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Appendix K

Final DOC Conditions

Puente Power Project 262 MW (net nominal) GE 7HA.01 Combustion Turbine Generator (CTG)

The CTG is simultaneously subject to the emission limits, monitoring requirements, source testing requirements, and recordkeeping and reporting requirements of the following rules and regulations:

Rule 26.2, New Source Review - Requirements

Rule 29, Conditions On Permits

Rule 64, Sulfur Content of Fuels

Rule 74.23, Stationary Gas Turbines

Rule 103, Continuous Monitoring Systems

40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS)

40 CFR Part 60, Subpart A, General Provisions

40 CFR Part 60, Subpart KKKK, Standards of Performance for Stationary Combustion Turbines

40 CFR Part 75, Continuous Emissions Monitoring

The following conditions describe and streamline the most stringent requirements of the above rules and regulations. The Ventura County APCD has been delegated authority for 40 CFR Part 60 Subpart KKKK and is considered to be the Administrator.

The Rule 26 BACT NO_x emission limit (2.5 ppmvd at 15% O2) is the most stringent in comparison to the Rule 74.23 limit (9 ppmvd at 15% O2) and the NSPS Subpart KKKK NO_x emission limit (15 ppmvd at 15% O2) at loads above 75% of peak load; therefore the Rule 74.23 and NSPS emission limits are subsumed. However, there are no startup, shutdown, or load change exemption periods from the NSPS Subpart KKKK NOx concentration limit; therefore, the permittee will need to monitor compliance with the NSPS limit with a 4-hour rolling average NOx emission rate.

Compliance with the terms of the conditions below for the Puente Power Project CTG assures compliance with all individual requirements applicable to the CTG which have been addressed above and below.

1. Prior to completion of construction, the permittee shall submit an application for a revised Title V Part 70 Permit for the Mandalay Generating Station. The application shall also include the Title IV Acid Rain Permit application, VCAPCD Permit to Operate application, and all applicable supplementary forms and filing fees. (Rules 10, 33, 34)

2. Prior to operation of the new CTG, permittee shall surrender NOx emission reduction credits (ERCs) in the amount of 38.91 tons per year. Permittee shall cancel the permit for Mandalay Generating Station (MGS) Unit 2 prior to the start of commissioning of the new Puente Power Project CTG. Permittee shall cancel the permit for MGS Unit 1 within 90 operating days, but no later than 180 calendar days, after the start of the commissioning period for the new Puente Power Project CTG. (Rules 26.2 and 26.8)

3. Permittee shall use any of the following ERC Certificates to satisfy the NOx emission offset requirements of Rule 26.2: ERC Certificate Nos. 1078, 1079, 1080, 1083, 1085, 1091, 1092, 1094, 1097, 1104, and / or 1107. (Rule 26.2)

4. The combustion turbine generator (CTG) lube oil vents and the electrical generator lube oil vents shall be equipped with mist eliminators to maintain visible emissions from lube oil vents to no greater than 5% opacity, except for no more than three minutes in any one hour. (Rule 26)

5. The CTG shall be operated with a continuously recording fuel gas flowmeter. The flowmeter shall be installed, calibrated, maintained, and operated according to the manufacturer's instructions. Alternatively, a gas fuel flowmeter that meets the installation, certification, and quality assurance requirements of Appendix D to 40 CFR Part 75 is acceptable for use. (Rules 26.2 and 74.23, 40 CFR Part 60 Subpart KKKK and 40 CFR Part 75)

6. The CTG exhaust after the SCR (selective catalytic reduction) unit shall be equipped with continuously recording emissions monitors (CEM) for NOx, CO, and O2. Continuous emissions monitors shall meet the requirements of Rule 74.23, Rule 103, 40 CFR Part 60, Appendices B and F, 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75, Appendices A and B, as applicable, and shall be capable of monitoring emissions during startups, shutdowns, and unplanned load changes as well as normal operating conditions. (Rules 74.23 and 103, 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75)

7. CEM cycling times shall be those specified in 40 CFR Part 60, Subpart KKKK and 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 EPA. For NOx monitoring for 40 CFR Part 60 Subpart KKKK, during each full unit operating hour, both the NOx 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 NOx emission rate for the hour. (Rule 103 and 40 CFR Part 60 Subpart KKKK)

8. The exhaust stack of the CTG 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 NOx,

CO, and O2 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. (Rules 74.23, 101, and 102)

9. Results of the NOx, CO, and O2 continuous emissions monitoring shall be reduced according to the applicable procedures established in 40 CFR Part 60, Subpart KKKK (for NOx CEMS), 40 CFR Part 75 Appendix F (for NOx and O2 CEMS), and 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3 (for CO CEMS), or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. (Rule 103, 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75)

10. In accordance with the applicable sections of 40 CFR Part 60 Appendix F, the CO CEMS shall be audited at least once each calendar quarter by conducting cylinder gas audits (CGA) or relative accuracy audits (RAA). CGA or RAA may be conducted during three of four calendar quarters, but no more than three calendar quarters in succession. The NOx and O2 CEMS shall be audited in accordance with the applicable requirements of 40 CFR Part 75. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District upon request. (Rule 103, 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75)

11. For the CO CEMS, the permittee shall perform a relative accuracy test audit (RATA) as specified by 40 CFR Part 60, Appendix F at least once every four calendar quarters. For the NOx and O2 CEMS, the permittee shall perform a relative accuracy test audit (RATA) as specified by 40 CFR Part 75, Appendix B at least once every two calendar quarters unless the permittee achieves 7.5% or below relative accuracy. If the permittee meets the incentive of 7.5% or better relative accuracy, then the permittee shall perform a RATA once every four calendar quarters. For the CO CEMS, 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. (Rule 103, 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75)

12. The permittee shall report any violation of the NOx and CO emissions limit of this permit, as measured by the CEMS, in writing to the District within 96 hours of each occurrence. (Rule 103)

13. The permittee shall maintain permanent continuous monitoring records, in a form suitable for inspection, for a period of at least five (5) years. Such records shall be made available to the Air Resources Board or the District upon request. The report shall include the following:

    Time intervals of report,

    The date, time and duration of any startup, shutdown or malfunction in the operation of the gas turbine and CEMS,

The results of performance testing, evaluations, calibrations, checks, adjustments, and maintenance of the CEMS,

Emission Measurements, and

Net megawatt-hours produced. (Rule 103)

14. Upon written request of the APCO, the permittee shall submit a written CEM report 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 of report,

    The date, time, duration and magnitude of excess emissions of NOx and/or CO, the nature and cause of the excess (if known), the corrective actions taken, and the preventive measures adopted,

    The averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard,

    The date, time and duration of each period during which the CEMS was inoperative, except for zero and span checks, and a description of the system repairs and adjustments undertaken during each period, and,

    A negative declaration when no excess emissions occurred. (Rule 103)

15. For the purposes of 40 CFR Part 60, Subpart KKKK, excess emissions shall be defined as any unit operating period in which the 4-hour rolling average NOx concentration exceeds the applicable concentration limit, or alternatively as elected by the permittee, the 4-hour rolling average NOx emission rate exceeds the applicable lb/MWh emissions rate limit, as defined in Part 60.4320, Table 1. The 4-hour rolling average NOx concentration limit for any operating hour is determined by the arithmetic average of 15 ppmvd at 15% O2 for each hour in which the unit operated above 75% of peak load for the entire hour, and 96 ppmvd at 15% O2 for each hour in which it did not. The 4-hour rolling NOx lb/MWh emission limit for any operating hour is determined by the arithmetic average of 0.43 lb/MWh for each hour in which the unit operated above 75% of peak load for the entire hour, and 4.7 lb/MWh for each hour in which it did not. The 4-hour rolling average is the arithmetic average of the average NOx concentration in ppm measured by the CEMS for a given hour (corrected to 15 percent O2) or lb/MWh if elected by the permittee, and the average NOx concentrations or lb/MWh emission rates during the three unit operating hours immediately preceding that unit operating hour. A period of monitor downtime shall be any unit operating hour in which sufficient data are not obtained to validate the hour for either NOx or O2. (40 CFR Part 60 Subpart KKKK)

16. For the purposes of 40 CFR Part 60, Subpart KKKK, the permittee shall submit reports of NOx excess emissions and monitor downtime, in accordance with 40 CFR 60.7(c) on

a semi-annual basis. In addition, permittee shall submit the results of the initial and annual source test for NOx. All semi-annual reports of excess emissions and monitor downtime shall be postmarked by the 30th day following the end of each six-month period, or by the close of business on the 60th day following the completion of the source test. (40 CFR Part 60 Subpart KKKK)

17. For the purposes of 40 CFR Part 60, Subpart KKKK, if the total duration of NOx excess emissions for the reporting period is less than 1 percent of the total operating time for the reporting period and CEMS downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, only the summary report form in 40 CFR Part 60.7(d) shall be submitted and the excess emission report described in 40 CFR Part 60.7(c) need not be submitted unless requested by the EPA or the VCAPCD. (40 CFR Part 60 Subpart KKKK)

18. The ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. All data shall be reduced to hourly averages. (Rule 74.23 and 40 CFR Part 60 Subpart KKKK)

19. Permittee shall monitor and record exhaust gas temperature at the oxidation catalyst inlet and the selective catalytic reduction (SCR) catalyst inlet. All data shall be reduced to hourly averages. (Rule 74.23 and 40 CFR Part 60 Subpart KKKK)

20. The CTG shall be fired exclusively on natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as sulfur) per 100 dry scf of natural gas. (Rules 26.2 and 64, 40 CFR Part 60 Subpart KKKK)

21. The natural gas sulfur content shall be: (i) documented in a valid purchase contract, supplier certification, tariff sheet or transportation contract or (ii) monitored weekly using ASTM Methods D4084, D5504, D6228, Gas Processors Association Standard 2377, or verified using an alternative method approved by the District. If the natural gas sulfur content is less than 0.75 gr/100 scf for 8 consecutive weeks, then the Monitoring frequency shall be once every six (6) months. If any six (6) month monitoring shows an exceedance, weekly monitoring shall resume. (Rules 26.2 and 64 and 40 CFR Part 60 Subpart KKKK)

22. Startup is defined as the period beginning with turbine initial firing. Shutdown is defined by the period beginning with initiation of turbine shutdown sequence and ending with cessation of firing of the gas turbine engine. Unplanned load change is defined as the automatic release of power from the turbine and the subsequent restart. For an unplanned load change, the loss of power during the release must exceed forty (40) percent of the turbine rating. Startup, shutdown, and unplanned load change durations shall not exceed 60 minutes (1 hour) for a startup, 60 minutes (1 hour) for a shutdown, and 60 minutes (1 hour) for an unplanned load change, per occurrence. For failed start-ups, each restart shall begin a new exemption period. (Rules 26.2, 29, and 74.23)

23. The CTG, air pollution control equipment, and monitoring equipment shall be in operated in a manner consistent with good air pollution control practice for minimizing

emissions at all times including during startup, shutdown, and malfunction. (40 CFR Part 60 Subpart KKKK)

24. The permittee shall submit to the District information correlating the NOx control system operating parameters to the associated measured NOx output. The information must be sufficient to allow the District to determine compliance with the NOx emission limits of this permit when the CEMS is not operating properly. (Rules 26.2, 29, and 74.23)

25. The HHV (higher heating value) and LHV (lower heating value) of the natural gas combusted shall be determined upon request using ASTM D3588, ASTM 1826, ASTM 1945, or an alternative method approved by the District. (Rules 26.2, 29, and 74.23)

26. When the CTG is operating, ammonia shall be injected when the selective catalytic reduction system catalyst temperature exceeds 300 degrees F. Permittee shall monitor and record catalyst temperature during periods of startup. (Rules 26.2 and 74.23)

27. During <u>startup</u> of the CTG, emissions (in pounds = lbs) from the CTG in any one hour shall not exceed any of the following limits:

    ROC = 20.30 lbs,
    NOx (as NO2) = 98.87 lbs,
    PM10 = 8.75 lbs,
    SOx (as SO2) = 5.50 lbs, and
    CO = 178.55 lbs

    For the purpose of this condition, all PM10 emissions are assumed to be PM2.5 emissions.

    If the CTG is in startup mode during any portion of a clock hour, the facility will be subject to the aforementioned limits during that clock hour.

    Compliance with the ROC and PM10 emission limits shall be verified by CTG manufacturer's emission data. Compliance with the SOx emission limit shall be verified by complying with the natural gas sulfur content limit of this permit. Compliance with the NOx and CO emission limits shall be verified by continuous emissions monitors (CEMS) as required by this permit. If the CEMS is not operating properly, as required below, the CEMS missing data procedures required by Permit Condition No. 55 shall be implemented. (Rules 26.2, 29, and 74.23)

28. During <u>shutdown</u> of the CTG, emissions (in pounds = lbs) from the CTG in any one hour shall not exceed any of the following limits:

    ROC = 30.28 lbs,
    NOx (as NO2) = 22.98 lbs,
    PM10 = 9.58 lbs,
    SOx (as SO2) = 5.50 lbs, and
    CO = 163.48 lbs

For the purpose of this condition, all PM10 emissions are assumed to be PM2.5 emissions.

If the CTG is in shutdown mode during any portion of a clock hour, the facility will be subject to the aforementioned limits during that clock hour.

Compliance with the ROC and PM10 emission limits shall be verified by CTG manufacturer's emission data. Compliance with the SOx emission limit shall be verified by complying with the natural gas sulfur content limit of this permit. Compliance with the NOx and CO emission limits shall be verified by continuous emissions monitors (CEMS) as required by this permit. If the CEMS is not operating properly, as required below, the CEMS missing data procedures required by Permit Condition No. 55 shall be implemented. (Rules 26.2, 29, and 74.23)

29. During normal operation of the CTG, emission concentrations and emission rates from the CTG, except during startup, shutdown, and/or unplanned load change, shall not exceed any of the following limits:

ROC = 6.60 pounds per hour and 2.0 ppmvd @ 15% O2 as methane,
NOx (as NO2) = 23.73 pounds per hour and 2.5 ppmvd @ 15% O2,
PM10 = 10.10 pounds per hour,
SOx (as SO2) = 5.50 pounds per hour,
CO = 23.10 pounds per hour and 4 ppmvd @ 15% O2,
Ammonia (NH3) = 17.53 pounds per hour and 5 ppmvd @ 15%O2.

For the purpose of this condition, all PM10 emissions are assumed to be PM2.5 emissions.

ROC and NOx (as NO2) ppmvd and pounds per hour limits are expressed as a one-hour average limit. All other ppmvd and pounds per hour limits are three-hour rolling averages. If the CTG is in either startup or shutdown mode during any portion of a clock hour, the CTG shall not be subject to these limits during that clock hour. Startup limits and shutdown limits are listed in the above conditions.

Compliance with the ROC, NOx, PM10, CO, and NH3 emission limits shall be verified by initial and annual source testing as required below. Compliance with the SOx emission limit shall be verified by complying with the natural gas sulfur content limit of this permit. Compliance with the NH3 limits shall also be verified by monitoring the ammonia injection rate as required below. In addition, compliance with the NOx and CO emission limits shall be verified by continuous emissions monitors (CEMS) as required by this permit. If the CEMS is not operating properly, as required below, the CEMS missing data procedures required by Permit Condition No. 55 below shall be implemented. (Rules 26.2, 29, and 74.23)

30. Emissions rates from the CTG during the commissioning period shall not exceed the following limits:

ROC = 164.10 pounds per hour and 3.52 tons per year,

NOx (as NO2) = 246.30 pounds per hour and 11.70 tons per year, and
CO = 1973.00 pounds per hour and 31.74 tons per year.

The commissioning period is the period of time commencing with the initial startup of the turbine and ending after 366 hours of turbine operation, or the date the permittee notifies the District the commissioning period has ended. For purposes of this condition, the number of hours of turbine operation is defined as the total unit operating minutes during the commissioning period divided by 60.

Compliance with the ROC, NOx and CO emission limits shall be verified by CTG manufacturer's emission data. In addition, compliance with the NOx and CO emission limits shall be verified by continuous emissions monitors (CEMS) as required by this permit. If the CEMS is not operating properly, as required below, the permittee shall provide documentation, including a certified source test, correlating the control system operating parameters to the associated measured NOx and CO emissions. (Rules 26.2, 29, and 74.23)

31. Annual emissions from the CTG calculated on a twelve consecutive calendar month rolling basis shall not exceed any of the following limits:

ROC = 10.84 tons per year,
NOx (as NO2) = 32.95 tons per year,
PM10 = 10.68 tons per year,
SOx (as SO2) = 5.91 tons per year, and
CO = 54.42 tons per year.

For the purpose of this condition, all PM10 emissions are assumed to be PM2.5 emissions.

These tons per year limits include normal operation, startups, shutdowns, unplanned load changes, and the commissioning period.

Compliance with the NOx and CO emission limits shall be verified with the CEMS. In addition, compliance with the NOx and CO emission limits shall be verified with initial and annual source testing combined with compliance with the CTG's annual operating limit in hours per year.

Compliance with the ROC and PM10 emission limits shall be verified with initial and annual source testing combined with compliance with the CTG's annual operating limit in hours per year.

Compliance with the SOx emission limit shall be verified by complying with the natural gas sulfur content limit of this permit combined with compliance with the CTG's annual operating limit in hours per year. (Rules 26.2 and 29)

32. Each one-hour period in a one-hour rolling average, three-hour rolling average, or four-hour rolling average shall commence on the hour. (Rules 26.2 and 29)

33. Each calendar month in a twelve consecutive calendar month rolling emissions calculation will commence at the beginning of the first day of the month. The twelve consecutive calendar month rolling emissions total to determine compliance with the annual tons per year emissions limits shall be compiled for each and every twelve consecutive calendar month rolling period. (Rules 26.2 and 29)

34. The ammonia (NH3) slip emission concentration limit shall be verified by initial and annual source testing as required below, and by the continuous recording of the ammonia injection rate to the SCR system. The correlation between the gas turbine heat input rate, the SCR system ammonia injection rate, and the corresponding ammonia (NH3) slip emission concentration shall be determined in accordance with required initial and annual ammonia source testing. Alternatively, the permittee may utilize a continuous in-stack ammonia (NH3) slip monitor, acceptable to the District, to monitor compliance. At least 60 days prior to using an ammonia (NH3) slip continuous in-stack monitor, the permittee shall submit a monitoring plan to the District for review and approval. (Rules 26.2, 74.23 and 103)

35. Within 90 days after the completion of the commissioning period for the combustion turbine, the permittee shall conduct an Initial Emissions Source Test at the exhaust of the turbine to determine the ammonia (NH_3) emission concentration to demonstrate compliance with the ammonia concentration limit of this DOC. After the initial source test, the NH_3 emissions source test shall be conducted on an annual basis.

    The source test shall determine the correlation between the heat input rate of the gas turbine, SCR system ammonia injection rate, and the corresponding NH_3 emission concentration at the unit exhaust. NOx emissions at the CEM shall also be recorded during the test. The source test shall be conducted over the expected operating range of the turbine (including, but not limited to, minimum and full load modes) to establish the range of ammonia injection rates necessary to achieve NOx emission reductions while maintaining ammonia slip levels. The permittee shall repeat the source testing on an annual basis thereafter. Ongoing compliance with the ammonia emission concentration limit shall be demonstrated through calculations of corrected ammonia concentrations based upon the source test correlation and continuous records of ammonia injection rate. The permittee shall submit the source test results to the District within 45 days of conducting tests. (Rules 26.2, 29, and 74.23)

36. Within 90 days after the completion of the commissioning period for the combustion turbine, the permittee shall conduct an Initial Emissions Source Test at the exhaust of the turbine to demonstrate compliance with the ROC, NOx, PM10, and CO emission limits of this DOC. The source test shall be conducted over the expected operating range of the turbine including, but not limited to, minimum and full load modes. This source test shall demonstrate compliance with the following short term emission limits during normal operation: ROC = ppmvd @ 15% O2 and pounds per hour, NOx = ppmvd @ 15% O2 and pounds per hour, PM10 = pounds per hour, and CO = ppmvd @ 15% O2 and pounds per hour. The permittee shall submit the source test results to the District within 45 days of conducting tests.

After the initial source test, the ROC, NOx, PM10, and CO emissions source test shall be conducted on an annual basis. (Rules 26.2, 29, and 74.23)

37. The District must be notified 30 days prior to any source test, and a source test plan must be submitted for approval no later than 30 days prior to testing. Unless otherwise specified in this permit or authorized in writing by the District, within 45 days after completion of a source test or RATA performed by an independent source test contractor, a final test report shall be submitted to the District for review and approval. (Rule 102)

38. The following source test methods shall be used for the initial and annual compliance verification:

    ROC: EPA Methods 18 or 25,
    NOx: EPA Methods 7E or 20,
    PM10: EPA Method 5 (front half and back half) or EPA Methods 201A and 202,
    CO: EPA Methods 10 or 10B,
    O2: EPA Methods 3, 3A, or 20,
    Ammonia (NH3): BAAQMD ST-1B.

    For the purpose of this condition, all PM10 emissions are assumed to be PM2.5 emissions.

    EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. (Rules 26, 29, and 74.23 and 40 CFR Part 60 Subpart KKKK)

39. An initial and annual source test and a periodic NOx and CO Relative Accuracy Test Audit (RATA) shall be conducted on the CTG and its CEMS to demonstrate compliance with the NOx and CO emission limits of this permit and applicable relative accuracy requirements for the CEMS systems using District approved methods. The annual source test and the NOx CEMS RATAs shall be conducted in accordance with the applicable RATA frequency requirements of 40 CFR Part 75, Appendix B, Sections 2.3.1 and 2.3.3. The annual source test and the CO CEMS RATAs shall be conducted in accordance with the applicable RATA frequency requirements of 40 CFR Part 60, Appendices B and F. The initial and annual RATA may be conducted during the initial and annual emission source tests required above and shall be conducted in accordance with a protocol complying with all the applicable requirements of an approved source test protocol. (Rule 74.23 and 103, 40 CFR Part 60, and 40 CFR Part 75)

40. Relative Accuracy Test Audits (RATAs) and all other required certification tests shall be performed and completed on the NOx CEMS in accordance with applicable provisions of 40 CFR Part 75 Appendix A and B and 40 CFR Part 60 Subpart KKKK; and on the CO CEMS in accordance with applicable provisions of 40 CFR Part 60 Appendix B and F. (Rules 74.23 and 103, 40 CFR Part 60 Subpart KKKK, 40 CFR Part 60, and 40 CFR Part 75)

41. The permittee shall maintain hourly records of NOx, CO, and NH_3 emission concentrations in ppmvd @15% oxygen. NOx and CO concentrations are measured by the CEM; NH3 emission concentrations are determined and demonstrated through calculations of corrected ammonia concentrations based upon the source test correlation and continuous records of the ammonia injection rate as required above and below. The permittee shall maintain records of NOx and CO emissions in pounds per hour, tons per month, and tons per rolling 12 month periods. (Rules 26.2 and 29)

42. The permittee shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown, unplanned load change or malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEM system that has been installed pursuant to District Rule 103, and emission measurements. (Rules 74.23 and 103)

43. The APCO or an authorized representative shall be allowed to inspect, as determined to be necessary, the monitoring devices required by this permit to ensure that such devices are functioning properly. (Rule 103)

44. The permittee shall 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, amount of natural gas consumed, and duration of each start-up, each shutdown, and each unplanned load change time period. (Rules 26 and 74.23)

45. 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. (Rules 33 and 103)

46. For purposes of determining compliance with emission limits based on source testing, the average of three subtests shall be used. For purposes of determining compliance with emission limits based on a Continuous Emission Monitoring System (CEMS), data collected in accordance with the CEMS protocol shall be used and the averages for averaging periods specified herein shall be calculated as specified in the CEMS protocol. (Rules 26.2 and 74.23)

47. For purposes of determining compliance with emission limits based on CEMS data, all CEMS calculations, averages, and aggregates shall be performed in accordance with the CEMS protocol approved in writing by the District. (Rules 26, 74.23, and 103)

48. The number of annual operating hours (including startup and shutdown) for the CTG shall not exceed 2,150 hours per year. The number of startup periods occurring shall not exceed 200 per year. The number of shutdown periods occurring shall not exceed 200 per year.

    The CTG shall be equipped with an operating, non-resettable, elapsed hour meter. The permittee shall maintain a log that differentiates normal operation from startup operation and shutdown operation. These hours of operation records shall be compiled

into a monthly total. The monthly operating hour records shall be summed for the previous 12 months and reported to the District on an annual basis. (Rules 26 and 74.23)

49. Not later than 90 calendar days prior to the installation of the selective catalytic reduction (SCR) / oxidation catalyst emission control systems, the permittee shall submit to the District the final selection, design parameters and details of the SCR and oxidation catalyst emission control systems for the CTG including, but not limited to, the minimum ammonia injection temperature for the SCR; the catalyst dimensions and volume, catalyst material, catalyst manufacturer, space velocity and area velocity at full load; and control efficiencies of the SCR and the oxidation catalyst CO at temperatures between 100 ºF and 1000 ºF at space velocities corresponding to 100% and 25% load. (Rules 26.2 and 74.23)

50. Continuous monitors shall be installed on the SCR system prior to its initial operation to monitor or calculate, and record the ammonia solution injection rate in pounds per hour and the SCR catalyst temperature in degrees Fahrenheit for each unit operating minute. The monitors shall be installed, calibrated and maintained in accordance with a District approved protocol, which may be part of the CEMS protocol. This protocol, which shall include the calculation methodology, shall be submitted to the District for written approval at least 90 days prior to installation of the SCR system. Following the initial operation of the SCR system, the monitors shall be in full operation at all times when the turbine is in operation. (Rules 26 and 103)

51. Except during periods when the ammonia injection system is being tuned or is in manual control for compliance with applicable permit conditions, the automatic ammonia injection system serving the SCR system shall be in operation in accordance with manufacturer's specifications at all times when ammonia is being injected into the SCR system. Manufacturer specifications shall be maintained on site and made available to District personnel upon request. (Rules 26 and 74.23)

52. The concentration of ammonia solution used in the SCR ammonia injection system shall be less than 20% ammonia by weight. Records of ammonia solution concentration shall be maintained on site and made available to District personnel upon request. (40 CFR Part 68)

53. A continuous emission monitoring system (CEMS) shall be installed and operated on the CTG and properly maintained and calibrated to measure, calculate, and record the following, in accordance with the District approved CEMS protocol:

    a. Hourly average concentration of oxides of nitrogen (NOx) uncorrected and corrected to 15% oxygen, in parts per million (ppmvd), necessary to demonstrate compliance with the NOx limits of this permit;
    b. Hourly average concentration of carbon monoxide (CO) uncorrected and corrected to 15% oxygen, in parts per million (ppmvd), necessary to demonstrate compliance with the CO limits of this permit;
    c. Percent oxygen (O2) in the exhaust gas averaged over each operating hour;
    d. Hourly mass emissions of oxides of nitrogen (NOx) calculated as NO2, in pounds;

e. Cumulative mass emissions of oxides of nitrogen (NOx) calculated as NO2 in each startup and shutdown period, in pounds;
f. Daily mass emissions of oxides of nitrogen (NOx) calculated as NO2, in pounds;
g. Calendar monthly mass emissions of oxides of nitrogen (NOx) calculated as NO2, in pounds;
h. Rolling 4-hour average concentration of oxides of nitrogen (NOx) corrected to 15% oxygen, in parts per million (ppmvd);
i. Rolling 4-hour average oxides of nitrogen (NOx) calculated as NO2, in pounds per megawatt-hour (MWh);
j. Calendar month, calendar year, and rolling 12-calendar-month period mass emissions of oxides of nitrogen (NOx) calculated as NO2, in tons;
k. Hourly mass emissions of carbon monoxide (CO), in pounds;
l. Cumulative mass emissions of carbon monoxide (CO) in each startup and shutdown period, in pounds;
m. Daily mass emissions of carbon monoxide (CO), in pounds;
n. Calendar monthly mass emissions of carbon monoxide (CO), in pounds;
o. Calendar month, calendar year, and rolling 12-calendar-month period mass emissions of carbon monoxide (CO), in tons;
p. Average concentration of oxides of nitrogen (NOx) and carbon monoxide (CO) uncorrected and corrected to 15% oxygen, in parts per million (ppmvd), averaged over each unit operating hour;
q. Average emission rate in pounds per hour of oxides of nitrogen (NOx) calculated as NO2 and pounds per hour of carbon monoxide (CO) during each unit operating hour.

(Rules 26, 29, 74.23, 103 and 40 CF Part 60, Subpart KKKK)

54. No later than 90 calendar days prior to initial startup of the CTG, the permittee shall submit a CEMS protocol to the District, for written approval that shows how the CEMS will be able to meet all of the monitoring requirements of this permit. (Rules 74.23 and 103)

55. When the NOx CEMS is not recording data and the CTG is operating, hourly NOx emissions for purposes of rolling 12-calendar-month period emission calculations shall be determined in accordance with 40 CFR Part 75 Subpart C. Additionally, when the CO CEMS is not recording data and the CTG is operating, hourly CO emissions for purposes of rolling 12- calendar-month period emission calculations shall be determined using CO emission factors to be determined from source test emission factors and hourly fuel consumption data. Emission calculations used to determine hourly emission rates shall be reviewed and approved by the District, in writing, before the hourly emission rates are incorporated into the CEMS emissions data. (Rules 26.2 and 29 and 40 CFR Part 75)

56. The CTG shall be equipped with continuous monitors to measure, calculate, and record unit operating days and hours and the following operational characteristics and operating parameters (Rule 74.23):

a. Date and time;

b. Natural gas flow rate to the CTG during each unit operating minute, in standard cubic feet per hour;
c. Total heat input to the combustion turbine based on the natural gas higher heating value (HHV) during each unit operating minute, in Million British Thermal Units Per Hour (MMBTU/Hr);
d. Higher heating value (HHV) of the fuel on an hourly basis, in Million British Thermal Units Per Standard Cubic Foot (MMBTU/SCF);
e. Stack exhaust gas temperature during each unit operating minute, in degrees Fahrenheit;
f. Combustion turbine energy output during each unit operating minute in megawatts hours (MWh)

57. The values of these operational characteristics and parameters shall be reduced to hourly averages. The monitors shall be installed, calibrated, and maintained in accordance with a turbine operation monitoring protocol, which may be part of the CEMS protocol, approved by the District, which shall include any relevant calculation methodologies. The monitors shall be in full operation at all times when the combustion turbine is in operation. Calibration records for the continuous monitors shall be maintained on site and made available to the District upon request. (Rule 74.23)

58. At least 90 calendar days prior to initial startup of the CTG, the permittee shall submit a CTG operating parameter monitoring protocol to the District for written approval. This may be part of the CEMS protocol. (Rule 74.23)

59. Thirty (30) calendar days after the end of the commissioning period for the CTG, the permittee shall submit a written report to the District. This report shall include, a minimum, the date the commissioning period ended, the startup and shutdown periods, the emissions of NOx and CO during startup and shutdown periods, and the emissions of NOx and CO during steady state operation. This report shall also detail any CTG or emission control equipment malfunction, upset, repairs, maintenance, modifications, or replacements affecting emissions of air contaminants that occurred during the commissioning period. All of the following continuous monitoring information shall be reported and averaged over each hour of operation, except for cumulative mass emissions. (Rules 26.2 and 29):

a. Concentration of oxides of nitrogen (NOx) uncorrected and corrected to 15% oxygen, in parts per million (ppmvd);
b. Concentration of carbon monoxide (CO) uncorrected and corrected to 15% oxygen, in parts per million (ppmvd);
c. Percent oxygen (O2) in the exhaust gas;
d. Mass emissions of oxides of nitrogen (NOx) calculated as NO2, in pounds and tons;
e. Cumulative mass emissions of oxides of nitrogen (NOx) calculated as NO2 in each startup and shutdown period, in pounds and tons;
f. Cumulative mass emissions of carbon monoxide (CO) in each startup and shutdown period, in pounds and tons;
g. Mass emissions of carbon monoxide (CO), in pounds and tons;

h. Total heat input to the combustion turbine based on the fuel's higher heating value, in Million British Thermal Units Per Hour (MMBTU/Hr);
i. Higher Heating Value (HHV) of the natural gas fuel on an hourly basis, in Million British Thermal Units Per Standard Cubic Foot (MMBTU/SCF);
j. Gross electrical power output of the CTG, in megawatts hours (MWh) for each hour;
k. SCR catalyst temperature, in degrees Fahrenheit.

60. Upon request of the APCO, the hourly average information required by this permit shall be submitted in writing and /or in an electronic format approved by the District. Upon request of the APCO, the minute-by-minute information required by this permit shall be submitted in an electronic format approved by the District. (Rules 26.2, 74.23, and 103)

61. The CTG shall comply with 40 CFR Part 60, Subpart TTTT, Standards of Performance for Greenhouse Gas Emissions From New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units. As defined by the annual hours of operation limits, and the natural gas fuel only requirements, of this permit, the CTG is subject to a CO2 emission standard of 120 lb CO2 per MMBTU, averaged over a 12 operating month rolling average.

    To verify compliance with this condition, as required above by this permit, the permittee shall record and maintain written monthly records of the CTG natural gas consumption and the CTG net electrical sales supplied to the utility grid.

Puente Power Project 779 BHP Tier 4-Final Emergency Diesel Engine

The Emergency Diesel Engine is simultaneously subject to the applicable emission limits, monitoring requirements, and recordkeeping and reporting requirements of the following rules and regulations:

Rule 26.2, New Source Review – Requirements

Rule 74.9, Stationary Internal Combustion Engines

Title 17, California Code of Regulations, Section 93115, Airborne Toxic Control Measure For Stationary Compression Ignition (CI) Engines (ATCM)

40 CFR Part 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS IIII)

The following conditions describe and streamline the most stringent requirements of the above rules and regulations. The Ventura County APCD has been delegated authority for 40 CFR Part 60 Subpart IIII and is considered to be the Administrator.

Compliance with the terms of the streamlined conditions below for the Puente Power Project 779 BHP Tier 4-Final Emergency Diesel Engine assures compliance with all individual requirements applicable to the Emergency Engine which have been addressed above and below.

1. The annual hours of operation for maintenance and readiness testing of the 779 BHP Emergency Diesel Engine shall not exceed 50 hours per year. This limit does not include emergency operation when electrical grid power line service has failed. When not being operated for maintenance or readiness testing, the emergency engine shall only be used during a failure or loss of all or part of normal electrical power service to the facility.

   The engine shall be equipped with an operating, non-resettable, elapsed hour meter. The permittee shall maintain a log that differentiates operation during maintenance and testing from operation during emergency use. These hours of operation records shall be compiled into a monthly total. The monthly operating hour records shall be summed for the previous 12 months and reported to the District after every calendar year by February 15. (Rule 74.9 and ATCM)

2. Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight shall be used to fuel the Emergency Diesel Engine. (ATCM)

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 are as dark or darker in shade as that designated as No. 1 on the Ringelmann Chart as published by the United States Bureau of Mines, or 20% opacity. (Rule 50)

4. The emergency engine shall be EPA-certified to the applicable emissions requirements for emergency engines of 40 CFR Part 60 Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, based on the power rating of the engine and the engine model year. The ROC, NOx, and PM10 emission limits below have been applied as BACT pursuant to Rule 26.2 and are more stringent than this condition. (Rule 26.2, ATCM, and NSPS IIII)

5. ROC emissions shall not exceed the EPA Tier 4-Final Standard for NMHC of 0.14 g/bhp-hr. The permittee shall maintain documentation certifying that the emergency diesel engine meets this emission standard. (Rule 26.2)

6. NOx emissions shall not exceed shall not exceed the EPA Tier 4-Final Standard for NOx of 0.50 g/bhp-hr. The permittee shall maintain documentation certifying that the emergency diesel engine meets this emission standard. (Rule 26.2)

7. PM10 emissions from the engine shall not exceed shall not exceed the EPA Tier 4-Final Standard for PM of 0.02 g/hp-hr. The permittee shall maintain documentation certifying that the emergency diesel engine meets this emission standard. (Rules 26.2 and 51)

8. CO emissions shall not exceed shall not exceed the EPA Tier 4-Final Standard for CO of 2.6 g/bhp-hr. The permittee shall maintain documentation certifying that the emergency diesel engine meets this emission standard. (ATCM and NSPS IIII)

9. The exhaust stack of the Emergency Diesel Engine shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. A flapper type rain cap that is open while the engine is operating may be used. (Rule 51)

10. The Emergency Diesel Engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. (ATCM and NSPS IIII)

11. Permittee shall monitor the operational characteristics of the engine as recommended by the engine manufacturer or emissions control system supplier. (ATCM and NSPS IIII)

12. The existing 154 BHP emergency fire pump engine and 201 BHP emergency generator engine at the Mandalay Generating Station shall be removed prior to operation of this new 779 BHP Emergency Diesel Engine. (Rules 26.2)