tn/yr	8.1		
001 Fuel Oil	001	Water Injection	GE 7FA (PG7241) 297260	NO _x	288.1	lb/hr	288.1	40-50	Manufacturer Data
					207.5	tn/yr	207.5		
001 Fuel Oil	001	N/A	GE 7FA (PG7241) 297260	CO	159.0	lb/hr	159.0	N/A	
					114.5	tn/yr	114.5		

Emission Unit Nos. {1}	CONTROL EQUIPMENT			AIR POLLUTANTS EMITTED {4}			CONTROL EFFICIENCY		APPLICABLE REQUIREMENTS {8}
	Unit No. {2}	Type {3}	Manufacturer and Model No.	Pollutant {5}	Quantity {6}		% by Weight	Method of Determination {7}	
					Actual	Units			
001 Fuel Oil	001	N/A	GE 7FA (PG7241) 297260	PM ₁₀	34.0	lb/hr	34.0	N/A	See Section
					24.5	tn/yr	24.5		
001 Fuel Oil	001	N/A	GE 7FA (PG7241) 297260	PM _{2.5}	30.9	lb/hr	30.9	N/A	
					22.3	tn/yr	22.3		
001 Fuel Oil	001	N/A	GE 7FA (PG7241) 297260	VOC	17.0	lb/hr	17.0	N/A	
					12.0	tn/yr	12.0		
001 Fuel Oil	001	N/A	GE 7FA (PG7241) 297260	SO _x	84.8	lb/hr	84.8	N/A	
					61.1	tn/yr	61.1		
						lb/hr			
						tn/yr			
						lb/hr			
						tn/yr			
						lb/hr			
						tn/yr			

Section 3: Emissions From Air Pollution Control Equipment and from Uncontrolled Process Equipment

All emissions to the atmosphere, either controlled or uncontrolled if no control exists, associated with the operation of this facility must be identified in this

section. This includes fugitive process emissions, and other fugitive or indirect emissions resulting from activities of this facility, e.g. fugitive dust from haul roads. [Insignificant activities are found in Package Element 9.]

Provide emissions rates from air pollution control equipment, waste abatement equipment, process control capture equipment, and from uncontrolled processes, operations or activities. Calculations made to determine the values shown on the form are to be shown and referenced in Package Element 4B (Emissions Calculations). These emissions include: pollutants for which the source is major; regulated air pollutants; and any hazardous or toxic air contaminants emitted as part of plant processes. Emissions from flares, sulfur recovery units, VOC afterburners, and wood waste burners must also be listed.

Sufficient information must be included for the department to evaluate, and verify, the operation and stated control efficiencies of the control equipment involved. Attach additional sheets as needed to list all control equipment. Include references to process flow sheets required in Package Element 4A and attach any equipment layout and assembly drawings as necessary to describe all air pollution control equipment.

Notes:

- {1} List the emission unit numbers that feed each individual piece of control equipment. If multiple process units (with individual numbers) discharge to one control equipment unit, list all emission unit numbers that feed that control equipment unit. For liquid tank and solid material storage, use the tank or storage unit number.
- {2} Corresponding to control equipment unit numbers from Package Element 4.
- {3} Baghouse, cyclone, electrostatic precipitator, enclosures, scrubber, VOC afterburners, etc.
- {4} Emissions after gases have passed through control equipment. Use one line for each pollutant emitted. Attach additional sheets if required.
- {5} SO₂, NO_x, particulate matter, etc.
- {6} "Actual" rates are based on actual production and hours of operation. "Allowable" values are based on maximum allowable production rates. If there is no control equipment, the values in the "Allowable" column are the same as the values in the "Quantity" column in Section 2. List quantities in both pounds per hour and tons per year. Yearly values are based on 8760 hours per year unless the applicant desires to restrict hours of operation as a permit condition. If the emission rate is limited by a federally enforceable applicable requirement, then provide the value of this rate.
- {7} Field test results, manufacturer's data, etc. See note {6} from Section 2, Air Pollutant Emission Rates.
- {8} Specify the requirement(s) that apply to this control equipment unit and process.

SECTION 4 COMPLIANCE MONITORING DEVICES AND EQUIPMENT
 (20 NMAC 11.42.II.1.1.D.)

(Use additional sheets if necessary)

Unit No. {1}	Pollutant Monitored or Measured	Type of Instrument {2}	Manufacturer and Model Number	Range {3}	Sensitivity	Accuracy	Emission Units {4}	Location of Monitor {5}
001	NO _x	Chemiluminescence	Teledyne T200M	25/250 ppm (Dual Range)	+/-0.1	+/-0.1	1	Sample Port, Exhaust Stack
001	O ₂	Paramagnetic	Teledyne T300	21%	+/-0.1	+/-0.1	1	Sample Port, Exhaust Stack
001	Fuel Flow, Natural Gas	Orifice	Triad Measurement, Orifice 2	up to 2 MMscf	N/A	+/-0.1	1	Turbine Fuel Inlet
001	Fuel Flow, Fuel Oil	Positive Displacement	Brodie, B70CB	42.5 – 425 gpm	N/A	+/-0.1	1	Turbine Fuel Inlet
001	All Applicable	DAHS (Data Acquisition & Handling System)	CISCO BREEZ75	N/A	N/A	N/A	1	CEMS Shelter

Section 4: Compliance Monitoring Devices and Equipment

Use this section to list all compliance monitoring devices and equipment used at the facility to verify emission rates and other permit terms and conditions. Use one line for each monitoring device and piece of equipment.

Notes:

- {1} List the unit number of the compliance monitoring device as shown in Package Element 4A (Process Flow Sheets).
- {2} State the type of the monitoring device. E.g. Ultra Violet Photometric Analyzer, NDIR Photometer, Opacity Meter, EPA Sampling Train (specify the sampling method number), etc.
- {3} 0- 1,000 ppm, 0 - 50 g/m³, 0 - 100% opacity, etc.
- {4} Provide the unit number(s) (from Package Element 4A -- Process Flow Sheets) of the emissions unit(s) being monitored by each device.
- {5} Describe the physical location of the monitoring device and the recording device. E.g. Monitor is located in ductwork 50' upstream from stack. Recorder is located in operating control room.

SECTION 5 FUELS AND FUEL USAGE
 (20 NMAC 11.42.II.1.1.D.)

(Use additional sheets if necessary)

Unit No. {1}	Type of Equipment {2}	Equipment Manufacturer	Rated Capacity {3}	FUEL DATA {4}				
				Fuel Type {5}	Amount Per Year {6}	Heating Value (State Units) {7}	Percent Sulfur {8}	Percent Ash {9}
001	Simple Cycle Combustion Turbine	GE	150 MW	Pipeline Quality Natural Gas	11,354 MMScf	1020 Btu/SCF	0.5 grains/100 SCF ^(a)	N/A
001	Simple Cycle Combustion Turbine	GE	150 MW	Low Sulfur Fuel Oil #2	17,405,424 gallons	139 MMBtu/10 ³ gallons	0.05% by wt	N/A

Section 5: Fuels and Fuel Usage

This section provides information on all the fuel usage for all process equipment at the facility. Flares and waste burners are not listed here unless supplemental fuel is used to sustain combustion. In that case, only the supplemental or auxiliary fuel data is given here.

A material balance for combustion within the plant is required to complete this Section and should be attached to this Section. Show calculations in Package Element 4B.

Only equipment that uses fuel is listed in this section.

Notes:

- {1} Corresponding to emissions, process, or operational unit numbers as shown in Package Element 4A (Process Flow Sheets).
- {2} State the type of equipment. E.g. Boiler, diesel engine, furnace, gas engine, gas turbine, oven, space heater, etc.
- {3} Provide the maximum nameplate rate and the normal rate, if these rates are different, e.g. million btu/hr, HP etc. If these rates have been adjusted for altitude, this should be noted on the form. Ask the Division's Engineering staff for derating procedures.
- {4} If auxiliary fuel or different fuel is used "on standby", the data for that fuel must also be provided.
- {5} E.g. Natural gas; LPG; No. 1, 2, 4, or 6 fuel oil; refinery gas; coal; wood; etc.
- {6} Use the following units depending on the fuel type: Million cubic feet of gas; gallons of fuel oil; pounds of LPG; etc. State what units you are using.
- {7} Use the following units depending on the fuel type: Btu/thousand ft³ for gas, Btu/lb for solid fuel, or Btu/gallon for liquid fuel.
- {8} State both average percentage by weight and maximum percentage by weight. Sulfur content is not required if sweet pipeline quality natural gas is used as the fuel. Specify in "fuel type" that sweet pipeline quality gas is used and state specification under "sulfur". Provide fuel supplier specifications for sulfur content.
- {9} State both average percentage by weight and maximum percentage by weight. Ash content is not required if sweet pipeline quality natural gas is used as the fuel.

SECTION 6A RAW MATERIALS PROCESSED
 (20 NMAC 11.42.II.1.1.D.)

(Use additional sheets if necessary)

Unit No. {1}	Material {2a}	Composition {3}	Condition {4}	Quantity Used {5} (Specify Units)
001	Pipeline Quality Natural Gas	0.5 grains/100 SCF maximum ^(a)	N/A	11,354 MMScf
001	Fuel Oil #2	0.05% wt sulfur maximum	N/A	17,405,424 gallons

SECTION 6B MATERIALS PRODUCED (DO NOT INCLUDE EMISSIONS AND WASTE PRODUCTS LISTED IN SECTIONS 2, 3, & 10)
 (20 NMAC 11.42.II.1.1.D.5.d.)

Unit No. {1}	Material {2a}	Composition {3}	Condition {4}	Production Rates {5} (Specify Units)
N/A				

Sections 6A and 6B: Raw Materials Processed and Materials Produced

This section addresses any feedstocks or raw materials used in the plant process, and materials or products (not including solid or liquid waste products) that are generated. As an example, sour natural gas is the raw material and sweet pipeline quality gas and natural gas liquids are the products. This section quantifies a portion of the facility material balance. Some unit numbers will correspond to process equipment, as for example where a stream is "refined", such as sour gas to sweet gas, or rock crushing with rock aggregate feed and various products are produced in stages (crushers, screens).

Calculations made to determine the values shown on the form are to be shown and referenced in Package Element 4B (Emissions Calculations).

Notes: (These apply to both 6A and 6B)

- {1} Corresponding to emissions, process or operational unit numbers as shown in Package Element 4A (Process Flow Sheets).
- {2a} What is the raw material -- for example: crude oil, sour gas, raw ore.
- {2b} What is the finished product -- for example: gasoline, diesel fuel, sweet gas.
- {3} List each major component with weight percentages and chemical compositions (if known), or attach separate analysis sheet.
- {4} Provide typical particle size distribution for aggregates, pumice dust, etc. and average moisture content if known.
- {5} Barrels per day, thousands of standard cubic feet per day, tons per hour, etc. Reference process flow sheets required in Package Element 4A, including material balances.

SECTION 7 STACK PARAMETERS
 (20 NMAC 11.42.II.1.1.D.)

(Use additional sheets if necessary)

Stack Height ft. {3}	Inside Stack Exit Diameter ft {4}	EXIT GAS CONDITIONS {5}			SAMPLING PORTS		
		Temp. EF	Velocity ft/sec {6}	Moisture % by Vol	Number	Size	Location {7}
(Natural Gas) 50 ft Above Ground Level	23.6 ft	1103 °F	96.8	7	12 (6 on the North and South sides of stack)	6" Inner Diameter	Approximately 10 ft. from stack exit.
(Fuel Oil) 50 ft Above Ground Level	23.6 ft	1081 °F	98.3	12	12 (6 on the North and South sides of stack)	6" Inner Diameter	Approximately 10 ft. from stack exit.

Section 7: Stack Parameters

This section is used to describe the release points of all emissions associated with the facility. This includes actual stacks as well as the release point information in cases where there is no stack, such as where fugitive releases occur.

This information is required for EPA's Aerometric Information Retrieval System database and also for air dispersion modeling that may be required for either this source or another source.

Notes:

- {1} Use stack numbers from Package Element 4A (Process Flow Sheets). If there is a release point with no stack, state the location of the release point.
- {2} If one stack serves multiple processes, operations, or emissions units, provide unit numbers for all emissions units discharging to this stack.
- {3} Height above ground of the stack exit or release point.
- {4} If stack is circular, give inside diameter at exit point. If stack is not circular, provide actual exit dimensions. If stack exit is not pointed up, give direction that stack points. State whether rain cap is used.
- {5} If conditions are not measured at actual stack exit, specify location at which measurements are made.
- {6} Show calculations in sufficient detail to allow permit engineer to verify actual velocity values. These calculations should be shown in Package Element 4B and clearly identified.
- {7} Provide the physical location(s) of the sampling ports. For example: 2 ports at 90 degrees, 25 ft. from top of stack.

SECTION 8A LIQUID STORAGE TANKS - MATERIAL DATA
 (20 NMAC 11.42.II.1.1.D.)

(Use additional sheets if necessary)

Tank No. {1}	Material Name {2}	Composition {3}	Liquid Density (lb/gal)	Vapor Molecular Weight (lb/lb-mol)	Average Storage Temp., T _{av} (EF)	True Vapor Pressure at T _{av} (psia)	Maximum Storage Temp., T _{max} (EF)	True Vapor Pressure at T _{max} (psia)
1	Fuel Oil #2	0.05% wt Sulfur	7.1	130	59° F	0.0062	66° F	0.0079

Section 8A: Liquid Storage Tanks - Material Data

This section is used to describe any liquid materials that are stored at the plant and are potential sources of gaseous emissions. This includes raw feedstocks, and intermediate and final product storage.

If your plant has no tanks which store volatile organic compounds, or other toxic or hazardous materials, write "NA" on the top of the form.

This information is requested for the calculation and characterization of fugitive emissions. EPA's reference AP-42 Section 12 lists reference data for liquid storage tanks.

The emissions data for the tanks should be provided in Sections 2 and 3 of this application form.

Notes:

- {1} The tank numbers are to be assigned by the applicant. Use a unique tank number for each tank. These are the same numbers as are used in Package Element 4A (Process Flow Sheets) to identify each tank.
- {2} Give the trade name or commonly used name for the liquid stored in the tanks. E.g. Stoddard Solvent, fuel oil, etc.
- {3} Identify each major component (including sulfur) and give its weight percent. If space is insufficient, attach analysis sheet. The material name and tank number should be clearly identified on any attachments.

Section 8B: Liquid Storage Tanks - Tank Data

Notes:

- {1} Use tank number(s) from Section 8A.
- {2} Date (mo./yr.) tank was originally installed or constructed. If the tank was later modified or reconstructed, provide the date this work was completed and attach a separate description of the modifications or reconstruction.
- {3} If the tank is used to store more than one material, use a separate line for each material and provide all the requested data for each material.
- {4} Use the following abbreviations: Fixed roof - FX, Internal Floating Roof - IF, External Floating Roof - EF, Pressure - P.
- {5} Select the appropriate number and letter from the following list that describes the tank and seal type (e.g. "2b" indicates welded tank, liquid mounted resilient seal with weather shield):
NOTE: For pressure tanks, enter control pressure (psia).

WELDED TANK SEALS

- 1. Mechanical shoe 2. Liquid mounted resilient 3. Vapor mounted resilient
 - a. Primary only a. Primary only a. Primary only
 - b. Shoe mounted secondary b. Weather shield b. Weather shield
 - c. Rim mounted secondary c. Rim mounted secondary c. Rim mounted secondary

RIVETED TANK

- 4. Mechanical shoe seal
 - a. Primary only
 - b. Shoe mounted secondary
 - c. Rim mounted secondary
- {6} This applies to fixed roof tanks **only**. Give the average distance from liquid surface to tank roof. For all other tanks, write "N.A."
- {7} Use the following abbreviations: White - WH, Aluminum (specular) - AS, Aluminum (diffuse) - AD, Light Gray - LG, Medium Gray - MG, Black - BL, Other - OT.
- {8} Describe the condition of the paint on the tank as either: Good or Poor.
- {9} Enter throughput, in gallons/year, of each material that is stored in the tank.
- {10} Turnover = annual throughput (gal) / tank capacity (gal).

SECTION 9A SOLID MATERIAL STORAGE - MATERIAL DATA
 (20 NMAC 11.42.II.1.1.D)

(Use additional sheets if necessary)

Storage Unit No. {1}	Material Name	Emissions Unit, Process or Operation Served {2}	Storage Type {3}	Composition {4}	Date Installed or Modified (Mo./Yr)
N/A					

Section 9A: Solid Material Storage - Material Data

This section is used to describe any solid stored materials used in the plant process which are potential sources of particulate matter. This includes raw feedstocks, intermediate and final product storage. If there is no solid material storage at the plant, write "NA" at the top of the form.

Emissions data for solid material that is stored on the plant site should be provided in Sections 2 and 3.

Notes:

- {1} Individual storage unit numbers are assigned by the applicant in Package Element 4A (Process Flow Sheets). These same unit numbers are used in this Section and in Sections 2 and 3 to identify the storage units.
- {2} State which process, operation or emissions unit is served and whether transfer equipment is used. E.g. open feed conveyor.
- {3} Examples of storage type: silo, open pile, shed, enclosed building, enclosed weigh bin or surge bin.
- {4} Give the chemical composition of the material being stored. If space is insufficient, attach analysis sheet. The material name and storage unit number should be identified clearly in any attachments.

SECTION 9B SOLID MATERIAL STORAGE - STORAGE DATA
 (20 NMAC 11.42.II.1.1.D.)

(Use additional sheets if necessary)

Storage Unit No. {1}	Transfer or Transport Method {2}		Maximum Hourly Throughput (specify units)	Annual Throughput (specify units)	Dust Control Method (Storage or Transfer) {3}
	Incoming	Outgoing			
N/A					

Section 9B: Solid Material Storage - Storage Data

This section is used to specify the amounts and methods of solid material transfer in the facility process or operation.

Notes:

- {1} Use the same storage unit numbers as in Section 9A.
- {2} Examples of transfer or transport method:
Incoming: how material is loaded into the storage unit, e.g. truck, rail car, front end loader, etc.

Outgoing: how material is moved from the storage area to the process area, e.g. closed pneumatic feed, closed gravity feed, open gravity feed, enclosed screw conveyor, front end loader, open or enclosed belt conveyor, truck.
- {3} State what kind of dust control methods are used in the storage or transfer of material. E.g. silo bin filters, telescoping stacker chutes, enclosures, dust pickup to baghouse, etc.
If the storage unit is equipped with a stack, provide the stack parameters in Section 7 (Stack Parameters).

SECTION 10 WASTE PRODUCT DISPOSAL (SOLID AND LIQUID WASTES THAT DO NOT RESULT IN AIR EMISSIONS)
 (20 NMAC 11.42.II.1.1.D.)

(Use additional sheets if necessary)

Equipment Unit No. {1}	WASTE MATERIAL		METHOD OF DISPOSAL {4}
	Type {2}	Amount {3}	
N/A		/hr	
		/yr	
		/hr	
		/yr	
		/hr	
		/yr	
		/hr	
		/yr	
		/hr	
		/yr	
		/hr	
		/yr	
		/hr	
		/yr	
		/hr	
		/yr	
		/hr	
		/yr	

Section 10: Waste Product Disposal

Use this section to describe solid and liquid waste product disposal. Any waste product disposal that results in emissions of air pollutants, such as flares or wood waste burners, should be listed and characterized in Sections 2 and 3 of this application form.

This form is designed to complete the material and mass balances of the applicant's operation. It is not part of the part of the air emissions characterization.

Be aware that incineration of waste materials is regulated and 20 NMAC 11.68 or 11.69 may apply.

Notes:

- {1} Give the control equipment or process unit numbers from Sections 2 through 9 that produce solid or liquid waste products which are then disposed of.
- {2} For example: Waste paper, wood chips, rubbish, garbage, acids, oils, fly ash, tailings, sulfur, etc.
- {3} Provide the quantity of waste product generated in terms of pounds, tons, or gallons per hour and per year. Specify units used.
- {4} For example: Sanitary landfill, waste pickup, sewage treatment plant, etc.

SECTION 11 CERTIFICATION -- (20 NMAC 11.42.II.1.1.E.)

I, Richard Threet, hereby certify that the information and data submitted in this application package are as complete, true and accurate as possible, to the best of my personal knowledge and professional expertise and experience.

Signed this 16th day of June, 2015, upon my oath of affirmation, before a notary of the State of New Mexico


SIGNATURE (Responsible Official)

June 16, 2015
DATE

Richard Threet
PRINTED NAME

Plant Manager / Responsible Official
TITLE

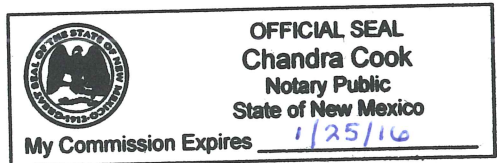
Subscribed and sworn to before me on this 16th day of June, 19 2015.

My authorization as a Notary of the State of New Mexico expires on the 25 day of January, 19 2016.


NOTARY'S SIGNATURE

6/16/15
DATE

Chandra Cook
NOTARY'S PRINTED NAME



ATTACHMENT B

Acid Rain Phase II Permit Renewal Application Forms

**CITY OF ALBUQUERQUE ENVIRONMENTAL HEALTH DEPARTMENT
AIR QUALITY DIVISION
ACID RAIN PROGRAM
PHASE II PERMIT APPLICATION**

For more information, see instructions and refer to 20.11.62 NMAC and 40 CFR Part 72

This submission is: **New** **Revised** **Renewal**

STEP 1: Identify the source by plant name, State and ORIS code from NADB

Plant Name	State	ORIS Code
Rio Bravo Generating Station	NM	55039

STEP 2: Enter the boiler ID# from NADB for each affected unit, and indicate whether a re-powering plan is being submitted for the unit by entering “yes or “no” at column c. For new units, enter the requested information in columns d and e.

COMPLIANCE PLAN

COLUMN A	COLUMN B	COLUMN C	COLUMN D	COLUMN E
BOILER ID #	Unit will hold Allowances in Accordance with 40 CFR Part 73	Re-powering Plan	New Units/ Commence Operation Date	New Units/Monitor Certification Deadline
GT-1	YES	NO		
	YES			
	YES			
	YES			
	YES			
	YES			
	YES			
	YES			
	YES			
	YES			

STEP 3: Check the box if the response in column c of Step 2 is Yes for any unit.

For each unit that will be re-powered, the Repowering Extension Plan Form is included and Repowering Technology Petition form has been submitted.

PLANT NAME: Rio Bravo Generating Station

STEP 4: Read the standard requirements and certification, enter the name of the designated representative, sign and date

Standard Requirements (20.11.62.12.D NMAC)

Permit Requirements

1. The designated representative of each affected source and each affected unit at the source shall:
 - a. Submit a complete Acid Rain permit application under this part in accordance with the deadlines specified in 20.11.62.14.A NMAC;
 - b. Submit in a timely manner any supplemental information that the Department determines is necessary in order to review an Acid Rain permit application and issue or deny an Acid Rain permit.
2. The owners and operators of each affected source and each affected unit at the source shall:
 - a. Operate the unit in compliance with a complete Acid Rain permit application or a superseding Acid Rain permit issued by the Department; and
 - b. Have an Acid Rain Permit.

Monitoring Requirements

1. The owners and operators and, to the extent applicable, designated representative of each affected source and each affected unit at the source shall comply with the monitoring requirements as provided in 40 CFR Part 75 and 76.
2. The emissions measurements recorded and reported in accordance with 40 CFR Part 75 and 76 shall be used to determine compliance by the unit with the Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program.
3. The requirements of 40 CFR Part 75 and 76 shall not affect the responsibility of the owners and operators to monitor emissions of other pollutants or other emissions characteristics at the unit under other applicable requirements of the Act and other provisions of the operating permit for the source.

Sulfur Dioxide Requirements

1. The owners and operators of each source and each affected unit at the source shall:
 - a. Hold allowances, as of the allowance transfer deadline, in the unit's compliance subaccount (after deductions under 40 CFR 73.34(c)) not less than the total annual emissions of sulfur dioxide for the previous calendar year from the unit; and
 - b. Comply with the applicable Acid Rain emissions limitation for sulfur dioxide.
2. Each ton of sulfur dioxide emitted in excess of the Acid Rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Act.
3. An affected unit shall be subject to the requirements 20.11.62.12.(3) NMAC as follows:

PLANT NAME: Rio Bravo Generating Station

- a. Starting January 1, 2000, an affected unit under 20.11.62.12.A.(1)(b) NMAC; or
- b. Starting on the later of January 1, 2000 or the deadline for monitor certification under 40 CFR Part 75, an affected unit under 20.11.62.12.A.(1)(c) NMAC.

4. Allowances shall be held in, deducted from, or transferred among ATS accounts in accordance with the Acid Rain Program.

5. An allowance shall not be deducted, in order to comply with the requirements under 20.11.62.12.(3) NMAC, prior to the calendar year for which the allowance was allocated.

6. An allowance allocated by the EPA under the Acid Rain Program is a limited authorization to emit sulfur dioxide in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the Acid Rain permit application, the Acid Rain permit, or the written exemption under 20.11.62.12.B NMAC and 20.11.62.12.C NMAC and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization.

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

Nitrogen Oxides Requirements

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

Excess Emissions Requirements

1. The designated representative of an affected unit that has excess emissions in any calendar year shall submit a proposed offset plan, as required under 40 CFR part 77.
2. The owners and operators of an affected unit that has excess emissions in any calendar year shall:
 - a. Pay without demand the penalty required, and pay upon demand the interest on that penalty, as required by 40 CFR part 77; and
 - b. Comply with the terms of an approved offset plan, as required by 40 CFR part 77.

Record Keeping and Reporting Requirements.

1. Unless otherwise provided, the owners and operators of the source and each affected unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 5 years, in writing by the EPA or Department.

- a. The certificate of representation for the designated representative for the source and each affected unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation changing the designated representative.

- b. All emissions monitoring information, in accordance with 40 CFR Part 75.

PLANT NAME: Rio Bravo Generating Station

- c. Copies of all reports, compliance certifications, and other submissions and all records made or required under the Acid Rain Program.
 - d. Copies of all documents used to complete an Acid Rain permit application and any other submission under the Acid Rain Program or to demonstrate compliance with the requirements of the Acid Rain Program.
2. The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 20.11.62.19 NMAC and 40 CFR Part 75.

Liability

1. Any person who knowingly violates any requirement or prohibition of the Acid Rain Program, a complete Acid Rain permit application, an Acid Rain permit, or a written exemption under 20.11.62.12.B NMAC or 20.11.62.12.C NMAC, including any requirement for the payment of any penalty owed to the United States, shall be subject to enforcement by the EPA pursuant to Section 113(c) of the Act and by the Department pursuant to ROA 1994 § 9-5-1-99(B)(1).
2. Any person who knowingly makes a false, material statement in any record, submission, or report under the Acid Rain Program shall be subject to criminal enforcement by the EPA pursuant to Section 113(c) of the Act and 18 U.S.C. 1001 and by the Department pursuant to ROA 1994 § 9-5-1-99(B)(2).
3. No permit revision shall excuse any violation of the requirements of the Acid Rain Program that occurs prior to the date that the revision takes effect.
4. Each affected source and each affected unit shall meet the requirements of the Acid Rain Program.
5. Any provision of the Acid Rain Program that applies to an affected source (including a provision applicable to the designated representative of an affected source) shall also apply to the owners and operators of such source and of the affected units at the source.
6. Any provision of the Acid Rain Program that applies to an affected unit (including a provision applicable to the designated representative of an affected unit) shall also apply to the owners and operators of such unit. Except as provided under 20.11.62.15.B NMAC (Phase II repowering extension plans), 40 CFR Part 76, and except with regard to the requirements applicable to units with a common stack under 40 CFR Part 75 (including 40 CFR 75.16, 75.17, and 75.18), the owners and operators and the designated representative of one affected unit shall not be liable for any violation by any other affected unit of which they are not owners or operators or the designated representative and that is located at a source of which they are not owners or operators or the designated representative.
7. Each violation of a provision of this Part and 40 CFR parts 72, 73, 74, 75, 76, 77, and 78 by an affected source or affected unit, or by an owner or operator or designated representative of such source or unit, shall be a separate violation of the Act.

Effect on Other Authorities

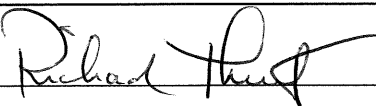
No provision of the Acid Rain Program, an Acid Rain permit application, an Acid Rain permit, or a written exemption under 20.11.62.12.B NMAC or 20.11.62.12.C NMAC shall be construed as:

PLANT NAME: Rio Bravo Generating Station

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

Certification

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Name Richard Threet	
Signature 	Date 6/16/15

STEP 3 (optional)
Enter the source AIRS
and FINDS identification
numbers, if known

AIRS # NM/001/00363 (from AR2093-RV1)
FINDS

ATTACHMENT C

Emission Calculation Background Documents

- 1) Dames & Moore vendor data for GE turbine, dated May 28, 1998
- 2) Zachary vendor guarantee for GE turbine, dated August 10, 1998
- 3) GE letters to Florida Power and Light discussing basis for PM Guarantees
- 4) John S. Seitz PM_{2.5} Memo dated October 23, 1997

Attachment C: PM Emission Calculation Background Documents

SENT BY:

5-28-98 ; 15:55 ;

DAMES & MOORE-

512 431 8828:7 4/ 5

Cobisa - Gas Fuel Part Loads at 20F
ESTIMATED PERFORMANCE PG7241(WA)

Load Condition		BASE	75%	50%	25%
Ambient Temp.	Deg F.	20.	20.	20.	20.
Fuel Type		Coal Gas	Coal Gas	Coal Gas	Coal Gas
Fuel HHV	Btu/lb	23,300	23,300	23,300	23,300
Fuel Temperature	Deg F	80	80	80	80
Output	kW	153,300.	115,000.	76,600.	38,300.
Heat Rate (HHV)	Btu/kWh	10,320.	11,050.	13,250.	18,170.
Heat Cons. (HHV) X 10 ⁶	Btu/h	1,582.1	1,270.8	1,015.	695.9
Exhaust Flow X 10 ³	lb/h	3156.	2513.	2071.	1908.
Exhaust Temp.	Deg F.	1081.	1111.	1199.	971.
Exhaust Heat (HHV) X 10 ⁶	Btu/h	1001.3	831.5	715.0	536.7

EMISSIONS

NOx	ppmvd @ 15% O ₂ - 15	15.	15.	15.	75.
NOx AS NO ₂	lb/h	88.	70.	55.	186.
CO	ppmvd	- 15.	15.	15.	96.
CO	lb/h	43.	34.	28.	169.
UHC	ppmvd	7.	7.	7.	43.
UHC	lb/h	12.	10.	8.	46.
Particulates	lb/h	- 9.	9.	9.	9.

EXHAUST ANALYSIS % VOL.

Argon	0.90	0.90	0.91	0.91
Nitrogen	75.10	75.11	75.22	75.95
Oxygen	12.57	12.60	12.91	14.99
Carbon Dioxide	3.84	3.83	3.68	2.73
Water	7.60	7.57	7.29	5.42

SITE CONDITIONS

Elevation	ft.	5000.0
Site Pressure	psia	12.25
Inlet Loss	in Water	4.04
Exhaust Loss	in Water	5.5
Relative Humidity	%	20
Application		7F12-Hydrogen-Cooled Generator
Combustion System		15/42 DLN Combustor

Emission information based on GE recommended measurement methods, NOx emissions are corrected to 15% O₂ without heat rate correction and are not corrected to ISO reference condition per 40CFR 60.335(e)(1). NOx levels shown will be controlled by algorithms within the SPEEDTRONIC control system.

IPS- 60342 version code- 1.3.0 Opt: 11
 GORDONSA 5/28/98 10:57 60342 gas 7241 part load 20F.dat

12184961504 P. 84

Attachment C: PM Emission Calculation Background Documents

SENT BY: TOTAL P.05

5-28-98 : 15:55 :

DAMES & MOORE-

512 451 8828:# 5/ 5

Cobisa - Distillate Fuel Part Loads at 20F
ESTIMATED PERFORMANCE SUMMARY

Load Condition		BASE	75%	50%	25%
Ambient Temp.	Deg F.	38.	38.	38.	25%
Fuel Type		Dist.	Dist.	Dist.	Dist.
Fuel HHV	Btu/lb	19,400	19,400	19,400	19,400
Fuel Temperature	Deg F.	80	80	80	80
Liquid Fuel H/C Ratio		1.8	1.8	1.8	1.8
Output	kW	177,908.	182,400.	78,900.	19,508.
Heat Rate (HHV)	Btu/kwh	10,640.	11,518.	12,490.	17,290.
Heat Cons. (HHV) X 10 ⁶	Btu/h	1,480.1	1,363.8	1,064.4	681.4
Exhaust Flow X 10 ³	lb/h	3249.	3434.	2034.	1913.
Exhaust Temp.	Deg F.	1062.	1184.	1200.	996.
Exhaust Heat (HHV) X 10 ⁶	Btu/h	973.2	823.4	498.3	518.6
Water Flow	lb/h	103,360.	81,710.	51,590.	8.

EMISSIONS					
NOx	ppmv @ 15% O2	42.	42.	41.	133.
NOx AS NO2	lb/h	281.	226.	179.	349.
CO	ppmv	28.	30.	26.	246.
CO	lb/h	57.	49.	48.	438.
UHC	ppmv	7.	7.	7.	22.
UHC	lb/h	12.	10.	8.	23.
SO2	ppmv	12.0	13.8	12.0	8.0
SO2	lb/h	87.0	71.0	53.0	39.0
SO3	ppmv	1.0	1.0	1.0	1.0
SO3	lb/h	6.0	6.0	6.0	3.0
Sulfur Mist	lb/h	9.0	7.0	6.0	4.0
Particulates	lb/h	17.	17.	17.	17.

EXHAUST ANALYSIS % VOL.

Argon					
Nitrogen		0.86	0.85	0.85	0.92
Oxygen		72.02	71.75	72.67	76.09
Carbon Dioxide		11.25	10.39	11.45	15.07
Water		5.60	6.00	5.98	3.83
		10.28	10.81	9.44	5.50

TEST CONDITIONS

Elevation	ft.	3000.0
Site Pressure	psia	12.25
Inlet Loss	in Water	4.04
Exhaust Loss	in Water	5.5
Relative Humidity	%	20
Application		40000 Hydrogen-Cooled Generator
Combustion System		1548 DLN Combustor

Emission information based on CE mass/volume measurement methods. NOx emissions are corrected to 15% O2 without heat rate correction and are not corrected to ISO reference conditions per 40CFR 60.333(d)(1). NOx levels shown will be controlled by algorithms within the SPEEDTRONIC control system.

Distillate Fuel is assumed to have 0.015% Fuel-Bound Nitrogen, or less. FBN Amounts Greater Than 0.015% Will Add to the Reported NOx Value. Sulfur Emissions Based On 0.03 WT% Sulfur Content in the Fuel.

IFS- 80342 version code- 1.3.0 Opt: 11
 GORDONBA 5/28/98 11:07 80342 distillate 20F part load.dat

12104961584 P.05

TD

REV-28-1998 13:21 FROM COBISA CORPORATION

Zachary Vendor Guarantee

G. Thermal Performance Test on Natural Gas.

1. Seller shall demonstrate the net electrical output and heat rate of the Equipment on natural gas with a continuous 4-hour test starting after stabilization. The test must conform to the Approved Test Procedures. Tests will be conducted with the inlet evaporative cooler operating normally.
2. Performance Guarantees:
136,380 kW (Net) and 10,560 btu/kWh (HHV), output is measured at the generator terminals and includes allowances for excitation power and AC-equipment supplied by Seller with the Unit as shown on the table in paragraph I(F) above. This does not include any balance-of-plant equipment supplied by Buyer.
3. Performance Minimum:
Minimum net output: 129,561 kW
Maximum net heat rate: 11,088 btu/kWh (HHV).
4. Liquidated Damages:
Output: \$180 / kW for output less than 136,380 kW (Net) and greater than 133,380 kW (Net); plus, \$480 / kW for output equal to or less than 133,380 kW (Net) and greater than 125,000 kW (Net); plus, \$495 / kW for output equal to or less than 125,000 kW (Net)

Heat Rate: \$2,550/ btu/kWh (HHV) above 10,560 btu/kWh (HHV).
5. Synchronization of the Equipment must occur within ten (10) minutes after the initiation of the unpurged starting sequence for a successful test.

H. Thermal Performance Test on #2 Fuel Oil.

1. Seller shall demonstrate net electrical output and heat rate on #2 fuel oil with a continuous 4-hour test starting after stabilization. The test must conform to the Approved Test Procedures. Owner shall have fifteen (15) days after receipt of the written results of the Thermal Performance Test on #2 fuel oil to review and approve the output determination, with such approval not to be unreasonably withheld. If Owner reasonably rejects the output determination, Seller shall reconduct the Thermal Performance Test until it is accepted by Owner. Tests will be conducted with the inlet evaporative cooler operating normally.
2. Performance Guarantees:
142,460 kW (Net) and 10,760 btu/kWh (HHV), output is measured at the generator terminals and includes allowances for excitation power and AC-equipment supplied by Seller with the Unit as shown on the table in paragraph I(F) above. This does not include any balance-of-plant equipment supplied by Buyer.
3. Performance Minimum:
Minimum net output: 135,337 kW
Maximum net heat rate: 11,298 btu/kWh (HHV).

Zachary Vendor Guarantee

TABLE 8-1

GUARANTEED EMISSION LEVELS

Equipment Emissions:	Natural Gas	#2 Fuel Oil
NO _x , ppmvd @ 15% O ₂	15	42
CO, ppmvd @ 15% O ₂	15	20
Particulate Matter, lbs/hr	9	17
VOC (non-methane), ppmvw	1.4	3.5
Opacity, percent	<10	<20



GE International
Power Systems

Brahim Richani, Ph.D.
Manager – GPPSD/PPE CC Systems, Applications & Environmental Engineering
(518) 385-5368
Fax: (518) 381-7450

Global Power Plant Systems Dept.
GE International, Inc.
1 River Road, Bldg. 2 - Room 304
Schenectady, NY 12345

September 19, 2003

Mr. John Gnecco
Florida Power and Light
Email: John_Gnecco@fpl.com
Tel: 561-694-4000

SUBJECT: Expected Particulate Matter Emissions: GE 7FA DLN Combustion Turbines

Dear Mr. Gnecco:

In response to your request for expected PM-10 emissions data for GE 7FA DLN gas turbines, enclosed is a summary of the data gathered to date on our 7FA units with liquid fuel-firing and water injection for NOx control. All of the emissions data included in this summary must be considered as estimates only and are not guarantees under any condition.

Only limited data are available in-house for water injected liquid fuel-fired 7FA units. The data presented in this transmittal correspond to stack measurements for 7 tests on 3 units located at different sites and operating at base load conditions. Both front and back half emissions were measured using EPA Method 5 and 202, respectively. Each test consisted of 3 runs each, with exception of Test 1 where the back half emissions were measured for only 2 of the 3 runs.

From the enclosed summary, it is observed that PM-10 emissions (front and back half) for liquid fuel operations range from 4 to 37 lbs/hr with an average of 24 lbs/hr and a standard deviation of 9 lbs/hr. Front half emissions ranged from 1 to 20 lbs/hr with an average of 10 lbs/hr and a standard deviation of 4 lbs/hr, and back half emissions ranged from 3 to 21 lbs/hr with an average of 14 lbs/hr and a standard deviation of 6 lbs/hr. It is assumed that back half emissions include sulfur mist emissions corresponding to an 0.05% by wt. Sulfur fuel. The 0.05% by wt. sulfur can contribute as much as 10 lbs/hr of sulfur mist emissions at base load operating conditions. With a 0.0015% by wt. sulfur fuel, the expected corresponding sulfur mist contribution to total PM-10 emissions is less than 1 lb/hr.

As evident in the summary data, PM-10 emissions vary widely although they reflect emissions from equivalent units (same combustor and size) firing similar liquid fuels. Additionally, the combustion process in gas turbines is highly efficient, complete and repeatable process with a very specific range of allowable operating conditions. Therefore, it is assumed that the variation in the data is largely due to non-combustion factors such as fuel and ambient air impurities and measurement artifacts. For these reasons, it is GE's policy to keep the PM-10 emissions guarantee for 7FA liquid-fuel operations to 34 lbs/hr excluding sulfur compounds. Additionally

Attachment C: PM Emission Calculation Background Documents

Mr. John Gnecco – FPL
September 19, 2003
Page 2 of 4

in the case of non-compliance, GE's only remedy in meeting the PM-10 emissions guarantee is to re-test the unit after an extended period of operation (minimum of 300 hrs). To date, this has proven to be highly successful, which further reflect that PM-10 emissions variations from gas turbines are mostly due to non-combustion factors.

I hope you find this summary helpful. Please note that the summary data presented herein are subject to change as additional field data are gathered. If you have any questions, feel free to call me at (518) 385-5368.

Sincerely,



Brahim Richani, Ph.D.
Manager

Enclosure

cc: John Almstead – GE
Frank Brooks – GE
Joel Chalfin – GE
Jeanne Beres – GE
Jim Dryzmala – GE



GE International
Power Systems

Brahim Richani, Ph.D.
Manager – GPPSD/PPE CC Systems, Applications & Environmental Engineering
(518) 385-5368
Fax: (518) 381-7450

Global Power Plant Systems Dept.
GE International, Inc.
1 River Road, Bldg. 2 - Room 304
Schenectady, NY 12345

June 17, 2003

Mr. John Gnecco
Florida Power and Light
Email: John_Gnecco@fpl.com
Tel: 561-694-4000

SUBJECT: Particulate Matter Emissions: GE PG7241FA DLN Combustion Turbines

Dear Mr. Gnecco:

In response to your request of PM-10 emissions data for GE PG7241 DLN (7FA) gas turbines, enclosed is a summary of the data gathered to date on our 7FA units with natural gas firing. All of the emissions data included in this summary are for natural gas-fired operations only.

From the enclosed summary, it is concluded that PM-10 emissions (front and back half) can range from 1 to 29 lbs/hr with an average of 7.5 lbs/hr. Front half emissions range from 0 to 17 lbs/hr with an average of 4.8 lbs/hr, and back half emissions range from 0 to 15 lbs/hr with an average of 2.8 lbs/hr.

As evident in the summary data, PM-10 emissions vary widely although they reflect emissions from equivalent units (same combustor and size) firing natural gas. The variation in the data implies that there is no consistency in the gathered PM-10 emissions. Please note that the combustion process in gas turbines, specifically DLN units, is a highly efficient, complete and repeatable process with a narrow and very specific range of allowable operating conditions. Once these units are field tuned and certified during the commissioning process, there are no operator adjustments conducted altering the combustion process thereafter. Due to the specific characteristics of the combustion process and the variation in the gathered data, GE believes that PM-10 emissions from its 7FA natural gas-fired units are essentially zero (no emissions from the combustion process itself). Therefore, it is impractical to speculate any PM-10 emissions from the combustion process.

The reported levels in the gathered data are due to non-combustion factors such as measurement artifacts, airborne PM which passes through the gas turbine inlet air filters, airborne construction debris, metallic rust or oxidation products, etc. It is anticipated that front-half (filterable) PM-10 emissions include ambient air and/or fuel quality effects for which GE has no control of and they generally may contain:

- Airborne PM-10 that passes through the gas turbine inlet air filters

Attachment C: PM Emission Calculation Background Documents

Mr. John Gnecco – FPL
June 17, 2003
Page 2 of 4

- Particulate matter (inert solids) in the fuel gas supply
- Airborne construction debris (present in the inlet or exhaust equipment)
- Metallic rust or oxidation products (present in the inlet or exhaust equipment)
- Measurement (Method 5) artifacts

Additionally, back-half (condensable) PM-10 emissions are mostly from site-specific fuel contaminants and may contain:

- Formation of ammonia sulfates from the SCR system
- Sulfates even w/o an SCR system
- Unburned fuel hydrocarbons that agglomerate to form particles
- Possible other undefined condensables

I hope you find this summary helpful for your permitting needs. If you have any questions, or need additional information, please call me.

Sincerely,



Brahim Richani, Ph.D.
Manager

Enclosure

cc: Ken Kosky – Golder Associates – kkosky@golder.com; Tel: 352-336-5600
Frank Brooks – GE
Joel Chalfin – GE
Jeanne Beres – GE

Attachment C: PM Emission Calculation Background Documents

October 23, 1997 MEMORANDUM

SUBJECT: Interim Implementation of New Source Review Requirements for PM2.5

FROM: John S. Seitz, Director Office of Air Quality Planning & Standards (MD-10)

TO: See Addressees

This memorandum addresses the interim use of PM10 as a surrogate for PM2.5 in meeting new source review (NSR) requirements under the Clean Air Act (Act), including the permit programs for prevention of significant deterioration of air quality (PSD). The revised national ambient air quality standards (NAAQS) for particulate matter, which include the revised NAAQS for PM10 and new NAAQS for PM2.5, became effective on September 16, 1997. In view of the significant technical difficulties that now exist with respect to PM2.5 monitoring, emissions estimation, and modeling (described below), EPA believes that PM10 may properly be used as a surrogate for PM2.5 in meeting NSR requirements until these difficulties are resolved. The EPA's views on implementing the ozone and PM10 NAAQS during the interim period following the effective date of the new 8-hour ozone and revised PM10 NAAQS will be set forth in a separate EPA memorandum.

Section 165(a)(1) of the Act provides that no new or modified major source may be constructed without a PSD permit. Moreover, section 165(a)(3) provides that the emissions from any such source may not cause or contribute to a violation of any NAAQS. Also, section 165(a)(4) requires best available control technology for each pollutant subject to regulation under the Act. The EPA's recent promulgation of the primary and secondary standards for PM2.5 marks the first time that EPA has specifically regulated fine particles--less than 2.5 microns in diameter--as a discrete indicator for particulate matter. Hence, this memorandum addresses how to implement PSD for PM2.5 in light of significant technical difficulties which presently exist.

Of specific concern is the lack of necessary tools to calculate emissions of PM2.5 and related precursors and project ambient air quality impacts so that sources and permitting authorities can adequately meet the NSR requirements for PM2.5. Any comprehensive system for regulating PM2.5 must take into account not only the fine particles emitted directly by stationary sources but also the various precursors, emitted by certain sources, which result in secondarily-formed fine particles through chemical reactions in the atmosphere. Recent studies suggest that secondary particulate matter may account for over half of total ambient PM2.5 nationwide. Emissions factors for the fine particles emitted directly by stationary sources, and

Attachment C: PM Emission Calculation Background Documents

for some important precursors (e.g., ammonia), are largely unavailable at the present time.

The EPA is in the process of developing a comprehensive modeling system which will be designed to include precursor emissions and account for secondary fine particle formation. The modeling system will also incorporate a method for nesting small local impacts from individual point sources within a greater modeling domain. Before this can be completed, it will be necessary to collect sufficient monitoring data to verify and validate protocol modeling results.

Ambient monitoring for PSD purposes must be collected from appropriately designed monitors. Sufficient quantities of such monitors will not be available specifically for PSD monitoring purposes in the near future. Initially, as these monitors become available, they will be needed to establish the new monitoring stations for the national network of PM_{2.5} sites, including the required core PM_{2.5} State and local air monitoring stations. A high priority has been placed on the establishment of the necessary PM_{2.5} monitoring sites nationwide so that the information from these sites can be analyzed and evaluated in order to establish plans and priorities for implementing the PM_{2.5} NAAQS, including the promulgation of section 107 designations.

For the reasons stated above, EPA believes that it is administratively impracticable at this time to require sources and State permitting authorities to attempt to implement PSD permitting for PM_{2.5}. The EPA has projects underway that will address the current technical and informational deficiencies, but it will take 3-5 years to complete these projects. Until these deficiencies are corrected, EPA believes that sources should continue to meet PSD and NSR program requirements for controlling PM₁₀ emissions (and, in the case of PM₁₀ nonattainment areas, offsetting emissions) and for analyzing impacts on PM₁₀ air quality. Meeting these measures in the interim will serve as a surrogate approach for reducing PM_{2.5} emissions and protecting air quality.

This memorandum presents EPA's views on the issues associated with implementation of the new PM_{2.5} NAAQS under Federal, State and local NSR programs. The statements do not bind State and local governments and the public as a matter of law. When the technical difficulties are resolved, EPA will amend the PSD regulations under 40 CFR 51.166 and 52.21 to establish a PM_{2.5} significant emissions rate, and EPA will also promulgate other appropriate regulatory measures pertinent to PM_{2.5} and its precursors. Because the earliest date on which

Attachment C: PM Emission Calculation Background Documents

PM2.5 nonattainment areas will be designated is in 2002, and nonattainment NSR does not apply until after nonattainment designations are made, implementation of the nonattainment NSR requirements under part D of title I of the Act need not be addressed at this time.

If you have any questions concerning this memorandum or wish to address any issues raised herein, please contact Dan deRoeck at (919) 541-5593.

Addressees: Director, Office of Ecosystem Protection, Region I
Director, Division of Environmental Planning and Protection, Region II
Director, Air, Radiation, and Toxics Division, Region III
Director, Air, Pesticides, and Toxics Management Division, Region IV
Director, Air and Radiation Division, Region V
Director, Multimedia Planning and Permitting Division, Region VI
Director, Air, RCRA, and Toxics Division, Region VII
Assistant Regional Administrator, Office of Pollution Prevention, State and Tribal Assistance, Region VIII
Director, Air and Toxics Division, Region IX
Director, Office of Air Quality, Region X

cc: New Source Review Contacts
Greg Foote (2344)
Mark Kataoka (2344)
Lydia Wegman (MD-10)

bcc: Karen Blanchard (MD-12)
Tom Curran (MD-12)
Dan deRoeck (MD-12)
Bill Hamilton (MD-15)
Sally Shaver (MD-15)

Attachment D

PM Compliance Calculation Method for Rio Bravo Combustion Turbine

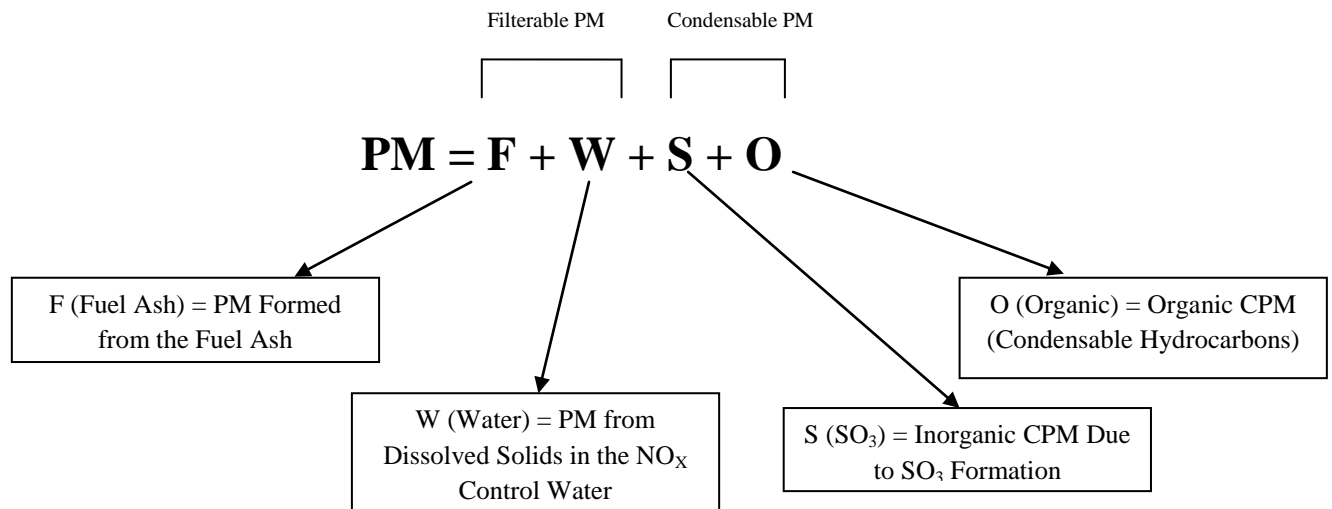
PM Compliance Calculation Approach for Rio Bravo Combustion Turbine

This document, prepared by RMB Consulting & Research, Inc., discusses a particulate matter (PM) emission estimation technique that Public Service Company of New Mexico (PNM) proposes to use for the combustion turbine at its Rio Bravo Generating Station. The technique, which PNM developed at the request of the City of Albuquerque, is designed to provide a conservative estimate of the various components that contribute to PM emissions from the combustion turbine. The PM emissions from the facility will be continuously minimized by the work practice standards that PNM has proposed to be included in the permit. In addition, PNM proposes to calculate the emissions on a semi-annual basis using the technique described herein to provide a quantitative estimate of particulate emissions for the purpose of confirming continuous compliance with the facility's PM permit limits.

The proposed approach considers the various factors that contribute to the total PM emissions from the unit. The total PM limits in the permit include both filterable PM and condensable PM (CPM) under standard atmospheric conditions that are either present in the flue gas or form immediately as the flue gas mixes with the atmosphere and condense. The permit includes both total PM₁₀ and PM_{2.5} limits, which address only the PM with diameters less than 10 micrometers or 2.5 micrometers, respectively. However, given the nature of the fuel and combustion, the majority of the PM emissions from the turbine are expected to be PM_{2.5} or smaller, so the PM₁₀ and PM_{2.5} values are expected to be similar.

Summary of PM Emission Components

There are four potential components (two filterable PM components and two condensable PM components) that together comprise the PM emissions combustion turbines such as Rio Bravo Generating Station:



Attachment D: PM Compliance Method for Rio Bravo Combustion Turbine

NO_x Control Water PM: Another source of filterable PM emissions from the RBGS includes the minute impurities remaining in the purified, de-mineralized water that is injected into the unit to help control nitrogen oxide (NO_x) emissions.¹ As the water is injected and vaporized, the impurities form filterable PM that can be emitted from the stack. To estimate this PM component, PNM proposes to assume that 100% of the dissolved solids in the filtered, de-mineralized water used to control the NO_x emissions from the turbine will become PM emissions. PNM will calculate the water PM component from the measured water flow and the dissolved solids determined based on laboratory analysis.

Fuel Ash PM: The second component of filterable PM comes from the inert "ash" component of the fuels combusted in the unit. While the natural gas combusted by the turbine contains no ash, the fuel oil may contain some ash that could produce PM emissions. To estimate the fuel ash component of filterable PM, PNM will rely on fuel oil ash analysis in conjunction with the oil usage to calculate the fuel ash PM component whenever oil is combusted by the unit. While ash analysis is not required under 40 CFR Part 75, PNM will conduct ash analysis for any sample collected for oil sulfur analysis, as described in the next section.

SO₃ Related PM: In the combustion process, the sulfur naturally contained in the fuel will be combusted and form SO₂. A small portion of the SO₂ will form SO₃, which ultimately will combine with the water vapor and form H₂SO₄ when it condenses as the flue gas leaves the stack and mixes with the atmosphere. PNM proposes to calculate the potential SO₃-related PM component using the approach developed by EPRI and detailed in *Estimating Total Sulfuric Acid Emissions from Stationary Power Plants*. EPRI, Palo Alto, CA: 2012. 1023790.

Table D-1 of the EPRI report shows that the SO₃ formation in combustion (both oil and gas) is related to the turbine exhaust temperature. For convenience, an abbreviated version of the table from the EPRI report is shown below:

¹ Water can also be used for inlet cooling to enhance the peak performance of the turbine. When used, the cooling water is introduced at the inlet to reduce the combustion air temperature. However, in this case, the water is not completely evaporated and mist eliminators installed upstream of the compressor inlet remove any carry-over. The dissolved solids are likely to remain in the residual water and little if any particulate would be introduced to the turbine.

Table D-1: "FI" SO₃ Formation Factors for a Simple Combustion Turbine

Exhaust Temperature, °F	"FI" Factor
900	0.00039
950	0.00022
1000	0.00013
1050	0.00008
1100	0.00005
1150	0.00003
1200	0.00002

Regardless of whether oil or gas was combusted, PNM will assume that all of the sulfur in the fuel will first be converted to SO₂. Then, based on the typical exhaust temperature of 1100°F, the SO₃ formation factor is expected to be 0.00005. For oil, fuel sulfur analysis data will be used to calculate the estimated amount of SO₃ formed in the combustion process. PNM will sample and analyze the oil to determine the sulfur content in accordance with the procedures in Appendix D of 40 CFR Part 75. For natural gas, PNM will estimate the sulfur content using the conservative 0.5 grain/scf value defined as the upper bound for pipeline quality natural gas under 40 CFR Part 75.

Organic Related PM: Consistent with assertions by GE (the turbine manufacturer), PNM believes that the combustion process itself does not result in significant PM formation from the unit. While, in theory, large chain hydrocarbons can form when combusting natural gas or #2 diesel oil, these transitory hydrocarbons will most likely be oxidized well before they could be detected in the exhaust.

Nevertheless, PNM is proposing, as a conservative measure, to use the VOC test results as a surrogate for the organic PM component and assume that 100% of the VOCs from the unit actually represent condensable PM emissions. This approach will likely be highly conservative since most of the VOCs (e.g., methane, ethane, propane, isobutane, butane, neopentane, ethylene, propene, I-butene, cis-2-butene, trans-2-butene and ethyne)² are not condensable at standard conditions.

² These "non-condensing" components tend to represent over 99% of the VOC emissions from gas-fired turbines. (*NOx and VOC Species Profiles for Gas-Fired Stationary Combustion Sources, Volume 1: Final Report*. Prepared by Energy and Environmental Research for the California Environmental Protection Agency Air Resources Board Research Division, January 1995. Table 5-4.)

Summary of Proposed Compliance Demonstration

Based on the analysis provided above, PNM proposes the following calculation as an alternative method for demonstrating compliance with the PM permit limits contained in the Rio Bravo Generating Station air quality permits. This calculation does not include the PM attributable to the ambient air because of the particularly insignificant nature of that PM component.

$$PM_{10} = 3.06(F1)S_{fuel}Q_{fuel} + A_{fuel}Q_{fuel} + PM_{water}Q_{water} + PM_{organic}$$

where:

PM_{10}	=	Total particulate emissions (lb/hr)
3.06	=	Conversion factor (mass ratio for H_2SO_4 to sulfur)
F1	=	Fraction of sulfur in fuel converted to SO_3/H_2SO_4 (from Table 6-1 of EPRI Report #1023790) (0.0005 @ 1100°F)
S_{fuel}	=	Sulfur concentration of fuel (lb/100 scf for gas, ppm for oil)
Q_{fuel}	=	Fuel burned (100 scf/hr for gas, lb/hr for oil)
A_{fuel}	=	Fuel ash concentration (% oil only, zero ash assumed for gas)
PM_{water}	=	Total dissolved solids in NOx control water (ppm)
Q_{water}	=	Water used for NOx control (lbs/hr)
$PM_{organic}$	=	Organic PM component based on 2000 VOC test results (lb/hr)