



AUG 04 2011

Gregory E. Salyer  
Modesto Irrigation District  
PO Box 4060  
Modesto, CA 95352

**Re: Notice of Preliminary Decision - Federally Mandated Operating Permit  
District Facility # N-4940  
Project # N-1071091**

Dear Mr. Salyer:

Enclosed for your review and comment is the District's analysis of Modesto Irrigation District's application for the Federally Mandated Operating Permit for its Power Generation Facility at 1015 South Stockton Avenue in Ripon, California.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Sincerely,



David Warner  
Director of Permit Services

cc: Gurpreet Brar, Permit Services Engineer

Attachments

**Seyed Sadredin**  
Executive Director/Air Pollution Control Officer

---

**Northern Region**  
4800 Enterprise Way  
Modesto, CA 95356-8718  
Tel: (209) 557-6400 FAX: (209) 557-6475

**Central Region (Main Office)**  
1990 E. Gettysburg Avenue  
Fresno, CA 93726-0244  
Tel: (559) 230-6000 FAX: (559) 230-6061

**Southern Region**  
34946 Flyover Court  
Bakersfield, CA 93308-9725  
Tel: 661-392-5500 FAX: 661-392-5585



AUG 04 2011

Gerardo C. Rios, Chief  
Permits Office (AIR-3)  
U.S. EPA - Region IX  
75 Hawthorne St  
San Francisco, CA 94105

**Re: Notice of Preliminary Decision - Federally Mandated Operating Permit  
District Facility # N-4940  
Project # N-1071091**

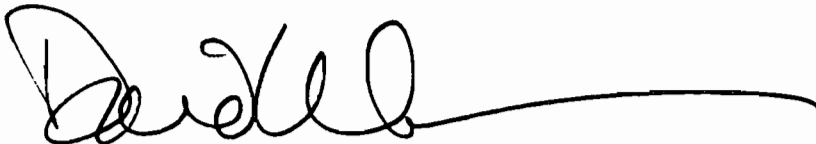
Dear Mr. Rios:

Enclosed for your review and comment is the District's analysis of Modesto Irrigation District's application for the Federally Mandated Operating Permit for its Power Generation Facility at 1015 South Stockton Avenue in Ripon, California.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 45-day comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Sincerely,



David Warner  
Director of Permit Services

cc: Gurpreet Brar, Permit Services Engineer

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AUG 04 2011

Mike Tollstrup, Chief  
Project Assessment Branch  
Air Resources Board  
P O Box 2815  
Sacramento, CA 95812-2815

**Re: Notice of Preliminary Decision - Federally Mandated Operating Permit  
District Facility # N-4940  
Project # N-1071091**

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of Modesto Irrigation District's application for the Federally Mandated Operating Permit for its Power Generation Facility at 1015 South Stockton Avenue in Ripon, California.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Sincerely,



David Warner  
Director of Permit Services

cc: Gurpreet Brar, Permit Services Engineer

Attachments

**Seyed Sadredin**  
Executive Director/Air Pollution Control Officer

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Stockton Record

**NOTICE OF PRELIMINARY DECISION  
FOR THE PROPOSED ISSUANCE OF  
FEDERALLY MANDATED OPERATING PERMITS**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Air Pollution Control District solicits public comment on the proposed issuance of the Federally Mandated Operating permits to Modesto Irrigation District for its Power Generation Facility at 1015 South Stockton Avenue in Ripon, California.

The District's analysis of the legal and factual basis for this proposed action, project #N-1071091, is available for public inspection at [http://www.valleyair.org/notices/public\\_notices\\_idx.htm](http://www.valleyair.org/notices/public_notices_idx.htm) and the District office at the address below. There are no emission changes associated with this proposed action. This will be the public's only opportunity to comment on the specific conditions of the proposed Federally Mandated Operating initial permits. If requested by the public, the District will hold a public hearing regarding issuance of this initial permit. For additional information, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900. Written comments on the proposed initial permit must be submitted within 30 days of the publication date of this notice to DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 1990 E. GETTYSBURG AVE, FRESNO, CALIFORNIA 93726-0244.

# **SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT**

**Modesto Irrigation District**

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## **INITIAL TITLE V PERMIT APPLICATION REVIEW**

**Project #: N-1071091**  
**Deemed Complete: April 3, 2007**

Engineer: Gurpreet Brar  
Date: August 2, 2011

Facility Number: N-4940  
Facility Name: Modesto Irrigation District  
Mailing Address: PO Box 4060  
Modesto, CA 95352

Contact Name: Gregory E. Salyer  
Phone: (209) 526-7550

Responsible Official: Gregory E. Salyer  
Title: Resource Planning and Development Manager

### **I. PROPOSAL**

Modesto Irrigation District is proposing that an initial Title V permit be issued for its peaking power generation facility located in Ripon. The purpose of this evaluation is to identify all applicable requirements, determine if the facility will comply with those applicable requirements, and to provide the legal and factual basis for proposed permit conditions.

### **II. FACILITY LOCATION**

Modesto Irrigation District is located at 1015 South Stockton Avenue in Ripon, CA.

### **III. EQUIPMENT LISTING**

A detailed facility printout listing all permitted equipment at the facility is shown in Attachment A.

A summary of the exempt equipment categories, which describe the insignificant activities or equipment at the facility not requiring a permit, is shown in Attachment B. This equipment is not exempt from facility-wide requirements.

### **IV. GENERAL PERMIT TEMPLATE USAGE**

The applicant has requested to use the facility-wide umbrella general permit template (SJV-UM-03). Based on the information submitted in the Template Qualification Form, the applicant qualifies for the use of this template.

### **V. SCOPE OF EPA AND PUBLIC REVIEW**

Certain segments of the proposed Operating Permit are based on model general permit templates that have been previously subject to EPA and public review. The terms and conditions from the model general permit templates are included in the proposed permit and are not subject to further EPA and public review.

For permit applications utilizing model general permit templates, public and agency comments on the District's proposed actions are limited to the applicant's eligibility for model general permit template, applicable requirements not covered by the model general permit template, and the applicable procedural requirements for issuance of Title V Operating Permits.

- Conditions 1 through 40 of permit unit N-4940-0-1, including their underlying applicable requirements, originate from the model general permit template and are not subject to further EPA and Public review.

## VI. APPLICABLE REQUIREMENTS

### A. Rules Addressed by General Permit Template

- District Rule 1100, Equipment Breakdown, (amended December 17, 1992)
- District Rule 1160, Emission Statements, (adopted November 18, 1992)
- District Rule 2010, Permits Required, (amended December 17, 1992)
- District Rule 2020, Exemptions, (amended December 20, 2007)
- District Rule 2031, Transfer of Permits, (amended December 17, 1992)
- District Rule 2040, Applications, (amended December 17, 1992)
- District Rule 2070, Standards for Granting Applications, (amended December 17, 1992)
- District Rule 2080, Conditional Approval, (amended December 17, 1992)
- District Rule 2520, Federally Mandated Operating Permits, (amended June 21, 2001 )
- District Rule 4101, Visible Emissions, (amended February 17, 2005)
- District Rule 4601, Architectural Coatings, (amended December 17, 2009)
- District Rule 8021, Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities, (amended August 19, 2004)
- District Rule 8031, Bulk Materials, (amended August 19, 2004)
- District Rule 8041, Carryout and Trackout, (amended August 19, 2004)
- District Rule 8051, Open Areas, (amended August 19, 2004)



- District Rule 8061, Paved and Unpaved Roads, (amended August 19, 2004)
- District Rule 8071, Unpaved Vehicle/Equipment Traffic Areas, (amended September 16, 2004)
- 40 CFR Part 61, Subpart M, National Emission Standard for Asbestos, (amended September 18, 2003)
- 40 CFR Part 82, Subpart B, Stratospheric Ozone, (amended November 9, 2007)
- 40 CFR Part 82, Subpart F, Stratospheric Ozone, (amended June 8, 2008)

#### **B. Rules Not Addressed by General Permit Template**

- District Rule 1080, Stack Monitoring, (amended December 17, 1992)
- District Rule 1081, Source Sampling, (amended December 16, 1993)
- District Rule 2201, New and Modified Stationary Source Review Rule, (amended April 21, 2011)
- District Rule 2520, Federally Mandated Operating Permits, (amended June 21, 2001 )
- District Rule 4201, Particulate Matter Concentration, (amended December 17, 1992)
- District Rule 4703, Stationary Gas Turbines, (amended August 17, 2006)
- District Rule 4801, Sulfur Compounds, (amended December 17, 1992)
- 40 CFR Part 60 Subpart A, General Provisions – Excess Emission Reports, Conducting Performance Tests, Continuous Emission Monitoring Requirements

- 40 CFR 60 Subpart GG, Standards of Performance for Stationary Gas Turbines
- 40 CFR 60 Subpart KKKK, Standards of Performance for Stationary Gas Turbines
- 40 CFR 63 Subpart YYYY, National Emissions Standards for Hazardous Air Pollutants for Stationary Combustion Turbines
- 40 CFR Part 64, Compliance Assurance Monitoring (CAM)
- 40 CFR Part 72, Acid Rain Program
- 40 CFR Part 73, Sulfur Dioxide Allowance System
- 40 CFR Part 75, Continuous Emission Monitoring
- 40 CFR Part 77, Excess Emissions

## VII. REQUIREMENTS NOT FEDERALLY ENFORCEABLE

For each Title V source, the District issues a single permit that contains the Federally Enforceable requirements, as well as the District-only requirements. The District-only requirements are not part of the Title V operating permit. The terms and conditions that are part of the facility's Title V permit are designated as Federally Enforceable Through Title V Permit.

This facility is subject to the following rules that are not currently federally enforceable:

### 1. **District Rule 4102, Nuisance**

The purpose of this rule is to protect the health and safety of the public. The rule was last amended on December 17, 1992, and the current version has not been approved into the SIP.

#### a. **N-4940-0-1: FACILITYWIDE REQUIREMENTS**

Condition 41 of the facilitywide requirements is based on Rule 4102 and is therefore not federally enforceable.

**b. N-4940-1-3 & -2-3: 47.5 MW NATURAL GAS-FIRED TURBINE**

Condition 32 on the proposed permits to operate ensure compliance with the requirements of this rule and is therefore not federally enforceable.

**VIII. COMPLIANCE**

**1. District Rule 1080, Stack Monitoring**

This Rule grants the APCO the authority to request the installation and use of continuous emissions monitors (CEMs), and specifies performance standards for the equipment and administrative requirements for record keeping, reporting, and notification. The rule was last amended on December 17, 1992, and was approved into the SIP on April 26, 2004.

Section 4.0 requires that upon the request of the APCO and as directed by him, the owner shall provide, install, and operate continuous monitoring equipment on such operations as directed. The owner shall maintain, calibrate, and repair the equipment and shall keep the equipment operating at design capabilities.

Section 6.4 requires that cycling times shall be those specified in 40 CFR, Part 51, Appendix P, Sections 3.4, 3.4.1 and 3.4.2, or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the Environmental Protection Agency.

Section 6.5 and 6.6 require that the continuous NO<sub>x</sub> and O<sub>2</sub> monitors shall meet the applicable performance specification requirements in 40 CFR, Part 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the Environmental Protection Agency.

Section 7.1 requires that a person operating or using a stack-monitoring system shall upon written notice from the APCO, provide a summary of the data obtained from such systems. This summary of data shall be in the form and the manner prescribed by the APCO.

Section 7.2 requires that data shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement of the District, the ARB and the Environmental Protection Agency.

Section 8.0 requires that the owner or operator shall submit a written report of CEM operations for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include the following: time intervals, data and magnitude of excess NO<sub>x</sub> emissions, nature and the cause of excess (if known), corrective actions taken and preventative measures adopted; averaging period used for data reporting corresponding to the averaging period specified in the emission test period and used to determine compliance with an emissions standard; Applicable time and date of each period during which the CEM was inoperative (monitor downtime), except for zero and span checks, and the nature of system repairs and adjustments; a negative declaration when no excess emissions occurred.

Section 11.0 requires that the APCO or an authorized representative shall inspect, as he determines to be necessary, the monitoring devices required by this rule to ensure that such devices are functioning properly.

**N-4940-1-3 & -2-3 (47.5 MW EACH NATURAL GAS-FIRED TURBINES):**

For these permit units, conditions 6, 8, 9, 11, 12, 13, 14 and 52 on the proposed permits to operate ensure compliance with the requirements of this rule.

**2. District Rule 1081, Source Sampling**

District Rule 1081 was last amended on December 16, 1993, and was approved into the SIP on April 26, 2004.

The purpose of this rule is to ensure that any source operation which emits or may emit air contaminants provides adequate and safe facilities for use in sampling to determine compliance. This rule also specifies methods and procedures for source testing, sample collection, and compliance determination.

Section 3.0 stipulates that upon request and direction of the APCO, the owner of any source operation which emits or may emit air contaminants for which emission limits have been established shall provide sampling ports, sampling platforms, and access to sampling platforms, constructed in accordance with the general industry safety orders of the State of California.

Section 4.0 stipulates that the owner of such a source operation, when requested by the APCO, shall provide records or other information which will enable the APCO to determine when a representative sample can be taken. In addition, upon the request of the APCO and as directed by him, the owner of such a source operation shall collect, have collected, or allow the APCO to collect, a source sample.

Sections 5.0 stipulates that if a test method is not specified in the applicable rule, the test shall be conducted in accordance with Title 40 CFR Subpart 60 Appendix A - Reference Methods, except source tests for PM10 for compliance with Rule 2201 (New and Modified Stationary Source Review) requirements, which shall be conducted in accordance with Title 40 CFR Subpart 51, Appendix M, Method 201 or 201A. This section further specifies that if no test method exists in the preceding references for a source type, source sampling shall be conducted in accordance with CARB approved methods.

Section 6.0 stipulates that: (a) for the purpose of determining compliance with an applicable standard or numerical limitation, the arithmetic mean of three (3) test runs shall apply, unless two (2) of the three (3) results are above the applicable limit; (b) a scheduled source test may not be discontinued solely due to the failure of one or more runs to meet applicable standards; (c) in the event that a sample is accidentally lost or conditions occur in which one (1) of the three (3) runs must be discontinued because circumstances beyond the owner or operators control, upon the APCO's approval, compliance may be determined using the arithmetic mean of the other two (2) runs.

Section 7.0 specifies administrative requirements, including the following: (a) the District must be notified 30 days prior to any compliance source testing and the owner shall submit a source test plan for District approval 15 days prior to source sampling; (b) source sampling to determine the compliance status of an emissions source shall be witnessed or authorized by District personnel; and (c) source test reports must be submitted to the District within 60 days of completion of field testing, regardless of pass or fail status.

**N-4940-1-3 & -2-3 (47.5 MW EACH NATURAL GAS-FIRED TURBINES):**

For these permit units, conditions 10, 36 through 44 and 49 on the proposed permits to operate ensure compliance with the requirements of this rule.

**3. District Rule 2201, New and Modified Stationary Source Review Rule (District NSR Rule)**

For this facility, all the emission units have become subject to the District NSR Rule due to application for Authority to Construct (ATC). In accordance with the White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTOs were addressed to define how NSR permit terms should be incorporated into the Title V permit.

**N-4940-1-3 & -2-3 (47.5 MW EACH NATURAL GAS-FIRED TURBINES):**

For these permit units, conditions 1, 3 through 7, 15 through 18, 22 through 31, 33, 34, 35, 39 through 42, 44 and 55 on the proposed permits to operate ensure compliance with the requirements of this rule.

**4. District Rule 2520, Federally Mandated Operating Permits**

Section 13.2 provides that compliance with permit conditions in part 70 permits that expressly state that a permit shield exists shall be deemed compliance with the applicable requirements on which the permit conditions are based.

**N-4940-0-1: FACILITY-WIDE REQUIREMENTS**

Condition 5, 8 through 21, 26, 36 through 40 and 43 on the facility-wide requirements ensure compliance with the requirements of this rule.

There are no federally applicable Greenhouse Gas (GHG) requirements for this source. It should be noted that the Mandatory Greenhouse Gas Reporting rule (40CFR Part 98) is not included in the definition of an applicable requirement within Title V (per 40CFR 71.2). Therefore, there will be no further discussion of GHG in this evaluation.

**5. District Rule 4201, Particulate Matter Concentration**

District Rule 4201 was last amended on December 17, 1992, and was approved into the SIP on April 4, 2002.

The purpose of this rule is to protect the ambient air quality by establishing a particulate matter emission standard.

Section 3.0 stipulates that a person shall not release or discharge into the atmosphere from any single source operation, dust, fumes, or total suspended particulate matter emissions in excess of 0.1 grain per cubic foot of gas at dry standard conditions, as determined by the test methods in section 4.0. Section 4.0 specifies the test methods for demonstration of compliance with section 3.0.

**N-4940-0-1: FACILITY-WIDE REQUIREMENTS**

Condition 42 on the facility-wide requirements ensures compliance with the requirements of this rule.

**6. District Rule 4703, Stationary Gas Turbines**

The purpose of this rule is to limit oxides of nitrogen (NO<sub>x</sub>) emissions from stationary gas turbine systems. This rule is applicable to all stationary gas turbine systems, which are subject to District permitting requirements, and with ratings equal to or greater than 0.3 megawatt (MW) or a maximum heat input rating of more than 3,000,000 Btu per hour, except as provided in Section 4.0.

Section 5.1.1 (Tier I) of this rule limits the NO<sub>x</sub> emissions from stationary gas turbine systems greater than 10 MW, and equipped with Selective Catalytic Reduction (SCR), based on the following equation:

$$\text{NO}_x \text{ (ppmv @ 15\% O}_2\text{)} = 9 \times \left( \frac{\text{EFF}}{25} \right)$$

Where EFF is the higher of EFF<sub>1</sub> or EFF<sub>2</sub>, and:

$$\text{EFF}_1 = \frac{3,412 \frac{\text{Btu}}{\text{kW-hr}}}{\text{Actual Heat Rate @ HHV} \left( \frac{\text{Btu}}{\text{kW-hr}} \right)} \times 100, \text{ and } \text{EFF}_2 = \text{EFF}_{\text{MFR}} \frac{\text{LHV}}{\text{HHV}}$$

For the subject equipment, the Actual Heat Rate @ HHV is 7,815 Btu/kW-hr. Therefore:

$$EFF_1 = \frac{3,412 \frac{\text{Btu}}{\text{kW-hr}}}{7,815 \frac{\text{Btu}}{\text{kW-hr}}} \times 100 = 43.66\%$$

$$\text{NO}_x \text{ limit utilizing } EFF_1 = 9 \times \left( \frac{43.66}{25} \right) = 15.7 \text{ ppmvd @ } 15\% \text{ O}_2$$

EFF<sub>2</sub> calculations are not necessary since Rule 4703 emission limits will be no lower than 9 ppmv NO<sub>x</sub> and the subject turbines will be limited to a maximum of 2.5 ppmv NO<sub>x</sub> @ 15% O<sub>2</sub> (based on a 1-hour average).

Section 5.1.2 (Tier 2) of this rule limits the NO<sub>x</sub> emissions from simple cycle, stationary gas turbine systems rated at greater than 10 MW and allowed to operate more than 876 hours per year to 5 ppmv @ 15% O<sub>2</sub> (Standard option) and 3 ppmv @ 15% O<sub>2</sub> (Enhanced Option). Section 7.2.1 (Table 7-1) sets a compliance date of April 30, 2004 for the Standard Option and Section 7.2.4 sets a compliance date of April 30, 2008 for the Enhanced Option. The subject turbines are limited to 2.5 ppmv @ 15% O<sub>2</sub> (based on a 1-hour average).

Section 5.2 limits the CO emissions concentration from the subject turbines to less than 200 ppmvd @ 15% O<sub>2</sub>.

Section 5.3 provides that NO<sub>x</sub> and CO emission limits of Section 5.1 and Section 5.2 shall not apply during a transitional operation period, which includes bypass transition period, as defined in Section 3.0, provided an operator complies with the applicable requirements specified in Sections 5.3.1 and 5.3.2.

Section 5.3.1 requires the an operator to meet the following conditions:

- The duration of each startup or each shutdown shall not exceed two hours, and the duration of each reduced load period shall not exceed one hour.
- The emission control system shall be in operation and emissions shall be minimized insofar as technologically feasible during startup, shutdown, or a reduced load period.
- An operator may submit an application to allow more than two hours for each startup or each shutdown or more than one hour for each reduced load period provided the operator meets all of the conditions specified in the rule.



Section 5.3.2 requires the emission control system to be in operation and emissions shall be minimized insofar as technologically feasible during each transitional operation period.

Section 6.2.1 requires the owner to operate and maintain continuous emissions monitoring equipment for NO<sub>x</sub> and oxygen, or install and maintain APCO-approved alternate monitoring.

Section 6.2.4 requires the facility to maintain all records for a period of five years from the date of data entry and to make such records available to the APCO upon request.

Section 6.2.6 requires the facility to maintain a stationary gas turbine system operating log that includes, on a daily basis, the actual local startup and stop time, length and reason for reduced load periods, total hours of operation, and the type and quantity of fuel used.

Section 6.2.8 requires owners or operators performing startups or shutdowns to keep records of the duration of each startup and shutdown.

Section 6.3.1 states that the owner or operator of any stationary gas turbine system subject to the provisions of Section 5.0 of this rule shall provide source test information annually regarding the exhaust gas NO<sub>x</sub> and CO concentrations.

Section 6.3.1 states that the owner or operator of any stationary gas turbine system subject to the provisions of Section 5.0 of this rule shall provide source test information annually regarding the exhaust gas NO<sub>x</sub> and CO concentrations.

Section 6.4 states that the facility must demonstrate compliance annually with the NO<sub>x</sub> and CO emission limits using the following test methods, unless otherwise approved by the APCO and EPA:

- Oxides of nitrogen emissions for compliance tests shall be determined by using EPA Method 7E or EPA Method 20.
- Carbon monoxide emissions for compliance tests shall be determined by using EPA Test Methods 10 or 10B.
- Oxygen content of the exhaust gas shall be determined by using EPA Methods 3, 3A, or 20.
- HHV and LHV of gaseous fuels shall be determined by using ASTM D3588-91, ASTM 1826-88, or ASTM 1945-81.

**N-4940-1-3 & -2-3 (47.5 MW EACH NATURAL GAS-FIRED TURBINES):**

For these permit units, conditions 5 through 7, 18, 19, 20, 22, 23, 33 39, 40, 44, 45, 49, 53, 54 and 56 on the proposed permits to operate ensure compliance with the requirements of this rule.

**7. District Rule 4801 and County Rule 407 - Sulfur Compounds**

District Rule 4801 was last amended on December 17, 1992, and has been submitted to the EPA to replace Stanislaus County Rule 407 in the SIP. This District Rule is at least as stringent as the county rule, as demonstrated by the comparison below:

Comparison of District Rule 4801 and Stanislaus County Rule 407		
REQUIREMENT	Rule 4801	Rule 407
A person shall not discharge into the atmosphere sulfur compounds exceeding in concentration at the point of discharge 0.2 percent by volume calculated as sulfur dioxide on a dry basis averaged over 15 consecutive minutes.	✓	✓
EPA Method 8 and ARB Method 1-100 shall be used to determine such emissions.	✓	

Both District Rule 4801 and County Rule 407 stipulate a limit on sulfur compounds. The limit at the point of discharge is 0.2 percent by volume, which is 2,000 ppmv, calculated as sulfur dioxide (SO<sub>2</sub>), on a dry basis averaged over 15 consecutive minutes. Since this limit is the same for both rules, District Rule 4801 is at least as stringent as the county rule.

Compliance is expected as shown by the following calculations at 1 grain of total sulfur per 100 standard cubic feet of gas, assuming all sulfur is converted to SO<sub>2</sub>.

$$\begin{aligned} \%S(\text{lb/lbNG}) &= \left( \frac{1 \text{ gr}}{100 \text{ scf}} \right) \left( \frac{1 \text{ lb}}{7000 \text{ gr}} \right) \left( \frac{24.5 \text{ L}}{\text{mol NG}} \right) \left( \frac{1 \text{ mol}}{16 \text{ g}} \right) \left( \frac{454 \text{ g}}{1 \text{ lb}} \right) \left( \frac{0.035 \text{ scf}}{1 \text{ L}} \right) (100) \\ &= 0.00348\% \text{ sulfur by weight} \end{aligned}$$

$$\begin{aligned} \text{lb SO}_2/\text{scf gas} &= (0.0000348)(1 \text{ lb}/23.8 \text{ scf gas})(64 \text{ lb SO}_2/32 \text{ lb S}) \\ &= 2.92 \text{ E-6 lb SO}_2/\text{scf gas} \\ \text{lb SO}_2/V_{\text{exhaust}} &= (\text{lb SO}_2/\text{scf gas}) \div (\text{F factor}) (\text{Btu content of gas}) \end{aligned}$$

$$\left(\frac{\text{lb SO}_2}{V_{\text{exhaust}}}\right) = \frac{\left(2.92 \text{ E} - 6 \frac{\text{lb SO}_2}{\text{scf gas}}\right) \left(\frac{10^6 \text{ Btu}}{\text{MMBtu}}\right)}{\left(8710 \frac{\text{dscf}}{\text{MMBtu}}\right) \left(\frac{1000 \text{ Btu}}{\text{scf}}\right)} = 3.35 \text{ E} - 7 \frac{\text{lb SO}_2}{\text{dscf exhaust}}$$

$$V_{\text{SO}_2}/V_{\text{exhaust}} = nRT/P$$

where,

- n = moles SO<sub>2</sub> = (3.35 E-7 lb SO<sub>2</sub>/dscf exhaust)/(64 lb SO<sub>2</sub>/ lb-mol)
- R = universal gas constant = 10.73 psi-ft<sup>3</sup>/lb-mol- R
- T = standard temperature = 60 °F = 520 °R
- P = standard pressure = 14.7 psi

$$\text{Therefore, } \left(\frac{V_{\text{SO}_2}}{V_{\text{exhaust}}}\right) = \frac{\left(\frac{3.35 \text{ E} - 6 \text{ lb SO}_2}{\text{dscf exhaust}}\right) \left(\frac{10.73 \text{ psi} - \text{ft}^3}{\text{lb} - \text{mole} - \text{°R}}\right) (520 \text{ °R})}{\left(\frac{64 \text{ lb SO}_2}{\text{lb} - \text{mol}}\right) (14.7 \text{ psi})} = 1.99 \text{ E} - 6 \frac{\text{dscf}}{\text{dscf exhaust}}$$

$$= 1.99 \text{ ppmv dry} \ll 2,000 \text{ ppmv}$$

Compliance with 2,000 ppmv is assured because the subject turbines are limited to using only natural gas with sulfur content of 1.0 gr/100 scf.

**N-4940-1-3 & -2-3 (47.5 MW EACH NATURAL GAS-FIRED TURBINES):**

For these permit units, condition 15 on the proposed permits to operate ensure compliance with the requirements of this rule.

**8. 40 CFR Part 60 Subpart A, General Provisions – Excess Emission Reports, Conducting Performance Tests, Continuous Emission Monitor Requirements**

This subpart contains requirements for reporting of excess emissions (60.7), conducting performance tests (60.8), and performance standards for CEMS (60.13). These requirements are subsumed within the monitoring, recordkeeping, and reporting requirements associated with the NOx requirements from District Rules 4703 and 1081. Therefore, the permit units N-4940-1-3 & -2-3 comply with the requirements 40 CFR 60 Subpart A.

9. **40 CFR 60 Subpart GG, Standards of Performance for Stationary Gas Turbines**

40 CFR Part 60 Subpart GG applies to all stationary gas turbines with a heat input greater than 10.7 gigajoules per hour (10.2 MMBtu/hr), that commence construction, modification, or reconstruction after October 3, 1977.

However, 40 CFR 60 Subpart KKKK, Section 60.4305(b), states that stationary combustion turbines regulated under this subpart are exempt from the requirements of 40 CFR 60 Subpart GG. Since this facility's turbines are subject to 40 CFR 60 Subpart KKKK as discussed in the following section, they are exempt from the requirements of 40 CFR 60 Subpart GG.

10. **40 CFR 60 Subpart KKKK, Standards of Performance for Stationary Gas Turbines**

40 CFR Part 60 Subpart KKKK applies to all stationary gas turbines rated at greater than or equal to 10 MMBtu/hr that commence construction, modification, or reconstruction after February 18, 2005.

Subpart KKKK established requirements for nitrogen oxide (NO<sub>x</sub>) and sulfur dioxide (SO<sub>x</sub>) emissions.

Section 60.4320 - Standards for Nitrogen Oxides:

Paragraph (a) states that NO<sub>x</sub> emissions shall not exceed the emission limits specified in Table 1 of this subpart. Paragraph (b) states that if you have two or more turbines that are connected to a single generator, each turbine must meet the emission limits for NO<sub>x</sub>. Table 1 states that new turbines firing natural gas with a combustion turbine heat input at peak load of greater than 850 MMBtu/hr shall meet a NO<sub>x</sub> emissions limit of 15 ppmvd @ 15% O<sub>2</sub> or 54 ng/J of useful output (0.43 lb/MWh).

Section 60.4330 - Standards for Sulfur Dioxide:

Paragraph (a) states that if your turbine is located in a continental area, you must comply with one of the following:

- (1) Operator must not cause to be discharged into the atmosphere from the subject stationary combustion turbine any gases which contain SO<sub>2</sub> in excess of 110 nanograms per Joule (ng/J) (0.90) pounds per megawatt-hour (lb/MWh)) gross output; or
- (2) Operator must not burn in the subject stationary combustion turbine any fuel which contains total potential sulfur emissions in excess of 26 ng SO<sub>2</sub>/J (0.060 lb SO<sub>2</sub>/MMBtu) heat input.

Section 60.4335 – NO<sub>x</sub> Compliance Demonstration, with Water or Steam Injection:

Paragraph (a) states that when a turbine is using water or steam injection to reduce NO<sub>x</sub> emissions, you must install, calibrate, maintain and operate a continuous monitoring system to monitor and record the fuel consumption and the ratio of water or steam to fuel being fired in the turbine when burning a fuel that requires water or steam injection for compliance.

Paragraph (b) states that alternatively, an operator may use continuous emission monitoring, as follows:

- (1) Install, certify, maintain and operate a continuous emissions monitoring system (CEMS) consisting of a NO<sub>x</sub> monitor and a diluent gas (oxygen (O<sub>2</sub>) or carbon dioxide (CO<sub>2</sub>)) monitor, to determine hourly NO<sub>x</sub> emission rate in parts per million (ppm) or pounds per million British thermal units (lb/MMBtu); and
- (2) For units complying with the output-based standard, install, calibrate, maintain and operate a fuel flow meter (or flow meters) to continuously measure the heat input to the affected unit; and
- (3) For units complying with the output based standard, install, calibrate, maintain and operate a watt meter (or meters) to continuously measure the gross electrical output of the unit in megawatt-hours; and
- (4) For combined heat and power units complying with the output-based standard, install, calibrate, maintain and operate meters for useful recovered energy flow rate, temperature, and pressure, to continuously measure the total thermal energy output in British thermal units per hour (Btu/h).

Section 60.4345 – CEMS Equipment Requirements:

Paragraph (a) states that each NO<sub>x</sub> diluent CEMS must be installed and certified according to Performance Specification 2 (PS 2) in appendix B to this part, except the 7-day calibration drift is based on unit operating days, not calendar days. With state approval, Procedure 1 in appendix F to this part is not required. Alternatively, a NO<sub>x</sub> diluent CEMS that is installed and certified according to appendix A of part 75 of this chapter is acceptable for use under this subpart. The relative accuracy test audit (RATA) of the CEMS shall be performed on a lb/MMBtu basis.

Paragraph (b) states that as specified in §60.13(e)(2), during each full unit operating hour, both the NO<sub>x</sub> monitor and the diluent monitor must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each 15-minute quadrant of the hour, to validate the hour. For partial unit operating hours, at least one valid data point must be obtained with each monitor for each quadrant of the hour in which the unit operates. For unit operating hours in which required quality assurance and maintenance activities are performed on the CEMS, a minimum of two valid data points (one in each of two quadrants) are required for each monitor to validate the NO<sub>x</sub> emission rate for the hour.

Paragraph (c) states that each fuel flow meter shall be installed, calibrated, maintained, and operated according to the manufacturer's instructions. Alternatively, with state approval, fuel flow meters that meet the installation, certification, and quality assurance requirements of appendix D to part 75 of this chapter are acceptable for use under this subpart.

Paragraph (d) states that each watt meter, steam flow meter, and each pressure or temperature measurement device shall be installed, calibrated, maintained, and operated according to manufacturer's instructions.

Paragraph (e) states that the owner or operator shall develop and keep on-site a quality assurance (QA) plan for all of the continuous monitoring equipment described in paragraphs (a), (c), and (d) of this section. For the CEMS and fuel flow meters, the owner or operator may, with state approval, satisfy the requirements of this paragraph by implementing the QA program and plan described in section 1 of appendix B to part 75 of this chapter.

Section 60.4350 – CEMS Data and Excess NO<sub>x</sub> Emissions:

Section 60.4350 states that for purposes of identifying excess emissions:

- (a) All CEMS data must be reduced to hourly averages as specified in §60.13(h).
- (b) For each unit operating hour in which a valid hourly average, as described in §60.4345(b), is obtained for both NO<sub>x</sub> and diluent monitors, the data acquisition and handling system must calculate and record the hourly NO<sub>x</sub> emission rate in units of ppm or lb/MMBtu, using the appropriate equation from method 19 in appendix A of this part. For any hour in which the hourly average O<sub>2</sub> concentration exceeds 19.0 percent O<sub>2</sub> (or the hourly average CO<sub>2</sub> concentration is less than 1.0 percent CO<sub>2</sub>), a diluent cap value of 19.0 percent O<sub>2</sub> or 1.0 percent CO<sub>2</sub> (as applicable) may be used in the emission calculations.
- (c) Correction of measured NOX concentrations to 15 percent O2 is not allowed.
- (d) If you have installed and certified a NOX diluent CEMS to meet the requirements of part 75 of this chapter, states can approve that only quality assured data from the CEMS shall be used to identify excess emissions under this subpart. Periods where the missing data substitution procedures in subpart D of part 75 are applied are to be reported as monitor downtime in the excess emissions and monitoring performance report required under §60.7(c).
- (e) All required fuel flow rate, steam flow rate, temperature, pressure, and megawatt data must be reduced to hourly averages.
- (f) Calculate the hourly average NOX emission rates, in units of the emission standards under §60.4320, using either ppm for units complying with the concentration limit or the equations 1 (simple cycle turbines) or 2 (combined cycle turbines) listed in §60.4350, paragraph (f).

Sections 60.4360, 60.4365 and 60.4370 – Monitoring of Fuel Sulfur Content:

Section 60.4360 states that an operator must monitor the total sulfur content of the fuel being fired in the turbine, except as provided in §60.4365. The sulfur content of the fuel must be determined using total sulfur methods described in §60.4415. Alternatively, if the total sulfur content of the gaseous fuel during the most recent performance test was less than half the applicable limit, ASTM D4084, D4810, D5504, or D6228, or Gas Processors Association Standard 2377 (all of which are incorporated by reference, see §60.17), which measure the major sulfur compounds, may be used.

Section 60.4365 states that an operator may elect not to monitor the total sulfur content of the fuel combusted in the turbine, if the fuel is demonstrated not to exceed potential sulfur emissions of 26 ng SO<sub>2</sub>/J (0.060 lb SO<sub>2</sub>/MMBtu) heat input for units located in continental areas and 180 ng SO<sub>2</sub>/J (0.42 lb SO<sub>2</sub>/MMBtu) heat input for units located in noncontinental areas or a continental area that the Administrator determines does not have access to natural gas and that the removal of sulfur compounds would cause more environmental harm than benefit. You must use one of the following sources of information to make the required demonstration:

- (a) The fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the fuel, specifying that the maximum total sulfur content for oil use in continental areas is 0.05 weight percent (500 ppmw) or less and 0.4 weight percent (4,000 ppmw) or less for noncontinental areas, the total sulfur content for natural gas use in continental areas is 20 grains of sulfur or less per 100 standard cubic feet and 140 grains of sulfur or less per 100 standard cubic feet for noncontinental areas, has potential sulfur emissions of less than less than 26 ng SO<sub>2</sub>/J (0.060 lb SO<sub>2</sub>/MMBtu) heat input for continental areas and has potential sulfur emissions of less than less than 180 ng SO<sub>2</sub>/J (0.42 lb SO<sub>2</sub>/MMBtu) heat input for noncontinental areas; or
- (b) Representative fuel sampling data which show that the sulfur content of the fuel does not exceed 26 ng SO<sub>2</sub>/J (0.060 lb SO<sub>2</sub>/MMBtu) heat input for continental areas or 180 ng SO<sub>2</sub>/J (0.42 lb SO<sub>2</sub>/MMBtu) heat input for noncontinental areas. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of appendix D to part 75 of this chapter is required.



Section 60.4370 states that the frequency of determining the sulfur content of the fuel must be as follows:

- (a) *Fuel oil.* For fuel oil, use one of the total sulfur sampling options and the associated sampling frequency described in sections 2.2.3, 2.2.4.1, 2.2.4.2, and 2.2.4.3 of appendix D to part 75 of this chapter (*i.e.*, flow proportional sampling, daily sampling, sampling from the unit's storage tank after each addition of fuel to the tank, or sampling each delivery prior to combining it with fuel oil already in the intended storage tank).
- (b) Gaseous fuel. If you elect not to demonstrate sulfur content using options in §60.4365, and the fuel is supplied without intermediate bulk storage, the sulfur content value of the gaseous fuel must be determined and recorded once per unit operating day.
- (c) Custom schedules. Notwithstanding the requirements of paragraph (b) of this section, operators or fuel vendors may develop custom schedules for determination of the total sulfur content of gaseous fuels, based on the design and operation of the affected facility and the characteristics of the fuel supply. Except as provided in paragraphs (c)(1) and (c)(2) of this section, custom schedules shall be substantiated with data and shall be approved by the Administrator before they can be used to comply with the standard in §60.4330.

Section 60.4380 – Excess NO<sub>x</sub> Emissions:

Section 60.4380 establishes reporting requirements for periods of excess emissions and monitor downtime. Paragraph (a) lists requirements for operators choosing to monitor parameters associated with water or steam to fuel ratios. As discussed above, PEC is not proposing to monitor parameters associated with water or steam to fuel ratios to predict what the NO<sub>x</sub> emissions from the turbines will be. Therefore, the requirements of this paragraph are not applicable and no further discussion is required.

Paragraph (b) states that for turbines using CEMs:

- (1) An excess emissions is any unit operating period in which the 4-hour or 30-day rolling average NO<sub>x</sub> emission rate exceeds the applicable emission limit in §60.4320. For the purposes of this subpart, a “4-hour rolling average NO<sub>x</sub> emission rate” is the arithmetic average of the average NO<sub>x</sub> emission rate in ppm or ng/J (lb/MWh) measured by the continuous emission monitoring equipment for a given hour and the three unit operating hour average NO<sub>x</sub> emission rates immediately preceding that unit operating hour. Calculate the rolling average if a valid NO<sub>x</sub> emission rate is obtained for at least 3 of the 4 hours. For the purposes of this subpart, a “30-day rolling average NO<sub>x</sub> emission rate” is the arithmetic average of all hourly NO<sub>x</sub> emission data in ppm or ng/J (lb/MWh) measured by the continuous emission monitoring equipment for a given day and the twenty-nine unit operating days immediately preceding that unit operating day. A new 30-day average is calculated each unit operating day as the average of all hourly NO<sub>x</sub> emissions rates for the preceding 30 unit operating days if a valid NO<sub>x</sub> emission rate is obtained for at least 75 percent of all operating hours.
- (2) A period of monitor downtime is any unit operating hour in which the data for any of the following parameters are either missing or invalid: NO<sub>x</sub> concentration, CO<sub>2</sub> or O<sub>2</sub> concentration, fuel flow rate, steam flow rate, steam temperature, steam pressure, or megawatts. The steam flow rate, steam temperature, and steam pressure are only required if you will use this information for compliance purposes.
- (3) For operating periods during which multiple emissions standards apply, the applicable standard is the average of the applicable standards during each hour. For hours with multiple emissions standards, the applicable limit for that hour is determined based on the condition that corresponded to the highest emissions standard.

Section 60.4385 – Excess SO<sub>x</sub> Emissions:

Section 60.4385 states that if an operator chooses the option to monitor the sulfur content of the fuel, excess emissions and monitoring downtime are defined as follows:

- (a) For samples of gaseous fuel and for oil samples obtained using daily sampling, flow proportional sampling, or sampling from the unit's storage tank, an excess emission occurs each unit operating hour included in the period beginning on the date and hour of any sample for which the sulfur content of the fuel being fired in the combustion turbine exceeds the applicable limit and ending on the date and hour that a subsequent sample is taken that demonstrates compliance with the sulfur limit.
- (b) If the option to sample each delivery of fuel oil has been selected, you must immediately switch to one of the other oil sampling options (i.e., daily sampling, flow proportional sampling, or sampling from the unit's storage tank) if the sulfur content of a delivery exceeds 0.05 weight percent. You must continue to use one of the other sampling options until all of the oil from the delivery has been combusted, and you must evaluate excess emissions according to paragraph (a) of this section. When all of the fuel from the delivery has been burned, you may resume using the as-delivered sampling option.
- (c) A period of monitor downtime begins when a required sample is not taken by its due date. A period of monitor downtime also begins on the date and hour of a required sample, if invalid results are obtained. The period of monitor downtime ends on the date and hour of the next valid sample.

Sections 60.4375, 60.4380, 60.4385 and 60.4395 – Reporting:

These sections establish the reporting requirements for each turbine. These requirements include methods and procedures for submitting reports of monitoring parameters, annual performance tests, excess emissions and periods of monitor downtime.

Section 60.4400 – NO<sub>x</sub> Performance Testing:

Section 60.4400, paragraph (a) states that an operator must conduct an initial performance test, as required in §60.8. Subsequent NO<sub>x</sub> performance tests shall be conducted on an annual basis (no more than 14 calendar months following the previous performance test). Paragraphs (1), (2) and (3) set forth the requirements for the methods that are to be used during source testing.

Section 60.4415– SO<sub>x</sub> Performance Testing:

Section 60.4415 states that an operator must conduct an initial performance test, as required in §60.8. Subsequent SO<sub>2</sub> performance tests shall be conducted on an annual basis (no more than 14 calendar months following the previous performance test). There are three methodologies that you may use to conduct the performance tests.

- (1) If you choose to periodically determine the sulfur content of the fuel combusted in the turbine, a representative fuel sample would be collected following ASTM D5287 (incorporated by reference, see §60.17) for natural gas or ASTM D4177 (incorporated by reference, see §60.17) for oil. Alternatively, for oil, you may follow the procedures for manual pipeline sampling in section 14 of ASTM D4057 (incorporated by reference, see §60.17). The fuel analyses of this section may be performed either by you, a service contractor retained by you, the fuel vendor, or any other qualified agency. Analyze the samples for the total sulfur content of the fuel using:
  - (i) For liquid fuels, ASTM D129, or alternatively D1266, D1552, D2622, D4294, or D5453 (all of which are incorporated by reference, see §60.17); or
  - (ii) (ii) For gaseous fuels, ASTM D1072, or alternatively D3246, D4084, D4468, D4810, D6228, D6667, or Gas Processors Association Standard 2377 (all of which are incorporated by reference, see §60.17).

**N-4940-1-3 & -2-3 (47.5 MW EACH NATURAL GAS-FIRED TURBINES):**

For these permit units, conditions 2, 5, 6, 11, 12, 14, 15, 21, 22, 33, 39, 46 and 52 on the proposed permits to operate ensure compliance with the requirements of this rule.

**11. 40 CFR 63 Subpart YYYY, National Emissions Standards for Hazardous Air Pollutants for Stationary Combustion Turbines**

This subpart 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.

Pursuant to section 63.6085(a), a major source of HAP emissions is a contiguous site under common control that emits or has the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year. The facility is not a major source of HAP emissions and is not subject to this subpart.

**N-4940-1-3 & -2-3 (47.5 MW EACH NATURAL GAS-FIRED TURBINES):**

For these permit units, condition 47 and 48 on the proposed permits to operate ensure compliance with the requirements of this rule.

**12. 40 CFR Part 64, Compliance Assurance Monitoring (CAM)**

To be subject to CAM for a particular pollutant, an emissions unit must meet all of the following criteria:

- i. The unit must have an emission limit for the pollutant,
- ii. The unit must have add-on controls for the pollutant, and
- iii. The pre-control potential to emit for the unit must exceed major source thresholds.

**N-4940-1-3 & -2-3 (47.5 MW EACH NATURAL GAS-FIRED TURBINES):**

- 1) These units contain emission limits for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC.
- 2) There are no add-on controls for SO<sub>x</sub> or PM<sub>10</sub> emissions. Therefore, these are not subject to CAM for SO<sub>x</sub> or PM<sub>10</sub> emissions. These units are equipped with add-on control devices (SCR) for NO<sub>x</sub> emissions and have continuous emission monitoring systems (CEMS) for NO<sub>x</sub> and CO emissions, therefore, these are exempt from additional CAM requirements. The standard conditions that require the CEMs to be installed, calibrated, maintained, and require the data to be reported ensure that the equipment will remain exempt from CAM requirements. However, this permit unit may be subject to CAM for VOC emissions as it has add-on control in the form of an oxidation catalytic system.

- 3) The pre-control VOC emissions from each of these units is calculated based on the uncontrolled emission factor of 1.6 lb-VOC/hr or 2.0 ppmv @ 15% O<sub>2</sub> and maximum operating time of 8,760 hr/yr.

$$1.6 \text{ lb-VOC/hr} \times 8,760 \text{ hrs/yr} = \mathbf{14,016 \text{ lb-VOC/yr.}}$$

The pre-control VOC potential to emit is less than the major source threshold of 20,000 lb-VOC/year as shown above. Therefore, this unit is not subject to CAM for VOC emissions.

**13. 40 CFR 60 Part 72, Acid Rain Program**

The purpose of this part is to establish certain general provisions and the operating permit program requirements for affected sources and affected units under the Acid Rain Program.

**N-4940-1-3 & -2-3 (47.5 MW EACH NATURAL GAS-FIRED TURBINES):**

For these permit units, conditions 57, 63, 65, 66, 67 and 70 on the proposed Title V operating permits ensure compliance with the requirements of this part.

**14. 40 CFR 60 Part 73, Sulfur Dioxide Allowance System**

The purpose of this part is to establish the requirements and procedures for the following:

- (a) The allocation of sulfur dioxide emissions allowances;
- (b) The tracking, holding, and transfer of allowances;
- (c) The deduction of allowances for purposes of compliance and for purposes of offsetting excess emissions pursuant to parts 72 and 77;
- (d) The sale of allowances through EPA-sponsored auctions and a direct sale, including the independent power producers written guarantee program; and
- (e) The application for, and distribution of, allowances from the Conservation and Renewable Energy Reserve.
- (f) The application for, and distribution of, allowances for desulfurization of fuel by small diesel refineries.

**N-4940-1-3 & -2-3 (47.5 MW EACH NATURAL GAS-FIRED TURBINES):**

For these permit units, conditions 60 and 64 on the proposed Title V operating permits ensure compliance with the requirements of this part.

**15. 40 CFR 60 Part 75, Continuous Emission Monitoring**

The purpose of this part is to establish requirements for the monitoring, recordkeeping, and reporting of sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), and carbon dioxide (CO<sub>2</sub>) emissions, volumetric flow, and opacity data from affected units under the Acid Rain Program.

**N-4940-1-3 & -2-3 (47.5 MW EACH NATURAL GAS-FIRED TURBINES):**

For these permit units, conditions 58, 59, 61, 71 and 72 on the proposed Title V operating permits ensure compliance with the requirements of this part.

**16. 40 CFR 60 Part 77, Excess Emissions**

This part sets forth the excess emissions offset planning and offset penalty requirements under section 411 of the Clean Air Act. These requirements shall apply to the owners and operators and, to the extent applicable, the designated representative of each affected unit and affected source under the Acid Rain Program.

**N-4940-1-3 & -2-3 (47.5 MW EACH NATURAL GAS-FIRED TURBINES):**

For these permit units, conditions 61, 68 and 69 on the proposed Title V operating permits ensure compliance with the requirements of this part.

## **IX. PERMIT SHIELD**

A permit shield legally protects a facility from enforcement of the shielded regulations when a source is in compliance with the terms and conditions of the Title V permit. Compliance with the terms and conditions of the Operating Permit is considered compliance with all applicable requirements upon which those conditions are based, including those that have been subsumed. The following permit shields are granted as requested by the applicant:

### **N-4940-0-1: FACILITY-WIDE REQUIREMENTS**

A permit shield is being granted for facilitywide requirements in conditions 39 and 40 of the proposed facility-wide permit to operate.

## **X. PERMIT CONDITIONS**

See proposed permit to operate conditions beginning on the following page.



# San Joaquin Valley Air Pollution Control District

FACILITY: N-4940-0-1

EXPIRATION DATE: 03/31/2016

## FACILITY-WIDE REQUIREMENTS

1. {4362} The owner or operator shall notify the District of any breakdown condition as soon as reasonably possible, but no later than one hour after its detection, unless the owner or operator demonstrates to the District's satisfaction that the longer reporting period was necessary. [District Rule 1100, 6.1; County Rules 110 (Fresno, Stanislaus, San Joaquin); 109 (Merced); 113 (Madera); and 111 (Kern, Tulare, Kings)] Federally Enforceable Through Title V Permit
2. {4363} The District shall be notified in writing within ten days following the correction of any breakdown condition. The breakdown notification shall include a description of the equipment malfunction or failure, the date and cause of the initial failure, the estimated emissions in excess of those allowed, and the methods utilized to restore normal operations. [District Rule 1100, 7.0; County Rules 110 (Fresno, Stanislaus, San Joaquin); 109 (Merced); 113 (Madera); and 111 (Kern, Tulare, Kings)] Federally Enforceable Through Title V Permit
3. {4364} The owner or operator of any stationary source operation that emits more than 25 tons per year of nitrogen oxides or reactive organic compounds, shall provide the District annually with a written statement in such form and at such time as the District prescribes, showing actual emissions of nitrogen oxides and reactive organic compounds from that source. [District Rule 1160, 5.0] Federally Enforceable Through Title V Permit
4. {4365} Any person building, altering or replacing any operation, article, machine, equipment, or other contrivance, the use of which may cause the issuance of air contaminants or the use of which may eliminate, reduce, or control the issuance of air contaminants, shall first obtain an Authority to Construct (ATC) from the District unless exempted by District Rule 2020 (12/20/07). [District Rule 2010, 3.0 and 4.0; and 2020] Federally Enforceable Through Title V Permit
5. {4366} The permittee must comply with all conditions of the permit including permit revisions originated by the District. All terms and conditions of a permit that are required pursuant to the Clean Air Act (CAA), including provisions to limit potential to emit, are enforceable by the EPA and Citizens under the CAA. Any permit noncompliance constitutes a violation of the CAA and the District Rules and Regulations, and is grounds for enforcement action, for permit termination, revocation, reopening and reissuance, or modification; or for denial of a permit renewal application. [District Rules 2070, 7.0; 2080; and 2520, 9.9.1 and 9.13.1] Federally Enforceable Through Title V Permit
6. {4367} A Permit to Operate or an Authority to Construct shall not be transferred unless a new application is filed with and approved by the District. [District Rule 2031] Federally Enforceable Through Title V Permit
7. {4368} Every application for a permit required under Rule 2010 (12/17/92) shall be filed in a manner and form prescribed by the District. [District Rule 2040] Federally Enforceable Through Title V Permit
8. {4369} The operator shall maintain records of required monitoring that include: 1) the date, place, and time of sampling or measurement; 2) the date(s) analyses were performed; 3) the company or entity that performed the analysis; 4) the analytical techniques or methods used; 5) the results of such analysis; and 6) the operating conditions at the time of sampling or measurement. [District Rule 2520, 9.4.1] Federally Enforceable Through Title V Permit

FACILITY-WIDE REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate. Any amendments to these Facility-wide Requirements that affect specific Permit Units may constitute modification of those Permit Units.

Facility Name: MODESTO IRRIGATION DISTRICT  
Location: 1015 S STOCKTON AVE, RIPON, CA 95366  
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9. {4370} The operator shall retain records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, or report. Support information includes copies of all reports required by the permit and, for continuous monitoring instrumentation, all calibration and maintenance records and all original strip-chart recordings. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
10. {4371} The operator shall submit reports of any required monitoring at least every six months unless a different frequency is required by an applicable requirement. All instances of deviations from permit requirements must be clearly identified in such reports. [District Rule 2520, 9.5.1] Federally Enforceable Through Title V Permit
11. {4372} Deviations from permit conditions must be promptly reported, including deviations attributable to upset conditions, as defined in the permit. For the purpose of this condition, promptly means as soon as reasonably possible, but no later than 10 days after detection. The report shall include the probable cause of such deviations, and any corrective actions or preventive measures taken. All required reports must be certified by a responsible official consistent with section 10.0 of District Rule 2520 (6/21/01). [District Rules 2520, 9.5.2 and 1100, 7.0] Federally Enforceable Through Title V Permit
12. {4373} If for any reason a permit requirement or condition is being challenged for its constitutionality or validity by a court of competent jurisdiction, the outcome of such challenge shall not affect or invalidate the remainder of the conditions or requirements in that permit. [District Rule 2520, 9.7] Federally Enforceable Through Title V Permit
13. {4374} It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. [District Rule 2520, 9.8.2] Federally Enforceable Through Title V Permit
14. {4375} The permit may be modified, revoked, reopened and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition. [District Rule 2520, 9.8.3] Federally Enforceable Through Title V Permit
15. {4376} The permit does not convey any property rights of any sort, or any exclusive privilege. [District Rule 2520, 9.8.4] Federally Enforceable Through Title V Permit
16. {4377} The Permittee shall furnish to the District, within a reasonable time, any information that the District may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the District copies of records required to be kept by the permit or, for information claimed to be confidential, the permittee may furnish such records directly to EPA along with a claim of confidentiality. [District Rule 2520, 9.8.5] Federally Enforceable Through Title V Permit
17. {4378} The permittee shall pay annual permit fees and other applicable fees as prescribed in Regulation III of the District Rules and Regulations. [District Rule 2520, 9.9] Federally Enforceable Through Title V Permit
18. {4379} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to enter the permittee's premises where a permitted source is located or emissions related activity is conducted, or where records must be kept under condition of the permit. [District Rule 2520, 9.13.2.1] Federally Enforceable Through Title V Permit
19. {4380} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit. [District Rule 2520, 9.13.2.2] Federally Enforceable Through Title V Permit
20. {4381} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to inspect at reasonable times any facilities, equipment, practices, or operations regulated or required under the permit. [District Rule 2520, 9.13.2.3] Federally Enforceable Through Title V Permit
21. {4382} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or applicable requirements. [District Rule 2520, 9.13.2.4] Federally Enforceable Through Title V Permit

FACILITY-WIDE REQUIREMENTS CONTINUE ON NEXT PAGE  
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22. {4383} No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (02/17/05). If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit
23. {4384} No person shall manufacture, blend, repackage, supply, sell, solicit or apply any architectural coating with a VOC content in excess of the corresponding limit specified in Table of Standards 1 effective until 12/30/10 or Table of Standards 2 effective on and after 1/1/11 of District Rule 4601 (12/17/09) for use or sale within the District. [District Rule 4601, 5.1] Federally Enforceable Through Title V Permit
24. {4385} All VOC-containing materials subject to Rule 4601 (12/17/09) shall be stored in closed containers when not in use. [District Rule 4601, 5.4] Federally Enforceable Through Title V Permit
25. {4386} The permittee shall comply with all the Labeling and Test Methods requirements outlined in Rule 4601 sections 6.1 and 6.3 (12/17/09). [District Rule 4601, 6.1 and 6.3] Federally Enforceable Through Title V Permit
26. {4387} With each report or document submitted under a permit requirement or a request for information by the District or EPA, the permittee shall include a certification of truth, accuracy, and completeness by a responsible official. [District Rule 2520, 9.13.1 and 10.0] Federally Enforceable Through Title V Permit
27. {4388} If the permittee performs maintenance on, or services, repairs, or disposes of appliances, the permittee shall comply with the standards for Recycling and Emissions Reduction pursuant to 40 CFR Part 82, Subpart F. [40 CFR 82 Subpart F] Federally Enforceable Through Title V Permit
28. {4389} If the permittee performs service on motor vehicles when this service involves the ozone-depleting refrigerant in the motor vehicle air conditioner (MVAC), the permittee shall comply with the standards for Servicing of Motor Vehicle Air Conditioners pursuant to all the applicable requirements as specified in 40 CFR Part 82, Subpart B. [40 CFR Part 82, Subpart B] Federally Enforceable Through Title V Permit
29. {4390} Disturbances of soil related to any construction, demolition, excavation, extraction, or other earthmoving activities shall comply with the requirements for fugitive dust control in District Rule 8021 unless specifically exempted under Section 4.0 of Rule 8021 (8/19/2004) or Rule 8011 (8/19/2004). [District Rule 8021 and 8011] Federally Enforceable Through Title V Permit
30. {4391} Outdoor handling, storage and transport of any bulk material which emits dust shall comply with the requirements of District Rule 8031, unless specifically exempted under Section 4.0 of Rule 8031 (8/19/2004) or Rule 8011 (8/19/2004). [District Rule 8031 and 8011] Federally Enforceable Through Title V Permit
31. {4392} An owner/operator shall prevent or cleanup any carryout or trackout in accordance with the requirements of District Rule 8041 Section 5.0, unless specifically exempted under Section 4.0 of Rule 8041 (8/19/2004) or Rule 8011 (8/19/2004). [District Rule 8041 and 8011] Federally Enforceable Through Title V Permit
32. {4393} Whenever open areas are disturbed, or vehicles are used in open areas, the facility shall comply with the requirements of Section 5.0 of District Rule 8051, unless specifically exempted under Section 4.0 of Rule 8051 (8/19/2004) or Rule 8011 (8/19/2004). [District Rule 8051 and 8011] Federally Enforceable Through Title V Permit
33. {4394} Any paved road or unpaved road shall comply with the requirements of District Rule 8061 unless specifically exempted under Section 4.0 of Rule 8061 (8/19/2004) or Rule 8011 (8/19/2004). [District Rule 8061 and Rule 8011] Federally Enforceable Through Title V Permit

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34. {4395} Any unpaved vehicle/equipment area that anticipates more than 50 Average annual daily Trips (AADT) shall comply with the requirements of Section 5.1.1 of District Rule 8071. Any unpaved vehicle/equipment area that anticipates more than 150 vehicle trips per day (VDT) shall comply with the requirements of Section 5.1.2 of District Rule 8071. On each day that 25 or more VDT with 3 or more axles will occur on an unpaved vehicle/equipment traffic area, the owner/operator shall comply with the requirements of Section 5.1.3 of District Rule 8071. On each day when a special event will result in 1,000 or more vehicles that will travel/park on an unpaved area, the owner/operator shall comply with the requirements of Section 5.1.4 of District Rule 8071. All sources shall comply with the requirements of Section 5.0 of District Rule 8071 unless specifically exempted under Section 4.0 of Rule 8071 (9/16/2004) or Rule 8011 (8/19/2004). [District Rule 8071 and Rule 8011] Federally Enforceable Through Title V Permit
35. {4396} Any owner or operator of a demolition or renovation activity, as defined in 40 CFR 61.141, shall comply with the applicable inspection, notification, removal, and disposal procedures for asbestos containing materials as specified in 40 CFR 61.145 (Standard for Demolition and Renovation). [40 CFR 61 Subpart M] Federally Enforceable Through Title V Permit
36. {4397} The permittee shall submit certifications of compliance with the terms and standards contained in Title V permits, including emission limits, standards and work practices, to the District and the EPA annually (or more frequently as specified in an applicable requirement or as specified by the District). The certification shall include the identification of each permit term or condition, the compliance status, whether compliance was continuous or intermittent, the methods used for determining the compliance status, and any other facts required by the District to determine the compliance status of the source. [District Rule 2520, 9.16] Federally Enforceable Through Title V Permit
37. {4398} The permittee shall submit an application for Title V permit renewal to the District at least six months, but not greater than 18 months, prior to the permit expiration date. [District Rule 2520, 5.2] Federally Enforceable Through Title V Permit
38. {4399} When a term is not defined in a Title V permit condition, the definition in the rule cited as the origin and authority for the condition in a Title V permits shall apply. [District Rule 2520, 9.1.1] Federally Enforceable Through Title V Permit
39. {4400} Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following outdated SIP requirements: Rule 401 (Madera, Fresno, Kern, Kings, San Joaquin, Stanislaus, Tulare and Merced), Rule 110 (Fresno, Stanislaus, San Joaquin), Rule 109 (Merced), Rule 113 (Madera), Rule 111 (Kern, Tulare, Kings), and Rule 202 (Fresno, Kern, Tulare, Kings, Madera, Stanislaus, Merced, San Joaquin). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
40. {4401} Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: SJVUAPCD Rules 1100, sections 6.1 and 7.0 (12/17/92); 2010, sections 3.0 and 4.0 (12/17/92); 2031 (12/17/92); 2040 (12/17/92); 2070, section 7.0 (12/17/92); 2080 (12/17/92); 4101 (2/17/05); 4601 (12/17/09); 8021 (8/19/2004); 8031 (8/19/2004); 8041 (8/19/2004); 8051 (8/19/2004); 8061 (8/19/2004); and 8071 (9/16/2004). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
41. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
42. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
43. On xxx, the initial Title V permit was issued. The reporting periods for the Report of Required Monitoring and the Compliance Certification Report are based upon this initial permit issuance date, unless alternative dates are approved by the District Compliance Division. These reports are due within 30 days after the end of the reporting period. [District Rule 2520] Federally Enforceable Through Title V Permit

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# San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-4940-1-3

EXPIRATION DATE: 03/31/2016

## EQUIPMENT DESCRIPTION:

47.5 MW NOMINALLY RATED SIMPLE-CYCLE PEAK-DEMAND POWER GENERATING SYSTEM CONSISTING OF A 500 MMBTU/HR GENERAL ELECTRIC, MODEL LM6000 SPRINT, NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR WITH A WATER SPRAY PREMIXED COMBUSTION SYSTEM, SERVED BY A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION AND AN OXIDATION CATALYST

## PERMIT UNIT REQUIREMENTS

1. All equipment shall be maintained in proper operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
2. The permittee shall operate and maintain the turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction. [40 CFR 60.4333(a)] Federally Enforceable Through Title V Permit
3. A selective catalytic reduction (SCR) system and an oxidation catalyst shall serve the gas turbine engine. Exhaust ducting shall be equipped with a fresh air inlet blower to be used to lower the exhaust temperature prior to the inlet of the SCR system catalyst. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The gas turbine engine and generator lube oil vents shall be equipped with mist eliminators or equivalent technology sufficient to limit the visible emissions from the lube oil vents to not exceed 5% opacity, except for a period not exceeding three minutes in any one hour. [District Rule 2201] Federally Enforceable Through Title V Permit
5. The turbine shall be equipped with a continuous monitoring system to measure and record hours of operation, mass ratio of water-to-fuel injected and fuel consumption. [District Rules 2201 and 4703, 6.2; and 40 CFR 60.4335(b)] Federally Enforceable Through Title V Permit
6. The exhaust stack shall be equipped with a continuous emissions monitor (CEM) for NO<sub>x</sub>, CO, and O<sub>2</sub>. The CEM shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as during normal operating conditions. [District Rules 1080, 2201 and 4703, 6.2.1; and 40 CFR 60.4335(b)(1)] Federally Enforceable Through Title V Permit
7. The permittee shall monitor and record the fuel flow rate, NO<sub>x</sub> emission rate, CO emission rate, ammonia injection rate, exhaust temperature both prior to and after the SCR system, exhaust oxygen content and exhaust flow rate. [District Rules 2201 and 4703, 6.2] Federally Enforceable Through Title V Permit
8. The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080] Federally Enforceable Through Title V Permit
9. Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE  
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10. The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NO<sub>x</sub>, CO, and O<sub>2</sub> analyzer during District inspections. The sampling ports shall be located in accordance with the CARB regulation titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Source Emission Monitoring and Testing. [District Rule 1081] Federally Enforceable Through Title V Permit
11. The CEMS shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the EPA. [District Rule 1080, 6.4 and 40 CFR 60.4345(b)] Federally Enforceable Through Title V Permit
12. Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080 and 40 CFR 60.4350] Federally Enforceable Through Title V Permit
13. In accordance with 40 CFR, Part 60, Appendix F, 5.1, cylinder gas audits (CGA) or relative accuracy audits (RAA) of the continuous emission monitors shall be conducted quarterly, except during quarters in which a relative accuracy test audit (RATA) is performed. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit
14. The owner/operator shall perform a relative accuracy test audit (RATA) as specified by 40 CFR Part 60, Appendix F, 5.11, at least once every four calendar quarters. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080 and 40 CFR 60.4345(a)] Federally Enforceable Through Title V Permit
15. The turbine shall be fired only on natural gas with a sulfur content (as S) not exceeding 1.0 grain per 100 standard cubic feet. [District Rules 2201 and 4801; and 40 CFR 60.4345(b)] Federally Enforceable Through Title V Permit
16. The NO<sub>x</sub> (as NO<sub>2</sub>) emissions during each start-up event and each shutdown event shall not exceed 20.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The CO emissions during each each start-up event and each shutdown event shall not exceed 20.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Startup shall be defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operations, and the unit meets the lb/hr and ppmvd emission limits specified within this permit. Shutdown shall be defined as the period of time during which a unit is taken from an operational to a non-operational status as the fuel supply to the unit is completely turned off. Start-up and shutdown period emissions shall be counted toward all applicable emission limits (lb/day and lb/year). [District Rules 2201 and 4703, 3.26, 3.29 and 5.3] Federally Enforceable Through Title V Permit
19. Duration of each start-up and each shutdown event shall not exceed two hours. [District Rule 4703, 5.3.1.1] Federally Enforceable Through Title V Permit
20. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4703, 5.3.2] Federally Enforceable Through Title V Permit
21. Excess emissions shall be defined as any operating hour in which the 4-hour or 30-day rolling average NO<sub>x</sub> concentration exceeds applicable emissions limit and a period of monitor downtime shall be any unit operating hour in which sufficient data are not obtained to validate the hour for either NO<sub>x</sub> or O<sub>2</sub> (or both). [40 CFR 60.4380(b)(1)] Federally Enforceable Through Title V Permit
22. The NO<sub>x</sub> (as NO<sub>2</sub>) emissions from this unit, except during start-up and shutdown events, shall not exceed either of the following: 4.53 lb/hr or 2.5 ppmvd @ 15% O<sub>2</sub>. The emission concentration limit is based on a three-hour rolling average. [District Rules 2201 and 4703, 5.1.2; and 40 CFR 60.4320(a) & (b)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE  
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23. The CO emissions from this unit, except during start-up and shutdown events, shall not exceed either of the following: 6.62 lb/hr or 6.0 ppmvd @ 15% O<sub>2</sub>. The emission concentration limit is based on a three-hour rolling average. [District Rules 2201 and 4703, 5.2] Federally Enforceable Through Title V Permit
24. The VOC emissions from this unit shall not exceed either of the following: 1.26 lb/hr or 2.0 ppmvd @ 15% O<sub>2</sub>. The emission concentration limit is based on a three-hour rolling average. [District Rule 2201] Federally Enforceable Through Title V Permit
25. The SO<sub>x</sub> emissions shall not exceed 1.4 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
26. The PM<sub>10</sub> emissions shall not exceed 3.00 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
27. The ammonia slip emissions shall not exceed either of the following: 6.71 lb/hr or 10.0 ppmvd @ 15% O<sub>2</sub>. The emission concentration limit is based on a 24-hour rolling average. [District Rule 2201] Federally Enforceable Through Title V Permit
28. Each three hour rolling average will be compiled from the three most recent one hour periods. Each one hour period shall commence on the hour. Each one hour period in a twenty-four hour average for ammonia slip will commence on the hour. The twenty-four hour average will be calculated starting and ending at twelve-midnight. [District Rule 2201] Federally Enforceable Through Title V Permit
29. The daily emissions from this unit shall not exceed any of the following: NO<sub>x</sub> (as NO<sub>2</sub>) - 155.1 lb/day; VOC - 30.2 lb/day; CO - 158.9 lb/day; PM<sub>10</sub> - 72.0 lb/day; or SO<sub>x</sub> (as SO<sub>2</sub>) - 34.2 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
30. The annual emissions from this unit shall not exceed any of the following: NO<sub>x</sub> (as NO<sub>2</sub>) - 44,505 lb/year; VOC - 11,038 lb/year; CO - 57,991 lb/year, PM<sub>10</sub> - 26,280 lb/year; or SO<sub>x</sub> - 12,483 lb/year. All annual emission limits are based on 12 consecutive month rolling emissions totals. [District Rule 2201] Federally Enforceable Through Title V Permit
31. Daily emissions shall be compiled for a twenty-four hour period starting and ending at twelve-midnight. Each calendar month in a twelve consecutive month rolling emissions total shall commence at the beginning of the first day of the month. The twelve consecutive month rolling emissions totals used to determine compliance with annual emission limits shall be compiled from the twelve most recent calendar months. [District Rule 2201] Federally Enforceable Through Title V Permit
32. Compliance with the ammonia emission limits shall be demonstrated utilizing one of the following procedures: 1) calculate the daily ammonia emissions using the following equation:  $(\text{ppmvd @ 15\% O}_2) = ((a - (b \times c / 1,000,000)) \times (1,000,000 / b)) \times d$ , where a = ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NO<sub>x</sub> concentration ppmvd @ 15% O<sub>2</sub> across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip; 2.) utilize another District-approved calculation method using measured surrogate parameters to determine the daily ammonia emissions in ppmvd @ 15% O<sub>2</sub>. If this option is chosen, the permittee shall submit a detailed calculation protocol for District approval at least 60 days prior to commencement of operation; 3.) Alternatively, the permittee may utilize a continuous in-stack ammonia monitor to verify compliance with the ammonia emissions limit. If this option is chosen, the permittee shall submit a monitoring plan for District approval at least 60 days prior to commencement of operation. [District Rule 4102]
33. Source testing to measure the NO<sub>x</sub>, VOC, CO and ammonia slip emissions (ppmvd @ 15% O<sub>2</sub> and lb/hr) and PM<sub>10</sub> emissions (lb/hr) shall be conducted at least once every twelve months. [District Rules 2201 and 4703, 6.3.1; and 40 CFR 60.4400(a)] Federally Enforceable Through Title V Permit
34. Source testing to measure the CO emissions shall be conducted at least once every seven years. [District Rule 2201] Federally Enforceable Through Title V Permit
35. Source testing to measure the NO<sub>x</sub> emissions shall be conducted at least once every seven years. [District Rule 2201] Federally Enforceable Through Title V Permit

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36. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
37. Source testing shall be witnessed or authorized by District personnel and samples shall be collected by a California Air Resources Board (CARB) certified testing laboratory or a CARB certified source testing firm. [District Rule 1081] Federally Enforceable Through Title V Permit
38. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
39. NO<sub>x</sub> emissions (referenced as NO<sub>2</sub>) shall be determined using EPA method 7E, EPA method 20 or CARB method 20. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. The request to utilize EPA approved alternative source testing methods must be submitted in writing and written approval received from the District prior to the submission of the source test plan. [District Rules 1081, 2201 and 4703, 5.1 & 6.4.1; and 40 CFR 60.4400(1)(i)] Federally Enforceable Through Title V Permit
40. CO emissions shall be determined using EPA method 10 or EPA method 10B. [District Rules 1081, 2201 and 4703, 6.4.2] Federally Enforceable Through Title V Permit
41. VOC emissions (referenced as methane) shall be determined using EPA method 18 or EPA method 25. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
42. PM<sub>10</sub> emissions shall be determined using EPA methods 201 and 202, EPA methods 201A and 202, or CARB method 501 in conjunction with CARB method 5. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
43. Ammonia emissions shall be determined using BAAQMD method ST-1B. [District Rules 1081] Federally Enforceable Through Title V Permit
44. Oxygen content of the exhaust gas shall be determined by using EPA method 3, EPA method 3A or EPA method 20. [District Rules 1081, 2201 and 4703, 6.4.3] Federally Enforceable Through Title V Permit
45. The HHV and LHV of the fuel combusted shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit
46. The owner or operator shall demonstrate maximum total sulfur content of the fuel by maintaining a gas quality characteristics in a current, valid purchase contract, a tariff sheet or transportation contract for the fuel. [40 CFR 60.4365(a)] Federally Enforceable Through Title V Permit
47. Hazardous Air Pollutant (HAP) emissions shall not exceed 25 tons per year for total HAPS or 10 tons per year for any single HAP. [40 CFR 63.6085(b)] Federally Enforceable Through Title V Permit
48. Annual compliance with the HAPS emissions limit (25 tpy all HAPS or 10 tpy any single HAP) shall be demonstrated by the combined VOC emissions rates for the GTEs (N-4940-1 and '2) determined during annual compliance source testing and the correlation between VOC emissions and HAP(s) as determined during the initial speciated HAPS and total VOC source test. [40 CFR 63.6085(b)] Federally Enforceable Through Title V Permit
49. EPA approved alternative source testing methods will be allowed, upon District approval, provided it does not result in a relaxation of emission limitations. The request to utilize EPA approved alternative source testing methods must be submitted in writing and written approval received from the District prior to the submission of the source test plan. [District Rule 1081 and 4703, 6.4] Federally Enforceable Through Title V Permit
50. The permittee shall notify the District of any breakdown condition as soon as reasonably possible, but no later than one hour after its detection, unless the permittee demonstrates to the District's satisfaction that the longer reporting period was necessary. [District Rule 1100] Federally Enforceable Through Title V Permit
51. The District shall be notified in writing within ten days following the correction of any breakdown condition. The breakdown notification shall include a description of the equipment malfunction or failure, the date and cause of the initial failure, the estimated emissions in excess of those allowed and the methods utilized to restore normal operations. [District Rule 1100] Federally Enforceable Through Title V Permit

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52. The permittee shall submit a written report to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess emissions (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080; and 40 CFR 60.4375(a) and 60.4395] Federally Enforceable Through Title V Permit
53. The permittee shall maintain a daily stationary gas turbine system operating log that includes the actual local startup and stop time, length and reason for reduced load periods, total hours of operation and the type and quantity of fuel used. [District Rule 4703, 6.2.6] Federally Enforceable Through Title V Permit
54. The operator performing start-up or shutdown of this unit shall keep records of the duration of start-up or shutdown. [District Rule 4703, 6.2.8] Federally Enforceable Through Title V Permit
55. The permittee shall maintain the following records: date and time, duration, and type of any startup, shutdown, or malfunction; performance testing, evaluations, calibrations, checks, adjustments, any period which a continuous monitoring system or device was inoperative, and maintenance of any continuous emission monitoring system or device. [District Rule 2201] Federally Enforceable Through Title V Permit
56. All records required to be maintained by this permit shall be maintained for a period of five years and shall be made readily available for District inspection upon request. [District Rule 4703, 6.2.4] Federally Enforceable Through Title V Permit
57. The owners and operators of each affected source and each affected unit at the source shall: (i) Operate the unit in compliance with a complete Acid Rain permit application or a superceding Acid Rain permit issued by the permitting authority; and (ii) Have an Acid Rain permit. [40 CFR 72] Federally Enforceable Through Title V Permit
58. 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. [40 CFR 75] Federally Enforceable Through Title V Permit
59. The emissions measurements recorded and reported in accordance with 40 CFR part 75 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. [40 CFR 75] Federally Enforceable Through Title V Permit
60. The owners and operators of each source and each affected unit at the source shall: (i) Hold allowances, as of the allowance transfer deadline, in the 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 (ii) Comply with the applicable Acid Rain emissions limitations for sulfur dioxide. [40 CFR 73] Federally Enforceable Through Title V Permit
61. 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. [40 CFR 77] Federally Enforceable Through Title V Permit
62. An affected unit shall be subject to the sulfur dioxide requirements starting on the later of January 1, 2000, or the deadline for monitoring certification under 40 CFR part 75, an affected unit under 40 CFR 72.6(a)(3) that is not a substitution or compensating unit. [40 CFR 72, 40 CFR 75] Federally Enforceable Through Title V Permit
63. Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program. [40 CFR 72] Federally Enforceable Through Title V Permit
64. An allowance shall not be deducted in order to comply with the requirements under 40 CFR part 73, prior to the calendar year for which the allowance was allocated. [40 CFR 73] Federally Enforceable Through Title V Permit
65. An allowance allocated by the Administrator under the Acid Rain Program is a limited authorization to emit sulfur dioxide in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the Acid Rain permit application, the Acid Rain permit, or the written exemption under 40 CFR 72.7 and 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization. [40 CFR 72] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

66. An allowance allocated by the Administrator under the Acid Rain Program does not constitute a property right. [40 CFR 72] Federally Enforceable Through Title V Permit
67. The owners and operators of each affected unit at the source shall comply with the applicable Acid Rain emissions limitation for nitrogen oxides. [40 CFR 72] Federally Enforceable Through Title V Permit
68. 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. [40 CFR 77] Federally Enforceable Through Title V Permit
69. The owners and operators of an affected unit that has excess emissions in any calendar year shall: (i) Pay without demand the penalty required, and pay up on demand the interest on that penalty; and (ii) Comply with the terms of an approved offset plan, as required by 40 CFR part 77. [40 CFR 77] Federally Enforceable Through Title V Permit
70. The owners and operators of the each affected unit at the source shall keep on site the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the Administrator or permitting authority: (i) The certificate of representation for the designated representative for 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 beyond such five-year period until such documents are superceded because of the submission of a new certificate of representation changing the designated representative. [40 CFR 72] Federally Enforceable Through Title V Permit
71. The owners and operators of each affected unit at the source shall keep on site each of the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the Administrator or permitting authority; (ii) All emissions monitoring information, in accordance with 40 CFR part 75; (iii) Copies of all reports, compliance certifications and other submissions and all records made or required under the Acid Rain Program; (iv) Copies of all documents used to complete an Acid Rain permit application and any other submission that demonstrates compliance with the requirements of the Acid Rain Program. [40 CFR 75] Federally Enforceable Through Title V Permit
72. The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR 75 Subpart I. [40 CFR 75] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.

DRAFT

# San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-4940-2-3

EXPIRATION DATE: 03/31/2016

## EQUIPMENT DESCRIPTION:

47.5 MW NOMINALLY RATED SIMPLE-CYCLE PEAK-DEMAND POWER GENERATING SYSTEM CONSISTING OF A 500 MMBTU/HR GENERAL ELECTRIC, MODEL LM6000 SPRINT, NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR WITH A WATER SPRAY PREMIXED COMBUSTION SYSTEM, SERVED BY A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION AND AN OXIDATION CATALYST

## PERMIT UNIT REQUIREMENTS

1. All equipment shall be maintained in proper operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
2. The permittee shall operate and maintain the turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction. [40 CFR 60.4333(a)] Federally Enforceable Through Title V Permit
3. A selective catalytic reduction (SCR) system and an oxidation catalyst shall serve the gas turbine engine. Exhaust ducting shall be equipped with a fresh air inlet blower to be used to lower the exhaust temperature prior to the inlet of the SCR system catalyst. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The gas turbine engine and generator lube oil vents shall be equipped with mist eliminators or equivalent technology sufficient to limit the visible emissions from the lube oil vents to not exceed 5% opacity, except for a period not exceeding three minutes in any one hour. [District Rule 2201] Federally Enforceable Through Title V Permit
5. The turbine shall be equipped with a continuous monitoring system to measure and record hours of operation, mass ratio of water-to-fuel injected and fuel consumption. [District Rules 2201 and 4703, 6.2; and 40 CFR 60.4335(b)] Federally Enforceable Through Title V Permit
6. The exhaust stack shall be equipped with a continuous emissions monitor (CEM) for NO<sub>x</sub>, CO, and O<sub>2</sub>. The CEM shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as during normal operating conditions. [District Rules 1080, 2201 and 4703, 6.2.1; and 40 CFR 60.4335(b)(1)] Federally Enforceable Through Title V Permit
7. The permittee shall monitor and record the fuel flow rate, NO<sub>x</sub> emission rate, CO emission rate, ammonia injection rate, exhaust temperature both prior to and after the SCR system, exhaust oxygen content and exhaust flow rate. [District Rules 2201 and 4703, 6.2] Federally Enforceable Through Title V Permit
8. The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080] Federally Enforceable Through Title V Permit
9. Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE  
These terms and conditions are part of the Facility-wide Permit to Operate.

10. The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NO<sub>x</sub>, CO, and O<sub>2</sub> analyzer during District inspections. The sampling ports shall be located in accordance with the CARB regulation titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Source Emission Monitoring and Testing. [District Rule 1081] Federally Enforceable Through Title V Permit
11. The CEMS shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the EPA. [District Rule 1080, 6.4 and 40 CFR 60.4345(b)] Federally Enforceable Through Title V Permit
12. Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080 and 40 CFR 60.4350] Federally Enforceable Through Title V Permit
13. In accordance with 40 CFR, Part 60, Appendix F, 5.1, cylinder gas audits (CGA) or relative accuracy audits (RAA) of the continuous emission monitors shall be conducted quarterly, except during quarters in which a relative accuracy test audit (RATA) is performed. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit
14. The owner/operator shall perform a relative accuracy test audit (RATA) as specified by 40 CFR Part 60, Appendix F, 5.1.1, at least once every four calendar quarters. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080 and 40 CFR 60.4345(a)] Federally Enforceable Through Title V Permit
15. The turbine shall be fired only on natural gas with a sulfur content (as S) not exceeding 1.0 grain per 100 standard cubic feet. [District Rules 2201 and 4801; and 40 CFR 60.4345(b)] Federally Enforceable Through Title V Permit
16. The NO<sub>x</sub> (as NO<sub>2</sub>) emissions during each start-up event and each shutdown event shall not exceed 20.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The CO emissions during each each start-up event and each shutdown event shall not exceed 20.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Startup shall be defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operations, and the unit meets the lb/hr and ppmvd emission limits specified within this permit. Shutdown shall be defined as the period of time during which a unit is taken from an operational to a non-operational status as the fuel supply to the unit is completely turned off. Start-up and shutdown period emissions shall be counted toward all applicable emission limits (lb/day and lb/year). [District Rules 2201 and 4703, 3.26, 3.29 and 5.3] Federally Enforceable Through Title V Permit
19. Duration of each start-up and each shutdown event shall not exceed two hours. [District Rule 4703, 5.3.1.1] Federally Enforceable Through Title V Permit
20. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4703, 5.3.2] Federally Enforceable Through Title V Permit
21. Excess emissions shall be defined as any operating hour in which the 4-hour or 30-day rolling average NO<sub>x</sub> concentration exceeds applicable emissions limit and a period of monitor downtime shall be any unit operating hour in which sufficient data are not obtained to validate the hour for either NO<sub>x</sub> or O<sub>2</sub> (or both). [40 CFR 60.4380(b)(1)] Federally Enforceable Through Title V Permit
22. The NO<sub>x</sub> (as NO<sub>2</sub>) emissions from this unit, except during start-up and shutdown events, shall not exceed either of the following: 4.53 lb/hr or 2.5 ppmvd @ 15% O<sub>2</sub>. The emission concentration limit is based on a three-hour rolling average. [District Rules 2201 and 4703, 5.1.2; and 40 CFR 60.4320(a) & (b)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE  
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23. The CO emissions from this unit, except during start-up and shutdown events, shall not exceed either of the following: 6.62 lb/hr or 6.0 ppmvd @ 15% O<sub>2</sub>. The emission concentration limit is based on a three-hour rolling average. [District Rules 2201 and 4703, 5.2] Federally Enforceable Through Title V Permit
24. The VOC emissions from this unit shall not exceed either of the following: 1.26 lb/hr or 2.0 ppmvd @ 15% O<sub>2</sub>. The emission concentration limit is based on a three-hour rolling average. [District Rule 2201] Federally Enforceable Through Title V Permit
25. The SO<sub>x</sub> emissions shall not exceed 1.4 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
26. The PM<sub>10</sub> emissions shall not exceed 3.00 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
27. The ammonia slip emissions shall not exceed either of the following: 6.71 lb/hr or 10.0 ppmvd @ 15% O<sub>2</sub>. The emission concentration limit is based on a 24-hour rolling average. [District Rule 2201] Federally Enforceable Through Title V Permit
28. Each three hour rolling average will be compiled from the three most recent one hour periods. Each one hour period shall commence on the hour. Each one hour period in a twenty-four hour average for ammonia slip will commence on the hour. The twenty-four hour average will be calculated starting and ending at twelve-midnight. [District Rule 2201] Federally Enforceable Through Title V Permit
29. The daily emissions from this unit shall not exceed any of the following: NO<sub>x</sub> (as NO<sub>2</sub>) - 155.1 lb/day; VOC - 30.2 lb/day; CO - 158.9 lb/day; PM<sub>10</sub> - 72.0 lb/day; or SO<sub>x</sub> (as SO<sub>2</sub>) - 34.2 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
30. The annual emissions from this unit shall not exceed any of the following: NO<sub>x</sub> (as NO<sub>2</sub>) - 44,505 lb/year; VOC - 11,038 lb/year; CO - 57,991 lb/year, PM<sub>10</sub> - 26,280 lb/year; or SO<sub>x</sub> - 12,483 lb/year. All annual emission limits are based on 12 consecutive month rolling emissions totals. [District Rule 2201] Federally Enforceable Through Title V Permit
31. Daily emissions shall be compiled for a twenty-four hour period starting and ending at twelve-midnight. Each calendar month in a twelve consecutive month rolling emissions total shall commence at the beginning of the first day of the month. The twelve consecutive month rolling emissions totals used to determine compliance with annual emission limits shall be compiled from the twelve most recent calendar months. [District Rule 2201] Federally Enforceable Through Title V Permit
32. Compliance with the ammonia emission limits shall be demonstrated utilizing one of the following procedures: 1) calculate the daily ammonia emissions using the following equation:  $(\text{ppmvd @ 15\% O}_2) = ((a - (b \times c / 1,000,000)) \times (1,000,000 / b)) \times d$ , where a = ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NO<sub>x</sub> concentration ppmvd @ 15% O<sub>2</sub> across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip; 2.) utilize another District-approved calculation method using measured surrogate parameters to determine the daily ammonia emissions in ppmvd @ 15% O<sub>2</sub>. If this option is chosen, the permittee shall submit a detailed calculation protocol for District approval at least 60 days prior to commencement of operation; 3.) Alternatively, the permittee may utilize a continuous in-stack ammonia monitor to verify compliance with the ammonia emissions limit. If this option is chosen, the permittee shall submit a monitoring plan for District approval at least 60 days prior to commencement of operation. [District Rule 4102]
33. Source testing to measure the NO<sub>x</sub>, VOC, CO and ammonia slip emissions (ppmvd @ 15% O<sub>2</sub> and lb/hr) and PM<sub>10</sub> emissions (lb/hr) shall be conducted at least once every twelve months. [District Rules 2201 and 4703, 6.3.1; and 40 CFR 60.4400(a)] Federally Enforceable Through Title V Permit
34. Source testing to measure the CO emissions shall be conducted at least once every seven years. [District Rule 2201] Federally Enforceable Through Title V Permit
35. Source testing to measure the NO<sub>x</sub> emissions shall be conducted at least once every seven years. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE  
These terms and conditions are part of the Facility-wide Permit to Operate.

36. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
37. Source testing shall be witnessed or authorized by District personnel and samples shall be collected by a California Air Resources Board (CARB) certified testing laboratory or a CARB certified source testing firm. [District Rule 1081] Federally Enforceable Through Title V Permit
38. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
39. NO<sub>x</sub> emissions (referenced as NO<sub>2</sub>) shall be determined using EPA method 7E, EPA method 20 or CARB method 20. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. The request to utilize EPA approved alternative source testing methods must be submitted in writing and written approval received from the District prior to the submission of the source test plan. [District Rules 1081, 2201 and 4703, 5.1 & 6.4.1; and 40 CFR 60.4400(1)(i)] Federally Enforceable Through Title V Permit
40. CO emissions shall be determined using EPA method 10 or EPA method 10B. [District Rules 1081, 2201 and 4703, 6.4.2] Federally Enforceable Through Title V Permit
41. VOC emissions (referenced as methane) shall be determined using EPA method 18 or EPA method 25. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
42. PM<sub>10</sub> emissions shall be determined using EPA methods 201 and 202, EPA methods 201A and 202, or CARB method 501 in conjunction with CARB method 5. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
43. Ammonia emissions shall be determined using BAAQMD method ST-1B. [District Rules 1081] Federally Enforceable Through Title V Permit
44. Oxygen content of the exhaust gas shall be determined by using EPA method 3, EPA method 3A or EPA method 20. [District Rules 1081, 2201 and 4703, 6.4.3] Federally Enforceable Through Title V Permit
45. The HHV and LHV of the fuel combusted shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit
46. The owner or operator shall demonstrate maximum total sulfur content of the fuel by maintaining a gas quality characteristics in a current, valid purchase contract, a tariff sheet or transportation contract for the fuel. [40 CFR 60.4365(a)] Federally Enforceable Through Title V Permit
47. Hazardous Air Pollutant (HAP) emissions shall not exceed 25 tons per year for total HAPS or 10 tons per year for any single HAP. [40 CFR 63.6085(b)] Federally Enforceable Through Title V Permit
48. Annual compliance with the HAPS emissions limit (25 tpy all HAPs or 10 tpy any single HAP) shall be demonstrated by the combined VOC emissions rates for the GTEs (N-4940-1 and -2) determined during annual compliance source testing and the correlation between VOC emissions and HAP(s) as determined during the initial speciated HAPS and total VOC source test. [40 CFR 63.6085(b)] Federally Enforceable Through Title V Permit
49. EPA approved alternative source testing methods will be allowed, upon District approval, provided it does not result in a relaxation of emission limitations. The request to utilize EPA approved alternative source testing methods must be submitted in writing and written approval received from the District prior to the submission of the source test plan. [District Rule 1081 and 4703, 6.4] Federally Enforceable Through Title V Permit
50. The permittee shall notify the District of any breakdown condition as soon as reasonably possible, but no later than one hour after its detection, unless the permittee demonstrates to the District's satisfaction that the longer reporting period was necessary. [District Rule 1100] Federally Enforceable Through Title V Permit
51. The District shall be notified in writing within ten days following the correction of any breakdown condition. The breakdown notification shall include a description of the equipment malfunction or failure, the date and cause of the initial failure, the estimated emissions in excess of those allowed and the methods utilized to restore normal operations. [District Rule 1100] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE  
These terms and conditions are part of the Facility-wide Permit to Operate.

52. The permittee shall submit a written report to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess emissions (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080; and 40 CFR 60.4375(a) and 60.4395] Federally Enforceable Through Title V Permit
53. The permittee shall maintain a daily stationary gas turbine system operating log that includes the actual local startup and stop time, length and reason for reduced load periods, total hours of operation and the type and quantity of fuel used. [District Rule 4703, 6.2.6] Federally Enforceable Through Title V Permit
54. The operator performing start-up or shutdown of this unit shall keep records of the duration of start-up or shutdown. [District Rule 4703, 6.2.8] Federally Enforceable Through Title V Permit
55. The permittee shall maintain the following records: date and time, duration, and type of any startup, shutdown, or malfunction; performance testing, evaluations, calibrations, checks, adjustments, any period which a continuous monitoring system or device was inoperative, and maintenance of any continuous emission monitoring system or device. [District Rule 2201] Federally Enforceable Through Title V Permit
56. All records required to be maintained by this permit shall be maintained for a period of five years and shall be made readily available for District inspection upon request. [District Rule 4703, 6.2.4] Federally Enforceable Through Title V Permit
57. The owners and operators of each affected source and each affected unit at the source shall: (i) Operate the unit in compliance with a complete Acid Rain permit application or a superceding Acid Rain permit issued by the permitting authority; and (ii) Have an Acid Rain permit. [40 CFR 72] Federally Enforceable Through Title V Permit
58. 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. [40 CFR 75] Federally Enforceable Through Title V Permit
59. The emissions measurements recorded and reported in accordance with 40 CFR part 75 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. [40 CFR 75] Federally Enforceable Through Title V Permit
60. The owners and operators of each source and each affected unit at the source shall: (i) Hold allowances, as of the allowance transfer deadline, in the 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 (ii) Comply with the applicable Acid Rain emissions limitations for sulfur dioxide. [40 CFR 73] Federally Enforceable Through Title V Permit
61. 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. [40 CFR 77] Federally Enforceable Through Title V Permit
62. An affected unit shall be subject to the sulfur dioxide requirements starting on the later of January 1, 2000, or the deadline for monitoring certification under 40 CFR part 75, an affected unit under 40 CFR 72.6(a)(3) that is not a substitution or compensating unit. [40 CFR 72, 40 CFR 75] Federally Enforceable Through Title V Permit
63. Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program. [40 CFR 72] Federally Enforceable Through Title V Permit
64. An allowance shall not be deducted in order to comply with the requirements under 40 CFR part 73, prior to the calendar year for which the allowance was allocated. [40 CFR 73] Federally Enforceable Through Title V Permit
65. An allowance allocated by the Administrator under the Acid Rain Program is a limited authorization to emit sulfur dioxide in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the Acid Rain permit application, the Acid Rain permit, or the written exemption under 40 CFR 72.7 and 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization. [40 CFR 72] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE  
These terms and conditions are part of the Facility-wide Permit to Operate.

66. An allowance allocated by the Administrator under the Acid Rain Program does not constitute a property right. [40 CFR 72] Federally Enforceable Through Title V Permit
67. The owners and operators of each affected unit at the source shall comply with the applicable Acid Rain emissions limitation for nitrogen oxides. [40 CFR 72] Federally Enforceable Through Title V Permit
68. 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. [40 CFR 77] Federally Enforceable Through Title V Permit
69. The owners and operators of an affected unit that has excess emissions in any calendar year shall: (i) Pay without demand the penalty required, and pay up on demand the interest on that penalty; and (ii) Comply with the terms of an approved offset plan, as required by 40 CFR part 77. [40 CFR 77] Federally Enforceable Through Title V Permit
70. The owners and operators of the each affected unit at the source shall keep on site the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the Administrator or permitting authority: (i) The certificate of representation for the designated representative for 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 beyond such five-year period until such documents are superceded because of the submission of a new certificate of representation changing the designated representative. [40 CFR 72] Federally Enforceable Through Title V Permit
71. The owners and operators of each affected unit at the source shall keep on site each of the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the Administrator or permitting authority; (ii) All emissions monitoring information, in accordance with 40 CFR part 75; (iii) Copies of all reports, compliance certifications and other submissions and all records made or required under the Acid Rain Program; (iv) Copies of all documents used to complete an Acid Rain permit application and any other submission that demonstrates compliance with the requirements of the Acid Rain Program. [40 CFR 75] Federally Enforceable Through Title V Permit
72. The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR 75 Subpart I. [40 CFR 75] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.

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# Attachment A

## Detailed Facility Report

**Detailed Facility Report**  
For Facility=4940 and excluding Deleted Permits  
Sorted by Facility Name and Permit Number

<b>MODESTO IRRIGATION DISTRICT</b> <b>1015 S STOCKTON AVE</b> <b>RIPON, CA 95366</b>	<b>FAC #</b> STATUS: TELEPHONE:	<b>N 4940</b> <b>A</b>	<b>TYPE:</b> TOXIC ID:	<b>TitleV</b>	<b>EXPIRE ON:</b> AREA: INSP. DATE:	<b>03/31/2016</b> <b>3 /</b> <b>05/12</b>
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PERMIT NUMBER	FEE DESCRIPTION	FEE RULE	QTY	FEE AMOUNT	FEE TOTAL	PERMIT STATUS	EQUIPMENT DESCRIPTION
N-4940-1-2	47,500 kW	3020-08B G	1	10,215.00	10,215.00	A	47.5 MW NOMINALLY RATED SIMPLE-CYCLE PEAK-DEMAND POWER GENERATING SYSTEM CONSISTING OF A 500 MMBTU/HR GENERAL ELECTRIC, MODEL LM6000 SPRINT, NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR WITH A WATER SPRAY PREMIXED COMBUSTION SYSTEM, AN OXIDATION CATALYST AND A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION
N-4940-2-2	47,500 kW	3020-08B G	1	10,215.00	10,215.00	A	47.5 MW NOMINALLY RATED SIMPLE-CYCLE PEAK-DEMAND POWER GENERATING SYSTEM CONSISTING OF A 500 MMBTU/HR GENERAL ELECTRIC, MODEL LM6000 SPRINT, NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR WITH A WATER SPRAY PREMIXED COMBUSTION SYSTEM, AN OXIDATION CATALYST AND A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION

Number of Facilities Reported: 1

**Attachment B**  
**Exempt Equipment**

**San Joaquin Valley  
Unified Air Pollution Control District  
Title V Application - INSIGNIFICANT ACTIVITIES**

COMPANY NAME: **MODESTO IRRIGATION DISTRICT**

FACILITY ID: **N - 4940**

Check the box next to the exemption category from Rule 2020 which describes any insignificant activity or equipment at your facility not requiring a permit.

Exemption Category	Rule 2020 Citation	√	Exemption Category	Rule 2020 Citation	√
Structure or incinerator assoc. with a structure designed as a dwelling for 4 families or less	4.1		Containers used to store refined lubricating oils	6.6.8	√
Locomotives, airplanes, and watercraft used to transport passengers or freight	4.4		Unvented pressure vessels used exclusively to store liquified gases or assoc with exempt equipment	6.6.9 or 6.13	
Natural gas or LPG-fired boilers or other indirect heat transfer units of 5 MMBtu/hr or less	6.1.1		Portable tanks used exclusively to store produced fluids for ≤ six months	6.6.10	
Piston-type i.c. engine with maximum continuous rating of 50 braking horsepower (bhp) or less	6.1.2		Mobile transport tanks on delivery vehicles of VOCs	6.6.11	
Gas turbine engines with maximum heat input rating of 3 MMBtu/hr or less	6.1.3		Loading racks used for the transfer of less than 4,000 gal/day of unheated organic material with initial boiling point ≥ 302 F or of fuel oil with specific gravity ≥ 0.8251	6.7.1.1	
Space heating equipment other than boilers	6.1.4		Loading racks used for the transfer of asphalt, crude or residual oil stored in exempt tanks, or crude oil with specific gravity ≥ 0.8762	6.7.1.2	
Cooling towers with a circulation rate less than 10,000 gal/min, and that are not used for cooling of process water, or water from barometric jets or condensers++	6.2	√	Equipment used exclusively for the transfer of refined lubricating oil	6.7.2	√
Use of less than 2 gal/day of graphic arts materials	6.3		Equipment used to apply architectural coatings	6.8.1	
Equipment at retail establishments used to prepare food for human consumption	6.4.1		Unheated, non-conveyorized cleaning equipment with < 10 ft <sup>2</sup> open area; using solvents with initial boiling point ≥ 248 F; and < 25 gal/yr. evaporative losses	6.9	√
Ovens at bakeries with total daily production less than 1,000 pounds and exempt by sec. 6.1.1	6.4.3		Brazing, soldering, or welding equipment	6.10	√
Equipment used exclusively for extruding or compression molding of rubber or plastics, where no plastisizer or blowing agent is used	6.5		Equipment used to compress natural gas	6.11	√
Containers used to store clean produced water	6.6.1	√	Fugitive emissions sources assoc. with exempt equipment	6.12	
Containers ≤ 100 bbl used to store oil with specific gravity ≥ 0.8762	6.6.2	√	Pits and Ponds as defined in Rule 1020	6.15	
Containers ≤ 100 bbl installed prior to 6/1/89 used to store oil with specific gravity ≥ 0.8762	6.6.3		On-site roadmix manufacturing and the application of roadmix as a road base material	6.17	
Containers with a capacity ≤ 250 gallons used to store organic material where the actual storage temperature < 150 F	6.6.4	√	Emissions less than 2 lb/day from units not included above	6.19	√
Containers used to store unheated organic material with an initial boiling point ≥ 302 F	6.6.5	√	Venting PUC quality natural gas from for sole purpose of pipeline and compressor repair and or maintenance	7.2	
Containers used to store fuel oils or non-air-blown asphalt with specific gravity ≥ 0.9042	6.6.6		Non-structural repairs & maintenance to permitted equipment	7.3	
Containers used to store petroleum distillates used as motor fuel with specific gravity ≥ 0.8251	6.6.7		Detonation of explosives ≤ 100 lb/day and 1,000 lb/year	7.4	

No insignificant activities (Check this box if no equipment in the above categories exist at your facility.)

# Attachment C

## Current Permit to Operate

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** N-4940-1-2

**EXPIRATION DATE:** 03/31/2016

**EQUIPMENT DESCRIPTION:**

47.5 MW NOMINALLY RATED SIMPLE-CYCLE PEAK-DEMAND POWER GENERATING SYSTEM CONSISTING OF A 500 MMBTU/HR GENERAL ELECTRIC, MODEL LM6000 SPRINT, NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR WITH A WATER SPRAY PREMIXED COMBUSTION SYSTEM, AN OXIDATION CATALYST AND A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION

## PERMIT UNIT REQUIREMENTS

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
3. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
4. All equipment shall be maintained in proper operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
5. A selective catalytic reduction (SCR) system and an oxidation catalyst shall serve the gas turbine engine. Exhaust ducting shall be equipped with a fresh air inlet blower to be used to lower the exhaust temperature prior to the inlet of the SCR system catalyst. [District Rule 2201]
6. The gas turbine engine and generator lube oil vents shall be equipped with mist eliminators or equivalent technology sufficient to limit the visible emissions from the lube oil vents to not exceed 5% opacity, except for a period not exceeding three minutes in any one hour. [District Rule 2201]
7. The turbine shall be equipped with a continuous monitoring system to measure and record hours of operation, mass ratio of water-to-fuel injected and fuel consumption. [District Rules 2201, 4001 and 4703]
8. The exhaust stack shall be equipped with a continuous emissions monitor (CEM) for NO<sub>x</sub>, CO, and O<sub>2</sub>. The CEM shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as during normal operating conditions. [District Rules 2201 and 1080]
9. The permittee shall monitor and record the fuel flow rate, NO<sub>x</sub> emission rate, CO emission rate, ammonia injection rate, exhaust temperature both prior to and after the SCR system, exhaust oxygen content and exhaust flow rate. [District Rules 2201, 4001 and 4703]
10. The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080]
11. Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

12. The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NO<sub>x</sub>, CO, and O<sub>2</sub> analyzer during District inspections. The sampling ports shall be located in accordance with the CARB regulation titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Source Emission Monitoring and Testing. [District Rule 1081]
13. Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080]
14. In accordance with 40 CFR, Part 60, Appendix F, 5.1, cylinder gas audits (CGA) or relative accuracy audits (RAA) of the continuous emission monitors shall be conducted quarterly, except during quarters in which a relative accuracy test audit (RATA) is performed. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080]
15. The owner/operator shall perform a relative accuracy test audit (RATA) as specified by 40 CFR Part 60, Appendix F, 5.11, at least once every four calendar quarters. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080]
16. The turbine shall be fired only on natural gas with a sulfur content (as S) not exceeding 1.0 grain per 100 standard cubic feet. [District Rule 2201]
17. The NO<sub>x</sub> (as NO<sub>2</sub>) emissions during each start-up event and each shutdown event shall not exceed 20.0 lb/hr. [District Rule 2201]
18. The CO emissions during each each start-up event and each shutdown event shall not exceed 20.0 lb/hr. [District Rule 2201]
19. No start-up or shutdown event shall be longer than two hours. [District Rule 4703]
20. Start-up is defined as the period beginning with the initial firing of the turbine and ending when the unit meets the ppmvd and lb/hr emission limits of this permit. Shutdown is defined as the period beginning with the initiation of the turbine shutdown sequence and ending with the cessation of the firing of the turbine. Start-up and shutdown period emissions shall be counted toward all applicable emission limits (lb/day and lb/year). [District Rules 2201 and 4703]
21. The NO<sub>x</sub> (as NO<sub>2</sub>) emissions from this unit, except during start-up and shutdown events, shall not exceed either of the following: 4.53 lb/hr or 2.5 ppmvd @ 15% O<sub>2</sub>. The emission concentration limit is based on a three-hour rolling average. [District Rules 2201, 4001 and 4703]
22. The CO emissions from this unit, except during start-up and shutdown events, shall not exceed either of the following: 6.62 lb/hr or 6.0 ppmvd @ 15% O<sub>2</sub>. The emission concentration limit is based on a three-hour rolling average. [District Rules 2201 and 4703]
23. The VOC emissions from this unit shall not exceed either of the following: 1.26 lb/hr or 2.0 ppmvd @ 15% O<sub>2</sub>. The emission concentration limit is based on a three-hour rolling average. [District Rule 2201]
24. The SO<sub>x</sub> emissions shall not exceed 1.4 lb/hr. [District Rule 2201]
25. The PM<sub>10</sub> emissions shall not exceed 3.00 lb/hr. [District Rule 2201]
26. The ammonia slip emissions shall not exceed either of the following: 6.71 lb/hr or 10.0 ppmvd @ 15% O<sub>2</sub>. The emission concentration limit is based on a 24-hour rolling average. [District Rule 2201]
27. Each three hour rolling average will be compiled from the three most recent one hour periods. Each one hour period shall commence on the hour. Each one hour period in a twenty-four hour average for ammonia slip will commence on the hour. The twenty-four hour average will be calculated starting and ending at twelve-midnight. [District Rule 2201]
28. The daily emissions from this unit shall not exceed any of the following: NO<sub>x</sub> (as NO<sub>2</sub>) - 155.1 lb/day; VOC - 30.2 lb/day; CO - 158.9 lb/day; PM<sub>10</sub> - 72.0 lb/day; or SO<sub>x</sub> (as SO<sub>2</sub>) - 34.2 lb/day. [District Rule 2201]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

29. The annual emissions from this unit shall not exceed any of the following: NO<sub>x</sub> (as NO<sub>2</sub>) - 44,505 lb/year; VOC - 11,038 lb/year; CO - 57,991 lb/year, PM<sub>10</sub> - 26,280 lb/year; or SO<sub>x</sub> - 12,483 lb/year. All annual emission limits are based on 12 consecutive month rolling emissions totals. [District Rule 2201]
30. Daily emissions shall be compiled for a twenty-four hour period starting and ending at twelve-midnight. Each calendar month in a twelve consecutive month rolling emissions total shall commence at the beginning of the first day of the month. The twelve consecutive month rolling emissions totals used to determine compliance with annual emission limits shall be compiled from the twelve most recent calendar months. [District Rule 2201]
31. Compliance with the ammonia emission limits shall be demonstrated utilizing one of the following procedures: 1) calculate the daily ammonia emissions using the following equation:  $(\text{ppmvd @ 15\% O}_2) = ((a - (b \times c / 1,000,000)) \times (1,000,000 / b)) \times d$ , where a = ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NO<sub>x</sub> concentration ppmvd @ 15% O<sub>2</sub> across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip; 2.) utilize another District-approved calculation method using measured surrogate parameters to determine the daily ammonia emissions in ppmvd @ 15% O<sub>2</sub>. If this option is chosen, the permittee shall submit a detailed calculation protocol for District approval at least 60 days prior to commencement of operation; 3.) Alternatively, the permittee may utilize a continuous in-stack ammonia monitor to verify compliance with the ammonia emissions limit. If this option is chosen, the permittee shall submit a monitoring plan for District approval at least 60 days prior to commencement of operation. [District Rule 4102]
32. Source testing to measure the NO<sub>x</sub>, VOC, CO and ammonia slip emissions (ppmvd @ 15% O<sub>2</sub> and lb/hr) and PM<sub>10</sub> emissions (lb/hr) shall be conducted at least once every twelve months. [District Rule 2201]
33. Source testing to measure the CO emissions during start-up periods shall be conducted within 60 days of initial start-up and at least once every seven years thereafter. [District Rule 2201]
34. Source testing to measure the NO<sub>x</sub> emissions during start-up periods shall be conducted at least once every seven years. [District Rule 2201]
35. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]
36. Source testing shall be witnessed or authorized by District personnel and samples shall be collected by a California Air Resources Board (CARB) certified testing laboratory or a CARB certified source testing firm. [District Rule 1081]
37. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
38. NO<sub>x</sub> emissions (referenced as NO<sub>2</sub>) shall be determined using EPA method 7E, EPA method 20 or CARB method 20. The test results shall be corrected to ISO standard conditions as defined in 40 CFR Part 60 Subpart GG Section 60.335. [District Rules 1081, 2201, 4001 and 4703]
39. CO emissions shall be determined using EPA method 10 or EPA method 10B. [District Rules 1081, 2201 and 4703]
40. VOC emissions (referenced as methane) shall be determined using EPA method 18 or EPA method 25. [District Rules 1081 and 2201]
41. PM<sub>10</sub> emissions shall be determined using EPA methods 201 and 202, EPA methods 201A and 202, or CARB method 501 in conjunction with CARB method 5. [District Rules 1081 and 2201]
42. Ammonia emissions shall be determined using BAAQMD method ST-1B. [District Rules 1081 and 4102]
43. Oxygen content of the exhaust gas shall be determined by using EPA method 3, EPA method 3A or EPA method 20. [District Rules 1081, 2201 and 4703]
44. EPA approved alternative source testing methods will be allowed, upon District approval, provided it does not result in a relaxation of emission limitations. The request to utilize EPA approved alternative source testing methods must be submitted in writing and written approval received from the District prior to the submission of the source test plan. [District Rule 1081 and 4001]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.



45. The permittee shall notify the District of any breakdown condition as soon as reasonably possible, but no later than one hour after its detection, unless the permittee demonstrates to the District's satisfaction that the longer reporting period was necessary. [District Rule 1100]
46. The District shall be notified in writing within ten days following the correction of any breakdown condition. The breakdown notification shall include a description of the equipment malfunction or failure, the date and cause of the initial failure, the estimated emissions in excess of those allowed and the methods utilized to restore normal operations. [District Rule 1100]
47. The permittee shall submit a written report to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess emissions (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080]
48. The permittee shall maintain a daily stationary gas turbine system operating log that includes the actual local startup and stop time, length and reason for reduced load periods, total hours of operation and the type and quantity of fuel used. [District Rule 4703]
49. The permittee shall maintain the following records: date and time, duration, and type of any startup, shutdown, or malfunction; performance testing, evaluations, calibrations, checks, adjustments, any period which a continuous monitoring system or device was inoperative, and maintenance of any continuous emission monitoring system or device. [District Rule 2201]
50. All records required to be maintained by this permit shall be maintained for a period of five years and shall be made readily available for District inspection upon request. [District Rule 4703]

These terms and conditions are part of the Facility-wide Permit to Operate.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** N-4940-2-2

**EXPIRATION DATE:** 03/31/2016

**EQUIPMENT DESCRIPTION:**

47.5 MW NOMINALLY RATED SIMPLE-CYCLE PEAK-DEMAND POWER GENERATING SYSTEM CONSISTING OF A 500 MMBTU/HR GENERAL ELECTRIC, MODEL LM6000 SPRINT, NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR WITH A WATER SPRAY PREMIXED COMBUSTION SYSTEM, AN OXIDATION CATALYST AND A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION

## PERMIT UNIT REQUIREMENTS

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
3. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
4. All equipment shall be maintained in proper operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
5. A selective catalytic reduction (SCR) system and an oxidation catalyst shall serve the gas turbine engine. Exhaust ducting shall be equipped with a fresh air inlet blower to be used to lower the exhaust temperature prior to the inlet of the SCR system catalyst. [District Rule 2201]
6. The gas turbine engine and generator lube oil vents shall be equipped with mist eliminators or equivalent technology sufficient to limit the visible emissions from the lube oil vents to not exceed 5% opacity, except for a period not exceeding three minutes in any one hour. [District Rule 2201]
7. The turbine shall be equipped with a continuous monitoring system to measure and record hours of operation, mass ratio of water-to-fuel injected and fuel consumption. [District Rules 2201, 4001 and 4703]
8. The exhaust stack shall be equipped with a continuous emissions monitor (CEM) for NO<sub>x</sub>, CO, and O<sub>2</sub>. The CEM shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as during normal operating conditions. [District Rules 2201 and 1080]
9. The permittee shall monitor and record the fuel flow rate, NO<sub>x</sub> emission rate, CO emission rate, ammonia injection rate, exhaust temperature both prior to and after the SCR system, exhaust oxygen content and exhaust flow rate. [District Rules 2201, 4001 and 4703]
10. The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080]
11. Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

12. The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NO<sub>x</sub>, CO, and O<sub>2</sub> analyzer during District inspections. The sampling ports shall be located in accordance with the CARB regulation titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Source Emission Monitoring and Testing. [District Rule 1081]
13. Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080]
14. In accordance with 40 CFR, Part 60, Appendix F, 5.1, cylinder gas audits (CGA) or relative accuracy audits (RAA) of the continuous emission monitors shall be conducted quarterly, except during quarters in which a relative accuracy test audit (RATA) is performed. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080]
15. The owner/operator shall perform a relative accuracy test audit (RATA) as specified by 40 CFR Part 60, Appendix F, 5.11, at least once every four calendar quarters. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080]
16. The turbine shall be fired only on natural gas with a sulfur content (as S) not exceeding 1.0 grain per 100 standard cubic feet. [District Rule 2201]
17. The NO<sub>x</sub> (as NO<sub>2</sub>) emissions during each start-up event and each shutdown event shall not exceed 20.0 lb/hr. [District Rule 2201]
18. The CO emissions during each each start-up event and each shutdown event shall not exceed 20.0 lb/hr. [District Rule 2201]
19. No start-up or shutdown event shall be longer than two hours. [District Rule 4703]
20. Start-up is defined as the period beginning with the initial firing of the turbine and ending when the unit meets the ppmvd and lb/hr emission limits of this permit. Shutdown is defined as the period beginning with the initiation of the turbine shutdown sequence and ending with the cessation of the firing of the turbine. Start-up and shutdown period emissions shall be counted toward all applicable emission limits (lb/day and lb/year). [District Rules 2201 and 4703]
21. The NO<sub>x</sub> (as NO<sub>2</sub>) emissions from this unit, except during start-up and shutdown events, shall not exceed either of the following: 4.53 lb/hr or 2.5 ppmvd @ 15% O<sub>2</sub>. The emission concentration limit is based on a three-hour rolling average. [District Rules 2201, 4001 and 4703]
22. The CO emissions from this unit, except during start-up and shutdown events, shall not exceed either of the following: 6.62 lb/hr or 6.0 ppmvd @ 15% O<sub>2</sub>. The emission concentration limit is based on a three-hour rolling average. [District Rules 2201 and 4703]
23. The VOC emissions from this unit shall not exceed either of the following: 1.26 lb/hr or 2.0 ppmvd @ 15% O<sub>2</sub>. The emission concentration limit is based on a three-hour rolling average. [District Rule 2201]
24. The SO<sub>x</sub> emissions shall not exceed 1.4 lb/hr. [District Rule 2201]
25. The PM<sub>10</sub> emissions shall not exceed 3.00 lb/hr. [District Rule 2201]
26. The ammonia slip emissions shall not exceed either of the following: 6.71 lb/hr or 10.0 ppmvd @ 15% O<sub>2</sub>. The emission concentration limit is based on a 24-hour rolling average. [District Rule 2201]
27. Each three hour rolling average will be compiled from the three most recent one hour periods. Each one hour period shall commence on the hour. Each one hour period in a twenty-four hour average for ammonia slip will commence on the hour. The twenty-four hour average will be calculated starting and ending at twelve-midnight. [District Rule 2201]
28. The daily emissions from this unit shall not exceed any of the following: NO<sub>x</sub> (as NO<sub>2</sub>) - 155.1 lb/day; VOC - 30.2 lb/day; CO - 158.9 lb/day; PM<sub>10</sub> - 72.0 lb/day; or SO<sub>x</sub> (as SO<sub>2</sub>) - 34.2 lb/day. [District Rule 2201]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

29. The annual emissions from this unit shall not exceed any of the following: NO<sub>x</sub> (as NO<sub>2</sub>) - 44,505 lb/year; VOC - 11,038 lb/year; CO - 57,991 lb/year, PM<sub>10</sub> - 26,280 lb/year; or SO<sub>x</sub> - 12,483 lb/year. All annual emission limits are based on 12 consecutive month rolling emissions totals. [District Rule 2201]
30. Daily emissions shall be compiled for a twenty-four hour period starting and ending at twelve-midnight. Each calendar month in a twelve consecutive month rolling emissions total shall commence at the beginning of the first day of the month. The twelve consecutive month rolling emissions totals used to determine compliance with annual emission limits shall be compiled from the twelve most recent calendar months. [District Rule 2201]
31. Compliance with the ammonia emission limits shall be demonstrated utilizing one of the following procedures: 1) calculate the daily ammonia emissions using the following equation:  $(\text{ppmvd @ 15\% O}_2) = ((a - (b \times c / 1,000,000)) \times (1,000,000 / b)) \times d$ , where a = ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NO<sub>x</sub> concentration ppmvd @ 15% O<sub>2</sub> across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip; 2.) utilize another District-approved calculation method using measured surrogate parameters to determine the daily ammonia emissions in ppmvd @ 15% O<sub>2</sub>. If this option is chosen, the permittee shall submit a detailed calculation protocol for District approval at least 60 days prior to commencement of operation; 3.) Alternatively, the permittee may utilize a continuous in-stack ammonia monitor to verify compliance with the ammonia emissions limit. If this option is chosen, the permittee shall submit a monitoring plan for District approval at least 60 days prior to commencement of operation. [District Rule 4102]
32. Source testing to measure the NO<sub>x</sub>, VOC, CO and ammonia slip emissions (ppmvd @ 15% O<sub>2</sub> and lb/hr) and PM<sub>10</sub> emissions (lb/hr) shall be conducted at least once every twelve months. [District Rule 2201]
33. Source testing to measure the CO emissions during start-up periods shall be conducted within 60 days of initial start-up and at least once every seven years thereafter. [District Rule 2201]
34. Source testing to measure the NO<sub>x</sub> emissions during start-up periods shall be conducted at least once every seven years. [District Rule 2201]
35. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]
36. Source testing shall be witnessed or authorized by District personnel and samples shall be collected by a California Air Resources Board (CARB) certified testing laboratory or a CARB certified source testing firm. [District Rule 1081]
37. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
38. NO<sub>x</sub> emissions (referenced as NO<sub>2</sub>) shall be determined using EPA method 7E, EPA method 20 or CARB method 20. The test results shall be corrected to ISO standard conditions as defined in 40 CFR Part 60 Subpart GG Section 60.335. [District Rules 1081, 2201, 4001 and 4703]
39. CO emissions shall be determined using EPA method 10 or EPA method 10B. [District Rules 1081, 2201 and 4703]
40. VOC emissions (referenced as methane) shall be determined using EPA method 18 or EPA method 25. [District Rules 1081 and 2201]
41. PM<sub>10</sub> emissions shall be determined using EPA methods 201 and 202, EPA methods 201A and 202, or CARB method 501 in conjunction with CARB method 5. [District Rules 1081 and 2201]
42. Ammonia emissions shall be determined using BAAQMD method ST-1B. [District Rules 1081 and 4102]
43. Oxygen content of the exhaust gas shall be determined by using EPA method 3, EPA method 3A or EPA method 20. [District Rules 1081, 2201 and 4703]
44. EPA approved alternative source testing methods will be allowed, upon District approval, provided it does not result in a relaxation of emission limitations. The request to utilize EPA approved alternative source testing methods must be submitted in writing and written approval received from the District prior to the submission of the source test plan. [District Rule 1081 and 4001]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

45. The permittee shall notify the District of any breakdown condition as soon as reasonably possible, but no later than one hour after its detection, unless the permittee demonstrates to the District's satisfaction that the longer reporting period was necessary. [District Rule 1100]
46. The District shall be notified in writing within ten days following the correction of any breakdown condition. The breakdown notification shall include a description of the equipment malfunction or failure, the date and cause of the initial failure, the estimated emissions in excess of those allowed and the methods utilized to restore normal operations. [District Rule 1100]
47. The permittee shall submit a written report to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess emissions (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080]
48. The permittee shall maintain a daily stationary gas turbine system operating log that includes the actual local startup and stop time, length and reason for reduced load periods, total hours of operation and the type and quantity of fuel used. [District Rule 4703]
49. The permittee shall maintain the following records: date and time, duration, and type of any startup, shutdown, or malfunction; performance testing, evaluations, calibrations, checks, adjustments, any period which a continuous monitoring system or device was inoperative, and maintenance of any continuous emission monitoring system or device. [District Rule 2201]
50. All records required to be maintained by this permit shall be maintained for a period of five years and shall be made readily available for District inspection upon request. [District Rule 4703]

These terms and conditions are part of the Facility-wide Permit to Operate.