



San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT



HEALTHY AIR LIVING™

APR 13 2016

Brent Winn
Aera Energy LLC
PO Box 11164
Bakersfield, CA 93389

RE: Final - Authority to Construct / Certificate of Conformity (Significant Modification)
Facility Number: S-1547
Project Number: S-1150568

Dear Mr. Winn:

The Air Pollution Control Officer has issued Authority to Construct permits to Aera Energy LLC for revision of monitoring requirements for three gas turbines, at western Kern County, CA. Enclosed are the Authority to Construct permits and a copy of the notice of final action to be published approximately three days from the date of this letter.

Notice of the District's preliminary decision to issue the Authority to Construct permits was published on May 4, 2015. The District's analysis of the proposal was also sent to CARB and US EPA Region IX on April 28, 2015. All comments received following the District's preliminary decision on this project were considered.

Comments received by the District during the public notice period resulted in minor changes due to public comment. These comments and the District responses to comments are included as an enclosure. These changes were minor and did not trigger additional public notification requirements, nor did they have any impact upon the Best Available Control Technology determination or on the amount of offsets required for project approval.

Prior to operating with the modifications authorized by the Authority to Construct, you must submit an application to modify the Title V permit as an administrative amendment in accordance with District Rule 2520, Section 11.5. Application forms have been enclosed for your use. These forms may also be found on the District's website at www.valleyair.org.

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

Mr. Brent Winn
Page 2

Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Leonard Scandura at (661) 392-5500.

Sincerely,

A handwritten signature in black ink, appearing to read "P. Arnaud Marjollet", written over a horizontal line.

Arnaud Marjollet
Director of Permit Services

AM:rue

Enclosures

cc: Tung Le, CARB (w/enclosure) via email
cc: Gerardo C. Rios, EPA (w/enclosure) via email



Facility # S-1547
AERA ENERGY LLC
PO BOX 11164
BAKERSFIELD, CA 93389-1164

AUTHORITY TO CONSTRUCT (ATC)

QUICK START GUIDE

1. **Pay Invoice:** Please pay enclosed invoice before due date.
2. **Modify Your Title V Permit.** Prior to operating the equipment authorized under this ATC, submit an application to modify your Title V permit. See application forms at <http://www.valleyair.org/busind/pto/ptoforms/1ptoforidx.htm>.
3. **Fully Understand ATC:** Make sure you understand ALL conditions in the ATC prior to construction, modification and/or operation.
4. **Follow ATC:** You must construct, modify and/or operate your equipment as specified on the ATC. Any unspecified changes may require a new ATC.
5. **Notify District:** You must notify the District's Compliance Department, at the telephone numbers below, upon start-up and/or operation under the ATC. Please record the date construction or modification commenced and the date the equipment began operation under the ATC. You may NOT operate your equipment until you have notified the District's Compliance Department. A startup inspection may be required prior to receiving your Permit to Operate.
6. **Source Test:** Schedule and perform any required source testing. See http://www.valleyair.org/busind/comply/source_testing.htm for source testing resources.
7. **Maintain Records:** Maintain all records required by ATC. Records are reviewed during every inspection (or upon request) and must be retained for at least 5 years.

By operating in compliance, you are doing your part to improve air quality for all Valley residents.

For assistance, please contact District Compliance staff at any of the telephone numbers listed below.

Sayed Sadredin
Executive Director/Air Pollution Control Officer

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4800 Enterprise Way
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Tel: (209) 557-6400 FAX: (209) 557-6475

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34946 Flyover Court
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Tel: 661-392-5500 FAX: 661-392-5585



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-148-22

ISSUANCE DATE: 04/06/2016

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

SECTION: 32 TOWNSHIP: 28S RANGE: 21E

EQUIPMENT DESCRIPTION:

MODIFICATION OF 21.45 MW GAS FIRED TURBINE ENGINE COGENERATION FACILITY #1 WITH GENERAL ELECTRIC MODEL LM2500 PE GAS TURBINE AND UNFIRED WASTE HEAT RECOVERY STEAM GENERATOR, AND BYPASS STACK EQUIPPED WITH SCR AND AMMONIA INJECTION: REPLACE EXISTING NOX, CO AND O2 CONTINUOUS EMISSION MONITORING SYSTEM (CEMS) WITH A NEW ROCKWELL AUTOMATION PREDICTIVE EMISSION MONITORING SYSTEM (PEMS)

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The owner or operator may install, certify, maintain, operate and quality-assure a Predictive Emission Monitoring System (PEMS) which continuously predicts and records the exhaust gas NOX, CO and O2 concentrations. Predictive emissions monitor(s) shall be capable of predicting emissions during normal operating conditions. PEMS results during startup and shutdown events shall be replaced with startup and shutdown emission rates obtained from source testing to determine compliance with emission limits contained in this permit. Startup/shutdown test results from any one of turbines S-1547-148, '-149, and '-151 may be considered representative for any of the three turbines. [District Rules 2201 and 4703 and 40 CFR 60.334(b)] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO



Renaud Marjollet, Director of Permit Services

S-1547-148-22; Apr 6 2016 2:35PM - EDGEHILR : Joint Inspection NOT Required

4. Prior to disconnecting the CEMs, the PEMS must pass a Relative Accuracy (RA) Test to be acceptable for use in demonstrating compliance with this permit. [District Rules 2201 and 4703 and 40 CFR 60.334(b)] Federally Enforceable Through Title V Permit
5. All conditions included in this permit pertaining to operation of the CEMS shall be kept until installation, and demonstration that all applicable PEMS requirements of PS-16 have been met including a successful initial RATA test. [District Rules 2201, 4702 and 40 CFR Subpart GG] Federally Enforceable Through Title V Permit
6. Details on the design of the PEMS (PEMS protocol) as specified in PS-16, Section 6.1 must be submitted and approved by the District 60 days prior to testing the PEMS for certification. This information must include number of input parameters, parameter operating envelope, source specific operating conditions affecting PEMS output, ambient conditions affecting PEMS operation, PEMS principal of operation including physical assumptions and mathematical manipulations supporting its operation, specific details on the testing to be performed for the PEMS training, data recorder scale, sensors to be used and sensor evaluation system, plan to detect and notify operator of parameter envelope exceedences, and recordkeeping. PEMS must be designed to perform automatic or manual determination of defective sensors on at least a daily basis. [District Rules 2201, 4702 and 40 CFR Subpart GG] Federally Enforceable Through Title V Permit
7. Initial PEMS relative accuracy (RA) testing (RATA) must be conducted as specified in PS-16, Section 8.2 and must include 9 test runs (RM, reference method) at each of low, medium, and high operating levels (3-level RA test). RA calculations using RM and PEMS data from the 3-level tests must be done using equations specified in PS-16, Section 12.2. [District Rules 2201, 4702 and 40 CFR Subpart GG] Federally Enforceable Through Title V Permit
8. Permittee shall perform a relative accuracy audit (RAA) consisting of at least three 30-minute portable analyzer or RM (reference method) determinations each quarter a relative accuracy test audit (RATA) is not performed as specified in Section 9.3 of EPA Performance Specification 16. The average of the 3 portable analyzer (RM) determinations must not differ from the simultaneous PEMS average value by more than 10 percent of the analyzer or RM value or the test is failed. [District Rules 2201, 4702 and 40 CFR Subpart GG] Federally Enforceable Through Title V Permit
9. If a PEMS passes all quarterly RAAs in the first year and also passes the subsequent yearly (RATA) in the second year, the permittee may elect to perform a single mid-year RAA in the second year in place of the quarterly RAAs as specified in Section 9.3 of EPA Performance Specification 16. This option may be repeated, but only until the PEMS fails either a mid-year RAA or a yearly RATA. When such a failure occurs, permittee must resume quarterly RAAs in the quarter following the failure and continue conducting quarterly RAAs until the PEMS successfully passes both a year of quarterly RAAs and a subsequent RATA. [District Rules 2201, 4702 and 40 CFR Subpart GG] Federally Enforceable Through Title V Permit
10. PEMS RA must not exceed 10 percent if the PEMS measurements are greater than 100 ppm or 0.2 lb/MMBtu. The RA must not exceed 20 percent if the PEMS measurements are between 100 ppm (or 0.2 lb/MMBtu) and 10 ppm (or 0.05 lb/MMBtu). For measurements below 10 ppm, the absolute mean difference between the PEMS measurements and the RM measurements must not exceed 2 ppm. [District Rules 1080, 2201, 4305, 4306, 4320 and 40 CFR Subpart Db, 40 CFR Part 64] Federally Enforceable Through Title V Permit
11. If PEMS fails to pass a quarterly RAA or yearly RATA test, or if changes are made that could result in a significant change in the emissions rate (e.g. turbine aging, process modification, new process operating modes, or changes to emission controls) the PEMS must be recertified by the earlier of 30 operating days or 180 calendar days after the failed RATA or after the change that has caused a significant change in emission rate as specified in PS-16, Section 8.5. [District Rules 2201, 4702 and 40 CFR Subpart GG] Federally Enforceable Through Title V Permit
12. An O&M Manual including the components specified by PS-16, Section 9.0 verifying that the system is generating quality assured data after the initial PEMS certification test must be submitted and approved by the District. [District Rules 2201, 4702 and 40 CFR Subpart GG] Federally Enforceable Through Title V Permit
13. Source shall maintain a Quality Control Plan (QA plan) including the components specified by PS-16, Section 9.0 to verify that the system is generating quality assured data after the initial PEMS certification test. QA plan shall include QA/QC summary of ongoing tests (listed in PS-16 Section 9.1 Table), daily sensor evaluation checks, quarterly RAAs, and yearly RATA. [District Rules 2201, 4702 and 40 CFR Subpart GG] Federally Enforceable Through Title V Permit
14. Plant operating personnel will be trained on the proper operation, maintenance and reporting requirements of the PEMS system. [District Rules 2201, 4702 and 40 CFR Subpart GG]

CONDITIONS CONTINUE ON NEXT PAGE

15. The NO_x, CO, and O₂ PEMS shall meet the requirements in 40 CFR 60, Performance Specifications 16 (PS-16), or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [40 CFR 60.334(b)(1) and, District Rule 1080, 6.3, 6.5, 6.6, & 7.2] Federally Enforceable Through Title V Permit
16. 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 40 CFR 60.334(b)(2) and District Rule 1080, 6.4] Federally Enforceable Through Title V Permit
17. The monitoring system shall be linked to a data logger or other data transfer system (e.g. FTP-portal) which is compatible with the District's Data acquisition system. Upon notice by the District that the facility's monitoring 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 monitoring system data is sent to the District by a District-approved alternative method. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit
18. The owner or operator shall maintain PEMS and/or CEMS records that contain the following: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance, duration of any periods during which a continuous monitoring system or monitoring device is inoperative, and emission measurements. [40 CFR 60.7(b), District Rule 1080, 7.3 & PSD SJ 85-03] Federally Enforceable Through Title V Permit
19. Permittee shall submit a PEMS and/or CEMS written report for each calendar quarter to the District. The report is due on the 30th day following the end of the calendar quarter. Quarterly report shall include: time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; 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; applicable time and date of each period during which the monitoring system 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. [40 CFR 60.334(j), (j)(5), District Rule 1080, 8.0 and District Rule 2520, 9.6.1 & PSD SJ 85-03] Federally Enforceable Through Title V Permit
20. Fuel consumption shall not exceed 5,650 MMBtu/day of fuel gas. [District Rule 2201] Federally Enforceable Through Title V Permit
21. HHV and LHV of the fuel shall be determined using ASTM D3588, ASTM 1826, or ASTM 19451. [District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit
22. NO_x emissions shall not exceed 75 ppmv @ 15% O₂ (one-hour rolling average in accordance with 40 CFR 60.13(h)). [40 CFR 60.332(b)] Federally Enforceable Through Title V Permit
23. NO_x emissions shall not exceed 60 ppmv @ 15% O₂ averaged over a 6-hour cumulative time period with in the initial PEMS training period not to exceed 14 days. At all other times during the initial PEMS training period NO_x emissions shall not exceed 3 ppmv @ 15% O₂ averaged, using consecutive 15-minute sampling periods, over a three-hour period.. [District Rule 2201] Federally Enforceable Through Title V Permit
24. Except during startup, shutdown, and stack transitions, and PEMS training period, emission rates (three-hour rolling average) shall not exceed any of the following: NO_x: 0.011 lb/MMBtu or 3 ppmv @ 15% O₂; and CO: 0.076 lb/MMBtu or 33.9 ppmvd @15% O₂. [District Rule 4703, 5.1, 5.2 and 7.2] Federally Enforceable Through Title V Permit
25. Except during startup and shutdown, emission rates from the gas turbine engine shall not exceed any of the following: 0.016 lb-PM₁₀/MMBtu, 0.010 lb-SO_x/MMBtu, or 0.008 lb-VOC/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
26. On days of gas turbine engine startup/shutdown, permittee shall demonstrate compliance with NO_x daily emission limitation by records of calculations using monitoring system data, fuel rate data, and daily hours of operation data. [District Rule 1080] Federally Enforceable Through Title V Permit
27. Maximum daily emission limitations (DEL) shall not exceed any of the following: 190.2 lb-NO_x/day; 56.5 lb-SO_x/day, 90.4 lb-PM₁₀/day, 676.1 lb-CO/day, or 45.2 lb-VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

28. The ammonia injection rate shall not exceed 25 lb/hr. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
29. The operator shall monitor the ammonia injection rate during CEMS and/or PEMS breakdowns to demonstrate NOx emission compliance. [District Rule 4703, 6.2.5] Federally Enforceable Through Title V Permit
30. Startup shall be defined as the period of time, not to exceed two hours, 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 operation. [District Rule 4703, 3.29 and 5.3] Federally Enforceable Through Title V Permit
31. Shutdown shall be defined as the period of time, not to exceed two hours, during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rule 4703, 3.26 and 5.3] Federally Enforceable Through Title V Permit
32. Stack transitions shall comply with the following criteria for HRSG Bypass Transition Period: the duration of time that the turbine's operation transitions between the heat recovery steam generator and bypass exhaust stack, when the selective catalytic reduction catalyst is not within the required temperature range or the required ammonia saturation level has not yet been achieved, the transition period not exceeding two hours, and NOx emissions not exceeding 15 ppmvd, corrected to 15% O₂, averaged over 2 hours, and the applicable CO compliance limits not being exceeded. [District Rule 4703] Federally Enforceable Through Title V Permit
33. Permittee shall report the following emission exceedances to the District: NOx emission rate on a three-hour average and daily NOx emissions during days of gas turbine engine startup/shutdown or stack transition. [District Rule 1080] Federally Enforceable Through Title V Permit
34. Permittee shall maintain accurate daily records of fuel gas consumption and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1081] Federally Enforceable Through Title V Permit
35. The owner or operator shall certify, maintain, operate and quality-assure a system which continuously measures or calculates and records the exhaust gas oxides of nitrogen, carbon monoxide, and oxygen or carbon dioxide. [District Rule 1080, 4.0, 40 CFR 60.334(b), District Rule 4703, 6.2.1, & PSD SJ 85-03] Federally Enforceable Through Title V Permit
36. When operating the continuous emissions monitoring system (CEMs), it shall meet the performance specification requirements in 40 CFR 60, Appendix B; and 40 CFR 51, Appendix P, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [District Rule 1080, 6.5 & PSD SJ 85-03] Federally Enforceable Through Title V Permit
37. When operating the continuous emissions monitoring system (CEMs), results must 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, 7.2] Federally Enforceable Through Title V Permit
38. Permittee shall submit reports of excess emissions for all periods of unit operation, including startup, shutdown, and malfunction in accordance with 40 CFR 60.344(j). [40 CFR 60.334(j)] Federally Enforceable Through Title V Permit
39. Excess emissions shall be defined as any consecutive 2-hour period during which the average emissions of NOx and CO, as measured by continuous monitoring system exceeds the concentration emissions limits set forth for these pollutants. Any emissions in excess of the limits imposed by conditions in this permit, as measured by the continuous monitoring equipment constitutes a violation of District Rules and Regulations and shall be reported by the operator to the APCO within 96 hours. [District Rule 1080, 9.0 & PSD SJ 85-03] Federally Enforceable Through Title V Permit
40. Operator shall notify the District no later than one hour after determining that a breakdown of the CEMS and/or PEMS has occurred. The operator shall inform the District of the intent to shut down the PEMS at least 24 hours prior to the event. [District Rule 1080, 10.0] Federally Enforceable Through Title V Permit
41. Gas turbine engine shall be fired exclusively on PUC-regulated or FERC-regulated natural gas or natural gas with sulfur content no greater than 0.8% by weight. [40 CFR 60.333] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

42. If the turbine is not fired on PUC-regulated or FERC-regulated natural gas, the sulfur content of the fuel shall be tested in accordance with 40 CFR 60.344(i). [40 CFR 60.344(i)] Federally Enforceable Through Title V Permit
43. Performance testing to measure exhaust gas NOx and CO concentrations shall be conducted annually. [40 CFR 60.335(b), District Rule 4703, 6.3 & PSD SJ 85-03] Federally Enforceable Through Title V Permit
44. The following test methods shall be used: NOx (ppmv) - EPA Methods 7E or 20, or ARB Method 100; CO (ppmv) - EPA Method 10 or 10B, or ARB Method 100; stack gas oxygen - EPA Method 3, 3A or 20, or ARB Method 100; and fuel gas sulfur content - ASTM D3246, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [40 CFR 60.335 and District Rules 1081, 4703, 6.4 & PSD SJ 85-03] Federally Enforceable Through Title V Permit
45. The District must be notified 30 days prior to any performance testing and a test plan shall be submitted for District approval 15 days prior to such testing. [District Rule 1081, 7.1] Federally Enforceable Through Title V Permit
46. Performance testing shall be witnessed or authorized by District personnel. Test results must be submitted to the District within 60 day of performance testing. [District Rule 1081, 7.2, 7.3] Federally Enforceable Through Title V Permit
47. Daily records of NOx and CO emission calculations during days of startup/shutdown or stack transitions shall be maintained and such records shall be made readily available for District inspection upon request. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
48. CO emissions shall not exceed (lbs/hr) (three-hour average) = $38-(0.2) \times (\text{ambient air temperature in } ^\circ\text{Fahrenheit})$ (not to exceed 30 lbs/hr) and (ppmv) = $1.86 \times (\text{lbs/hr}) @ 15\% \text{ O}_2$ (not to exceed 55.8 ppmv). [PSD SJ 85-03] Federally Enforceable Through Title V Permit
49. Permittee shall operate and maintain a continuous monitoring system to measure the ambient air temperature. [PSD SJ 85-03] Federally Enforceable Through Title V Permit
50. Permittee shall operate and maintain a water injection system and instrumentation to continuously monitor and record levels of consumption of fuel and water. [PSD SJ 85-03] Federally Enforceable Through Title V Permit
51. EPA Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in emissions above any allowable PSD emissions limits. [PSD SJ 85-03] Federally Enforceable Through Title V Permit
52. All equipment, facilities, or systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 89-02] Federally Enforceable Through Title V Permit
53. All correspondence as required by this permit shall be forwarded to: a) Director, Enforcement Division, Air and TRI Section (Attn: ENF-2-1), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Director, SJVUAPCD, 1990 East Gettysburg, Fresno, CA, 93726. [PSD SJ 89-02] Federally Enforceable Through Title V Permit
54. The owner or operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
55. Permittee shall maintain records of the following: 1) the occurrence and duration of any start-up, shutdown, or malfunction in the operation of the permit unit; 2) performance testing, evaluations, calibrations, checks, adjustments, and maintenance of the monitoring system; and 3) emission measurements. [District Rules 1080, 7.3; 2520, 9.4.2; 4703, 6.2.8] Federally Enforceable Through Title V Permit
56. The owner or operator shall maintain a stationary gas turbine operating log that includes, on a daily basis, the actual local start-up and stop time, length and reason for stack transitions, total hours of operation, and quantity and heat input of fuel used. [District Rule 4703, 6.2.6] Federally Enforceable Through Title V Permit
57. The owner or operator shall monitor the gas turbine exhaust gas NOx emissions using a system that meets EPA requirements as specified in 40 CFR Part 60 App. B, Spec. 3, 40 CFR Part 60 App. F, and 40 CFR Part 60.7 (c), 60.7 (d), and 60.13. [District Rule 4703, 6.2.3] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

58. Permittee shall monitor and record the stack concentration of NO_x continuously using CEMS during PEMS training period. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-149-21

ISSUANCE DATE: 04/06/2016

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

SECTION: 32 TOWNSHIP: 28S RANGE: 21E

EQUIPMENT DESCRIPTION:

MODIFICATION OF 21.45 MW GAS FIRED TURBINE ENGINE COGENERATION FACILITY #2 WITH GENERAL ELECTRIC MODEL LM2500 PE GAS TURBINE, UNFIRED WASTE HEAT RECOVERY STEAM GENERATOR EQUIPPED WITH SCR AND AMMONIA INJECTION, AND BYPASS STACK EQUIPPED WITH SCR AND AMMONIA INJECTION: REPLACE EXISTING NOX, CO AND O2 CONTINUOUS EMISSION MONITORING SYSTEM (CEMS) WITH A NEW ROCKWELL AUTOMATION PREDICTIVE EMISSION MONITORING SYSTEM (PEMS)


CONDITIONS

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Seyed Sadredin, Executive Director / APCO



Arnaud Marjollet, Director of Permit Services

S-1547-149-21 : Apr 6 2016 2:35PM - EDGEHLR : Joint Inspection NOT Required

4. Prior to disconnecting the CEMs, the PEMS must pass a Relative Accuracy (RA) Test to be acceptable for use in demonstrating compliance with this permit. [District Rules 2201 and 4703 and 40 CFR 60.334(b)] Federally Enforceable Through Title V Permit
5. All conditions included in this permit pertaining to operation of the CEMS shall be kept until installation, and demonstration that all applicable PEMS requirements of PS-16 have been met including a successful initial RATA test. [District Rules 2201, 4702 and 40 CFR Subpart GG] Federally Enforceable Through Title V Permit
6. Details on the design of the PEMS (PEMS protocol) as specified in PS-16, Section 6.1 must be submitted and approved by the District 60 days prior to testing the PEMS for certification. This information must include number of input parameters, parameter operating envelope, source specific operating conditions affecting PEMS output, ambient conditions affecting PEMS operation, PEMS principal of operation including physical assumptions and mathematical manipulations supporting its operation, specific details on the testing to be performed for the PEMS training, data recorder scale, sensors to be used and sensor evaluation system, plan to detect and notify operator of parameter envelope exceedences, and recordkeeping. PEMS must be designed to perform automatic or manual determination of defective sensors on at least a daily basis. [District Rules 2201, 4702 and 40 CFR Subpart GG] Federally Enforceable Through Title V Permit
7. Initial PEMS relative accuracy (RA) testing (RATA) must be conducted as specified in PS-16, Section 8.2 and must include 9 test runs (RM, reference method) at each of low, medium, and high operating levels (3-level RA test). RA calculations using RM and PEMS data from the 3-level tests must be done using equations specified in PS-16, Section 12.2. [District Rules 2201, 4702 and 40 CFR Subpart GG] Federally Enforceable Through Title V Permit
8. Permittee shall perform a relative accuracy audit (RAA) consisting of at least three 30-minute portable analyzer or RM (reference method) determinations each quarter a relative accuracy test audit (RATA) is not performed as specified in Section 9.3 of EPA Performance Specification 16. The average of the 3 portable analyzer (RM) determinations must not differ from the simultaneous PEMS average value by more than 10 percent of the analyzer or RM value or the test is failed. [District Rules 2201, 4702 and 40 CFR Subpart GG] Federally Enforceable Through Title V Permit
9. If a PEMS passes all quarterly RAAs in the first year and also passes the subsequent yearly (RATA) in the second year, the permittee may elect to perform a single mid-year RAA in the second year in place of the quarterly RAAs as specified in Section 9.3 of EPA Performance Specification 16. This option may be repeated, but only until the PEMS fails either a mid-year RAA or a yearly RATA. When such a failure occurs, permittee must resume quarterly RAAs in the quarter following the failure and continue conducting quarterly RAAs until the PEMS successfully passes both a year of quarterly RAAs and a subsequent RATA. [District Rules 2201, 4702 and 40 CFR Subpart GG] Federally Enforceable Through Title V Permit
10. PEMS RA must not exceed 10 percent if the PEMS measurements are greater than 100 ppm or 0.2 lb/MMBtu. The RA must not exceed 20 percent if the PEMS measurements are between 100 ppm (or 0.2 lb/MMBtu) and 10 ppm (or 0.05 lb/MMBtu). For measurements below 10 ppm, the absolute mean difference between the PEMS measurements and the RM measurements must not exceed 2 ppm. [District Rules 1080, 2201, 4305, 4306, 4320 and 40 CFR Subpart Db, 40 CFR Part 64] Federally Enforceable Through Title V Permit
11. If PEMS fails to pass a quarterly RAA or yearly RATA test, or if changes are made that could result in a significant change in the emissions rate (e.g. turbine aging, process modification, new process operating modes, or changes to emission controls) the PEMS must be recertified by the earlier of 30 operating days or 180 calendar days after the failed RATA or after the change that has caused a significant change in emission rate as specified in PS-16, Section 8.5. [District Rules 2201, 4702 and 40 CFR Subpart GG] Federally Enforceable Through Title V Permit
12. An O&M Manual including the components specified by PS-16, Section 9.0 verifying that the system is generating quality assured data after the initial PEMS certification test must be submitted and approved by the District. [District Rules 2201, 4702 and 40 CFR Subpart GG] Federally Enforceable Through Title V Permit
13. Source shall maintain a Quality Control Plan (QA plan) including the components specified by PS-16, Section 9.0 to verify that the system is generating quality assured data after the initial PEMS certification test. QA plan shall include QA/QC summary of ongoing tests (listed in PS-16 Section 9.1 Table), daily sensor evaluation checks, quarterly RAAs, and yearly RATA. [District Rules 2201, 4702 and 40 CFR Subpart GG] Federally Enforceable Through Title V Permit
14. Plant operating personnel will be trained on the proper operation, maintenance and reporting requirements of the PEMS system. [District Rules 2201, 4702 and 40 CFR Subpart GG]

CONDITIONS CONTINUE ON NEXT PAGE

15. The NO_x, CO, and O₂ PEMS shall meet the requirements in 40 CFR 60, Performance Specifications 16 (PS-16), or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [40 CFR 60.334(b)(1) and, District Rule 1080, 6.3, 6.5, 6.6, & 7.2] Federally Enforceable Through Title V Permit
16. 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 40 CFR 60.334(b)(2) and District Rule 1080, 6.4] Federally Enforceable Through Title V Permit
17. The monitoring system shall be linked to a data logger or other data transfer system (e.g. FTP-portal) which is compatible with the District's Data acquisition system. Upon notice by the District that the facility's monitoring 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 monitoring system data is sent to the District by a District-approved alternative method. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit
18. The owner or operator shall maintain PEMS and/or CEMS records that contain the following: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance, duration of any periods during which a continuous monitoring system or monitoring device is inoperative, and emission measurements. [40 CFR 60.7(b), District Rule 1080, 7.3 & PSD SJ 85-03] Federally Enforceable Through Title V Permit
19. Permittee shall submit a PEMS and/or CEMS written report for each calendar quarter to the District. The report is due on the 30th day following the end of the calendar quarter. Quarterly report shall include: time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; 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; applicable time and date of each period during which the monitoring system 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. [40 CFR 60.334(j), (j)(5), District Rule 1080, 8.0 and District Rule 2520, 9.6.1& PSD SJ 85-03] Federally Enforceable Through Title V Permit
20. Fuel consumption shall not exceed 5,650 MMBtu/day of fuel gas. [District Rule 2201] Federally Enforceable Through Title V Permit
21. HHV and LHV of the fuel shall be determined using ASTM D3588, ASTM 1826, OR ASTM 1945. [District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit
22. Except during periods of gas turbine engine startup/shutdown and stack transition, and PEMS training period, emission rates (three-hour rolling average) shall not exceed any of the following: 0.011 lb-NO_x/MMBtu or 3 ppmv-NO_x @ 15% O₂, and 0.076 lb-CO/MMBtu or 200 ppmvd-CO @15% O₂. [District Rules 2201 and 4703, 5.1.2, 5.2] Federally Enforceable Through Title V Permit
23. Except during startup/shutdown, emission rates shall not exceed any of the following: 0.016 lb-PM₁₀/MMBtu, 0.010 lb-SO_x/MMBtu, 0.008 lb-VOC/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
24. NO_x emissions shall not exceed 60 ppmv @ 15% O₂ averaged over a 6-hour cumulative time period with in the initial PEMS training period not to exceed 14 days. At all other times during the initial PEMS training period NO_x emissions shall not exceed 3 ppmv @ 15% O₂ averaged, using consecutive 15-minute sampling periods, over a three-hour period.. [District Rule 2201] Federally Enforceable Through Title V Permit
25. Maximum daily emission limitations (DEL) shall not exceed any of the following: 190.2 lb-NO_x/day, 56.5 lb-SO_x/day, 90.4 lb-PM₁₀/day, 676.1 lb-CO/day, and 45.2 lb-VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit
26. Startup and shutdown of gas turbine engine, as defined in 40 CFR Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [District Rule 4703, 3.25] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

27. Stack transitions shall comply with the following criteria for HRSG Bypass Transition Period: the duration of time that the turbine's operation transitions between the heat recovery steam generator and bypass exhaust stack, when the selective catalytic reduction catalyst is not within the required temperature range or the required ammonia saturation level has not yet been achieved, the transition period not exceeding two hours, and NOx emissions not exceeding 15 ppmvd, corrected to 15% O2, averaged over 2 hours, and the applicable CO compliance limits not being exceeded. [District Rule 4703] Federally Enforceable Through Title V Permit
28. On days of gas turbine engine startup/shutdown and/or stack transition, permittee shall demonstrate compliance with NOx daily emission limitation by records of calculations using monitoring system data, fuel rate data, and daily hours of operation data. [District Rule 1080] Federally Enforceable Through Title V Permit
29. Permittee shall report the following emission exceedances to the District: NOx emission rate on a three-hour average, and DEL of NOx during days of gas turbine engine startup/shutdown or stack transition. [District Rule 1080] Federally Enforceable Through Title V Permit
30. Compliance testing shall be conducted annually as required by the District-approved plan. [District Rule 1081] Federally Enforceable Through Title V Permit
31. 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
32. Permittee shall maintain accurate daily records of fuel gas consumption and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1081] Federally Enforceable Through Title V Permit
33. Compliance with sulfur oxide emission limits shall be demonstrated by fuel gas sulfur analysis by independent testing laboratory annually. [District Rule 1081] Federally Enforceable Through Title V Permit
34. Permittee shall comply in full with Rule 4001 (New Source Performance Standards) requirements, including notification, recordkeeping and monitoring requirements. [District Rule 4001] Federally Enforceable Through Title V Permit
35. Continuous emission monitoring systems shall be calibrated and operated according to EPA guidelines as specified in CFR, Part 60, Appendix B. [District Rule 4001 and 40 CFR 60.334(b)] Federally Enforceable Through Title V Permit
36. The owner or operator shall install, certify, maintain, operate and quality-assure a system which continuously measures or calculates and records the exhaust gas oxides of nitrogen, carbon monoxide, and oxygen or carbon dioxide. [District Rule 1080, 4.0, 40 CFR 60.334(a), District Rule 4703, 6.2.1, & PSD SJ 85-03] Federally Enforceable Through Title V Permit
37. When operating the continuous emissions monitoring system (CEMs), it shall meet the performance specification requirements in 40 CFR 60, Appendix B; and 40 CFR 51, Appendix P, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [District Rule 1080, 6.5 & PSD SJ 85-03] Federally Enforceable Through Title V Permit
38. When operating the continuous emissions monitoring system (CEMs), results must 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, 7.2] Federally Enforceable Through Title V Permit
39. Excess emissions shall be defined as any consecutive 2-hour period during which the average emissions of NOx and CO, as measured by continuous monitoring system exceeds the concentration emissions limits set forth for these pollutants. Any emissions in excess of the limits imposed by conditions in this permit, as measured by the continuous monitoring equipment constitutes a violation of District Rules and Regulations and shall be reported by the operator to the APCO within 96 hours. [District Rule 1080, 9.0 & PSD SJ 85-03] Federally Enforceable Through Title V Permit
40. Operator shall notify the District no later than one hour after determining that a breakdown of the CEMS and/or PEMS has occurred. The operator shall inform the District of the intent to shut down the PEMS at least 24 hours prior to the event. [District Rule 1080, 10.0] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

41. Fuel sulfur content for a fuel source shall be measured weekly. Test reports of measured fuel sulfur content shall be maintained. If measured sulfur content is less than 3.5 gr/100 scf for 8 consecutive weeks for a fuel source, then the testing frequency shall be semi-annually. If any semi-annual testing show fuel sulfur content exceeds 3.5 gr/100 scf, weekly testing shall resume and exceedance shall be reported to APCO. [40 CFR 60.334(h) & District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
42. Performance testing to measure exhaust gas NOx and CO concentrations shall be conducted annually. [40 CFR 60.335(b), District Rule 4703, 6.3 & PSD SJ 85-03] Federally Enforceable Through Title V Permit
43. The following test methods shall be used: NOx (ppmv) - EPA Methods 7E or 20, or ARB Method 100; CO (ppmv) - EPA Method 10 or 10B, or ARB Method 100; stack gas oxygen - EPA Method 3, 3A or 20, or ARB Method 100; and fuel gas sulfur content - ASTM D3246 or double GC for H2S and mercaptans, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [40 CFR 60.335 and District Rules 1081, 4703, & PSD SJ 85-03] Federally Enforceable Through Title V Permit
44. The District must be notified 30 days prior to any performance testing and a test plan shall be submitted for District approval 15 days prior to such testing. [District Rule 1081, 7.1] Federally Enforceable Through Title V Permit
45. Performance testing shall be witnessed or authorized District by personnel. Test results must be submitted to the District within 60 day of performance testing. [District Rule 1081, 7.2 & 7.3] Federally Enforceable Through Title V Permit
46. Daily records of NOx and CO emission calculations during days of startup/shutdown or stack transition shall be maintained and such records shall be made readily available for District inspection upon request. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
47. Source testing to measure ammonia shall be conducted using test method BAAQMD ST-1B. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
48. The permittee shall maintain records of the daily calculated ammonia slip measurements. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
49. The operator shall monitor the ammonia injection rate that was established at the time of startup emission testing during CEMS and/or PEMS breakdowns to demonstrate NOx emission compliance. [District Rule 4703, 6.2.5] Federally Enforceable Through Title V Permit
50. Gas turbine engine shall be fired exclusively on PUC-regulated or FERC-regulated natural gas or natural gas with sulfur content no greater than 0.8% by weight. [40 CFR 60.333] Federally Enforceable Through Title V Permit
51. Permittee shall maintain records of the following: 1) the occurrence and duration of any start-up, shutdown, or malfunction in the operation of the permit unit; 2) performance testing, evaluations, calibrations, checks, adjustments, and maintenance of monitoring system; and 3) emission measurements. [District Rules 1080, 7.3, 2520, 9.3.2 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit
52. The owner or operator shall maintain a stationary gas turbine operating log that includes, on a daily basis, the actual local start-up and stop time, length and reason for stack transition, total hours of operation, and quantity and heat input of fuel used. [District Rules 2520, 9.3.2, 4703, 6.2.6] Federally Enforceable Through Title V Permit
53. The owner or operator of any existing stationary gas turbine system (unless exempted because all turbines are under ownership or control and have NOx and CO emissions limits which are shown on the current Permit to Operate and which do not exceed the applicable Compliance Limits in Section 5.0) shall submit to the APCO for approval, an emissions control plan of all actions. The control plan shall include a schedule of increments of progress that will be taken to comply with the requirements of the applicable NOx Compliance Limit in Section 5.0 and Compliance Schedule in Section 7.0 of District Rule 4703 (as amended 9/20/07). [District Rule 4703, 6.1] Federally Enforceable Through Title V Permit
54. The owner or operator shall monitor the gas turbine exhaust gas NOx emissions using a system that meets EPA requirements as specified in 40 CFR Part 60 App. B, Spec. 3, 40 CFR Part 60 App. F, and 40 CFR Part 60.7 (c), 60.7 (d), and 60.13. [District Rule 4703, 6.2.3] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

55. CO emissions shall not exceed (lbs/hr) (three-hour average) = $38 - (0.2) * (\text{ambient air temperature in } \text{\textcircled{F}}\text{ahrenheit})$ (not to exceed 30 lbs/hr) and (ppmv) = $1.86 * (\text{lbs/hr}) @ 15\% \text{ O}_2$ (not to exceed 55.8 ppmv). [PSD SJ 85-03] Federally Enforceable Through Title V Permit
56. Permittee shall operate and maintain a continuous monitoring system to measure the ambient air temperature. [PSD SJ 85-03] Federally Enforceable Through Title V Permit
57. Permittee shall operate and maintain a water injection system and instrumentation to continuously monitor and record levels of consumption of fuel and water. [PSD SJ 85-03] Federally Enforceable Through Title V Permit
58. EPA Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in emissions above any allowable PSD emissions limits. [PSD SJ 85-03] Federally Enforceable Through Title V Permit
59. All equipment, facilities, or systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 89-02] Federally Enforceable Through Title V Permit
60. All correspondence as required by this permit shall be forwarded to: a) Director, Enforcement Division, Air and TRI Section (Attn:ENF-2-1), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Director, SJVUAPCD, 1990 East Gettysburg, Fresno, CA, 93726. [PSD SJ 89-02] Federally Enforceable Through Title V Permit
61. Permittee shall monitor and record the stack concentration of NOx continuously using CEMS during PEMs training period. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
62. The owner or operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-151-22

ISSUANCE DATE: 04/06/2016

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

SECTION: 32 TOWNSHIP: 28S RANGE: 21E

EQUIPMENT DESCRIPTION:

MODIFICATION OF 21.45 MW GAS FIRED TURBINE ENGINE COGENERATION FACILITY #3 WITH GENERAL ELECTRIC MODEL LM2500 PE GAS TURBINE, UNFIRED WASTE HEAT RECOVERY STEAM GENERATOR EQUIPPED WITH SCR AND AMMONIA INJECTION, AND BYPASS STACK EQUIPPED WITH SCR AND AMMONIA INJECTION: REPLACE EXISTING NOX, CO AND O2 CONTINUOUS EMISSION MONITORING SYSTEM (CEMS) WITH A NEW ROCKWELL AUTOMATION PREDICTIVE EMISSION MONITORING SYSTEM (PEMS)

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The owner or operator may install, certify, maintain, operate and quality-assure a Predictive Emission Monitoring System (PEMS) which continuously predicts and records the exhaust gas NOX, CO and O2 concentrations. Predictive emissions monitor(s) shall be capable of predicting emissions during normal operating conditions. PEMS results during startup and shutdown events shall be replaced with startup and shutdown emission rates obtained from source testing to determine compliance with emission limits contained in this permit. Startup/shutdown test results from any one of turbines S-1547-148, '-149, and '-151 may be considered representative for any of the three turbines. [District Rules 2201 and 4703 and 40 CFR 60.334(b)] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services

S-1547-151-22; Apr 9 2016 2:35PM -- EDGEHLR : Joint Inspection NOT Required

4. Prior to disconnecting the CEMs, the PEMS must pass a Relative Accuracy (RA) Test to be acceptable for use in demonstrating compliance with this permit. [District Rules 2201 and 4703 and 40 CFR 60.334(b)] Federally Enforceable Through Title V Permit
5. All conditions included in this permit pertaining to operation of the CEMS shall be kept until installation, and demonstration that all applicable PEMS requirements of PS-16 have been met including a successful initial RATA test. [District Rules 2201, 4702 and 40 CFR Subpart GG] Federally Enforceable Through Title V Permit
6. Details on the design of the PEMS (PEMS protocol) as specified in PS-16, Section 6.1 must be submitted and approved by the District 60 days prior to testing the PEMS for certification. This information must include number of input parameters, parameter operating envelope, source specific operating conditions affecting PEMS output, ambient conditions affecting PEMS operation, PEMS principal of operation including physical assumptions and mathematical manipulations supporting its operation, specific details on the testing to be performed for the PEMS training, data recorder scale, sensors to be used and sensor evaluation system, plan to detect and notify operator of parameter envelope exceedences, and recordkeeping. PEMS must be designed to perform automatic or manual determination of defective sensors on at least a daily basis. [District Rules 2201, 4702 and 40 CFR Subpart GG] Federally Enforceable Through Title V Permit
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CONDITIONS CONTINUE ON NEXT PAGE

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20. Fuel consumption shall not exceed 5,650 MMBtu/day of fuel gas. [District Rule 2201] Federally Enforceable Through Title V Permit
21. HHV and LHV of the fuel shall be determined using ASTM D3588, ASTM 1826, OR ASTM 1945. [District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit
22. Except during periods of gas turbine engine startup/shutdown and stack transition, and PEMS training period, emission rates (three-hour rolling average) shall not exceed any of the following: 0.0111 lb-NO_x/MMBtu or 3 ppmv-NO_x @ 15% O₂, and 0.076 lb-CO/MMBtu or 33.9 ppmvd-CO @15% O₂. [District Rule 4703, 5.1.2, 5.2 and District Rule 2201] Federally Enforceable Through Title V Permit
23. Except during periods of gas turbine engine startup/shutdown, emission rates shall not exceed any of the following: 0.016 lb-PM₁₀/MMBtu, 0.010 lb-SO_x/MMBtu, or 0.008 lb-VOC/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
24. Maximum daily emission limitations (DEL) shall not exceed any of the following: 190.2 lb-NO_x/day, 56.5 lb-SO_x/day, 90.4 lb-PM₁₀/day, 676.1 lb-CO/day, and 45.2 lb-VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit
25. NO_x emissions shall not exceed 60 ppmv @ 15% O₂ averaged over a 6-hour cumulative time period with in the initial PEMS training period not to exceed 14 days. At all other times during the initial PEMS training period NO_x emissions shall not exceed 3 ppmv @ 15% O₂ averaged, using consecutive 15-minute sampling periods, over a three-hour period.. [District Rule 2201] Federally Enforceable Through Title V Permit
26. Startup and shutdown of gas turbine engine, as defined in 40 CFR Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [District Rule 4703, 3.25] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

27. Stack transitions shall comply with the following criteria for HRSG Bypass Transition Period: the duration of time that the turbine's operation transitions between the heat recovery steam generator and bypass exhaust stack, when the selective catalytic reduction catalyst is not within the required temperature range or the required ammonia saturation level has not yet been achieved, the transition period not exceeding two hours, and NOx emissions not exceeding 15 ppmvd, corrected to 15% O₂, averaged over 2 hours, and the applicable CO compliance limits not being exceeded. [District Rule 4703] Federally Enforceable Through Title V Permit
28. On days of gas turbine engine startup/shutdown and/or stack transition, permittee shall demonstrate compliance with NOx daily emission limitation by records of calculations using monitoring system data, fuel rate data, and daily hours of operation data. [District Rule 1080] Federally Enforceable Through Title V Permit
29. Permittee shall report the following emission exceedances to the District: NOx emission rate on a three-hour average, and DEL of NOx during days of gas turbine engine startup/shutdown. [District Rule 1080] Federally Enforceable Through Title V Permit
30. Compliance testing shall be conducted annually as required by the District-approved plan. [District Rule 1081] Federally Enforceable Through Title V Permit
31. 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
32. Permittee shall maintain accurate daily records of fuel gas consumption and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1081] Federally Enforceable Through Title V Permit
33. Compliance with sulfur oxide emission limits shall be demonstrated by fuel gas sulfur analysis by independent testing laboratory annually. [District Rule 1081] Federally Enforceable Through Title V Permit
34. Permittee shall comply in full with Rule 4001 (New Source Performance Standards) requirements, including notification, recordkeeping and monitoring requirements. [District Rule 4001] Federally Enforceable Through Title V Permit
35. Continuous emission monitoring systems shall be calibrated and operated according to EPA guidelines as specified in CFR, Part 60, Appendix B. [District Rule 4001 and 40 CFR 60.334(b)] Federally Enforceable Through Title V Permit
36. The owner or operator shall install, certify, maintain, operate and quality-assure a system which continuously measures or calculates and records the exhaust gas oxides of nitrogen, carbon monoxide, and oxygen or carbon dioxide. [District Rule 1080, 4.0, 40 CFR 60.334(b), District Rule 4703, 6.2.1, & PSD SJ 85-03] Federally Enforceable Through Title V Permit
37. When operating the continuous emissions monitoring system (CEMs), it shall meet the performance specification requirements in 40 CFR 60, Appendix B; and 40 CFR 51, Appendix P, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [District Rule 1080, 6.5 & PSD SJ 85-03] Federally Enforceable Through Title V Permit
38. When operating the continuous emissions monitoring system (CEMs), results must 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, 7.2] Federally Enforceable Through Title V Permit
39. Excess emissions shall be defined as any consecutive 2-hour period during which the average emissions of NOx and CO, as measured by continuous monitoring system exceeds the concentration emissions limits set forth for these pollutants. Any emissions in excess of the limits imposed by conditions in this permit, as measured by the continuous monitoring equipment constitutes a violation of District Rules and Regulations and shall be reported by the operator to the APCO within 96 hours. [District Rule 1080, 9.0 & PSD SJ 85-03] Federally Enforceable Through Title V Permit
40. Operator shall notify the District no later than one hour after the determining that a breakdown of the CEMS and/or PEMS has occurred. The operator shall inform the District of the intent to shut down the monitoring system at least 24 hours prior to the event. [District Rule 1080, 10.0] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

41. Fuel sulfur content for a fuel source shall be measured weekly. Test reports of measured fuel sulfur content shall be maintained. If measured sulfur content is less than 3.5 gr/100 scf for 8 consecutive weeks for a fuel source, then the testing frequency shall be semi-annually. If any semi-annual testing show fuel sulfur content exceeds 3.5 gr/100 scf, weekly testing shall resume and exceedance shall be reported to APCO. [40 CFR 60.334(b)(c) & District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
42. Performance testing to measure exhaust gas NOx and CO concentrations shall be conducted annually. [40 CFR 60.335(b), District Rule 4703, 6.3 & PSD SJ 85-03] Federally Enforceable Through Title V Permit
43. The following test methods shall be used: NOx (ppmv) - EPA Methods 7E or 20, or ARB Method 100; CO (ppmv) - EPA Method 10 or 10B, or ARB Method 100; stack gas oxygen - EPA Method 3, 3A or 20, or ARB Method 100; and fuel gas sulfur content - ASTM D3246 or double GC for H2S and mercaptans, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [40 CFR 60.335(b) and District Rules 1081, 4703, & PSD SJ 85-03] Federally Enforceable Through Title V Permit
44. The District must be notified 30 days prior to any performance testing and a test plan shall be submitted for District approval 15 days prior to such testing. [District Rule 1081, 7.1] Federally Enforceable Through Title V Permit
45. Performance testing shall be witnessed or authorized District personnel. Test results must be submitted to the District within 60 day of performance testing. [District Rule 1081, 7.2, 7.3] Federally Enforceable Through Title V Permit
46. Daily records of NOx and CO emission calculations during days of startup/shutdown or stack transition shall be maintained and such records shall be made readily available for District inspection upon request. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
47. CO emissions shall not exceed (lbs/hr) (three-hour average) = $38-(0.2) \times (\text{ambient air temperature in } ^\circ\text{Fahrenheit})$ (not to exceed 30 lbs/hr) and (ppmv) = $1.86 \times (\text{lbs/hr}) @ 15\% \text{ O}_2$ (not to exceed 55.8 ppmv). [PSD SJ 85-03] Federally Enforceable Through Title V Permit
48. Permittee shall operate and maintain a continuous monitoring system to measure the ambient air temperature. [PSD SJ 85-03] Federally Enforceable Through Title V Permit
49. Permittee shall operate and maintain a water injection system and instrumentation to continuously monitor and record levels of consumption of fuel and water. [PSD SJ 85-03] Federally Enforceable Through Title V Permit
50. EPA Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in emissions above any allowable PSD emissions limits. [PSD SJ 85-03] Federally Enforceable Through Title V Permit
51. All equipment, facilities, or systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 89-02] Federally Enforceable Through Title V Permit
52. All correspondence as required by this permit shall be forwarded to: a) Director, Environment Division, Air and TRI Section (Attn: ENF-2-1), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Director, SJVUAPCD, 1990 East Gettysburg, Fresno, CA, 93726. [PSD SJ 89-02] Federally Enforceable Through Title V Permit
53. Source testing to measure ammonia shall be conducted using test method BAAQMD ST-1B. [District Rules 4102 and 2201] Federally Enforceable Through Title V Permit
54. The permittee shall maintain records of the daily calculated ammonia slip measurements. [District Rules 4102 and 2201] Federally Enforceable Through Title V Permit
55. The operator shall monitor the ammonia injection rate that was established at the time of startup emission testing during PEMS and/or CEMS breakdowns to demonstrate NOx emission compliance. [District Rule 4703, 6.2.5] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

56. Permittee shall maintain records of the following: 1) the occurrence and duration of any start-up, shutdown, or malfunction in the operation of the permit unit; 2) performance testing, evaluations, calibrations, checks, adjustments, and maintenance of monitoring system 3) emission measurements and 4) all records or required monitoring data and support information. All records shall be maintained for a period of five years and available for District inspection upon request. [District Rules 1080, 7.3, 2520, 9.4.2 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit
57. The owner or operator shall maintain a stationary gas turbine operating log that includes, on a daily basis, the actual local start-up and stop time, length and reason for stack transition, total hours of operation, and quantity and heat input of fuel used. [District Rules 2520, 9.4.2, 4703, 6.2.6] Federally Enforceable Through Title V Permit
58. Gas turbine engine shall be fired exclusively on PUC-regulated or FERC-regulated natural gas or natural gas with sulfur content no greater than 0.8% by weight. [40 CFR 60.333] Federally Enforceable Through Title V Permit
59. The owner or operator of any existing stationary gas turbine system (unless exempted because all turbines are under ownership or control and have NO_x and CO emissions limits which are shown on the current Permit to Operate and which do not exceed the applicable Compliance Limits in Section 5.0) shall submit to the APCO for approval, an emissions control plan of all actions. The control plan shall include a schedule of increments of progress that will be taken to comply with the requirements of the applicable NO_x Compliance Limit in Section 5.0 and Compliance Schedule in Section 7.0 of District Rule 4703 (as amended 9/20/07). [District Rule 4703, 6.1.5] Federally Enforceable Through Title V Permit
60. The owner or operator shall monitor the gas turbine exhaust gas NO_x emissions using a system that meets EPA requirements as specified in 40 CFR Part 60 App. B, Spec. 3, 40 CFR Part 60 App. F, and 40 CFR Part 60.7 (c), 60.7 (d), and 60.13. [District Rule 4703, 6.2.3] Federally Enforceable Through Title V Permit
61. Permittee shall monitor and record the stack concentration of NO_x continuously using CEMS during PEMs training period. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

EPA Comments for Proposed ATC/Title V Significant Modification Evaluation for Aera Energy LLC, Facility ID S-1547, Project # S-1150568

EPA Comment I

Each of the existing emission units is currently required to utilize a certified CEMS to monitor and report emissions. The project proposes to replace the existing CEMS with a PEMS. Until the source installs and passes the certification requirements for the new PEMS, the source must continue to use the CEMS to monitor and report emission data. The District cannot simply update existing conditions related to the CEMS by replacing the word "CEMS" with "PEMS," as is the case in the proposed ATCs. See Conditions 30 and 31 for examples where CEMS was replaced with PEMS but the rest of the condition still had references to CEMS activities, such as "measuring emissions."

EPA views the proposed project as a request to install and test a new monitoring system (e.g., a PEMS). Accordingly, until the source demonstrates that the PEMS is an adequate replacement for the existing monitoring system (CEMS), the permit must continue to require use of the CEMS. Please revise the proposed ATC to include all of the CEMS conditions in the current permit to operate, and add a new condition stating which specific conditions will be removed after the PEMS is certified. A condition must also be added to specify that the CEMS conditions may be removed only if the PEMS has been installed, met all the applicable requirements of PS-16 and passed the initial RATA test. EPA suggests revising Condition 4 as follows to address this requirement:

The existing CEMS shall not be ~~Prior to disconnected~~ing until the District has reviewed and approved the RATA results for ~~the CEMS, the PEMS, and all other PEMS related conditions in~~ -must pass a Relative Accuracy (RA) Test to be acceptable for use in demonstrating compliance with this permit have been satisfied.

District Response to EPA Comment 1

The following new condition was added to the ATC:

5. All conditions included in this permit pertaining to operation of the CEMS shall be kept until installation, and demonstration that all applicable PEMS requirements of PS-16 have been met including a successful initial RATA test. [District Rules 2201, 4702 and 40 CFR Subpart GG] Y

Conditions 30 and 32 were revised to add the words" and/or CEMS" in the event that the CEMS is retained.

30. (new Condition 18) The owner or operator shall maintain PEMS and/or CEMS records that contain the following: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance, duration of any periods during which a continuous

monitoring system or monitoring device is inoperative, and emission measurements. [40 CFR 60.7(b), District Rule 1080, 7.3 & PSD SJ 85-03] Y

32. (new Condition 19) Permittee shall submit a PEMS and/or CEMS written report for each calendar quarter to the District. The report is due on the 30th day following the end of the calendar quarter. Quarterly report shall include: time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; 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; applicable time and date of each period during which the PEMS 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. [40 CFR 60.334(j), (j)(5), District Rule 1080, 8.0 and District Rule 2520, 9.6.1& PSD SJ 85-03] Y

EPA Comment 2

In March 2009, EPA published Performance Specification 16 – Specifications and Test Procedures for PEMS in Stationary Source. PS-16 allows approved operators to use a PEMS to show compliance with emission limits under 40 CFR 60, 61 or 63. EPA notes that the emission limits for the 3 gas turbines are based on NSR LAER (District BACT) emission limitations, which is not one of the emission limitations that PS-16 states it may be used for. Emission rate limits based on NSR program requirements are often significantly lower than those required under NSPS or NESHAP regulations. EPA believes that the use of a PEMS in lieu of a CEMS for NSR emission limits is only appropriate if the PEMS can pass the strict initial RATA and ongoing QA/QC testing, as required by PS-16.

EPA's general comment is for the District to add or revise the specific conditions regarding the installation and testing of the new PEMS unit, as well as the necessary conditions regarding on-going use and testing of the PEMS. The following X comments are related to specific issues regarding the PEMS permit conditions. All ATC condition numbers cited are from S-1547-151-22.

District Response to EPA Comment 2

The comment is generic and refers the reader to later comments ("following X comments") which the District has provided responses .

EPA Comment 3

Unlike a CEMS, a PEMS unit must be programmed for the specific type of emission unit and control device to be monitored. PS-16 refers to this as the PEMS Design in Section 6.1 and lists several parameters that must be specified and/or developed as part of the PEMS. The PEMS must undergo a period of "training" while operating within a specified "Parameter Operating Envelope" (POE). Condition 8 contains the only requirements regarding the POE. It reads: Operating envelope must be established to ensure that

PEMS is providing accurate data. Given the key role the POE plays in ensuring the accuracy of the PEMS, we do not believe this condition, simply requiring an operating envelope to be established, is sufficient to ensure a proper POE is developed for this emission unit and control device. Please revise this condition to require the submittal of a PEMS Design, as specified in PS-16, Section 6.1, and the specific details regarding the testing to be performed as the PEMS is trained. This should be a separate document from the RATA testing protocol.

District Response to EPA Comment 3

The following conditions were replaced by the new condition listed below:

~~6. Source shall provide a PEMS protocol, specific for the source, which is reviewed and approved by the District. [District Rules 2201 and 4703 and 40 CFR 60.334(b)] Y~~

~~8. Operating envelope must be established to ensure that PEMS is providing accurate data. [District Rules 2201 and 4703 and 40 CFR 60.334(b)] Y~~

New Condition 6 Details on the design of the PEMS (PEMS protocol) as specified in PS-16, Section 6.1 must be submitted and approved by the District 60 days prior to testing the PEMS for certification. This information must include number of input parameters, parameter operating envelope, source specific operating conditions affecting PEMS output, ambient conditions affecting PEMS operation, PEMS principal of operation including physical assumptions and mathematical manipulations supporting its operation, specific details on the testing to be performed for the PEMS training, data recorder scale, sensors to be used and sensor evaluation system, plan to detect and notify operator of parameter envelope exceedances, and recordkeeping. PEMS must be designed to perform automatic or manual determination of defective sensors on at least a daily basis. [District Rules 2201, 4702 and 40 CFR Subpart GG] Y

EPA Comment 4

In order to properly train a PEMS, the emission unit must be operated "out of compliance" with the permitted emission limits. Neither the application evaluation nor the ATC conditions address this issue. Please revise the evaluation and/or the ATC conditions to address these periods of potential non-compliance. [District Rules 2201, 4702 and 40 CFR Subpart GG] Y

District Response to EPA Comment 4

The following new condition was added to the ATC

New Condition 23 NOx emissions shall not exceed 60 ppmv @ 15% O2 averaged over a 6-hour cumulative time period with in the initial PEMS training period not to exceed 14 days. At all other times during the initial PEMS training period NOx emissions shall not exceed 3 ppmv @ 15% O2 averaged, using consecutive 15-minute sampling periods, over a three-hour period. [District Rule 2201] Y

EPA Comment 5

Condition 6 of the draft ATC reads in part "Source shall provide a PEMS protocol...which is reviewed and approved by the District." The condition is not practically enforceable in that it does not specify when this protocol must be submitted, what must be included in the protocol or that the source must obtain District approval prior to utilizing the testing protocol. EPA assumes the condition is referencing a RATA test protocol for the PEMS, but that is not clear. EPA also notes that PS-16 provides different RATA testing requirements, depending on whether the PEMS is to be used to indicate excess emissions or verify continuous compliance standards. (See Section 2.1 – Initial PEMS Certification) The permit does not specify the purpose of the PEMS, therefore it is unclear what testing requirement must be met. Please revise this condition to specify when the protocol must be submitted, what content the protocol must include (e.g., for excess emissions or continuous compliance, in accordance with PS-16 RATA test requirements), and a provision that the RATA testing may only be performed if the District has approved the PEMS protocol.

District Response to EPA Comment 5

The following 3 conditions were replaced by 4 new conditions for additional clarity on the PEMS protocol and testing to verify continuous compliance standards:

- ~~5. If PEMS fails to pass a quarterly RAA or yearly RATA test, or if changes are made that could result in a significant change in the emissions rate (e.g. turbine aging, process modification, new process operating modes, or changes to emission controls) the PEMS must be recertified using the test procedures in Section 8.1 of PS16. [District Rules 2201 and 4703 and 40 CFR 60.334(b)] Y~~
- ~~6. Source shall provide PEMS protocol, specific for the source, which is reviewed and approved by the District. [District Rules 2201 and 4703 and 40 CFR 60.334(b)] Y~~
- ~~7. Source shall maintain a PEMS plan based on RATA testing and to comply with all established operating parameters. [District Rules 2201 and 4703 and 40 CFR 60.334(b)] Y~~

New Condition 6 Details on the design of the PEMS (PEMS protocol) as specified in PS-16, Section 6.1 must be submitted and approved by the District 60 days prior to testing the PEMS for certification. This information must include number of input parameters, parameter operating envelope,

source specific operating conditions affecting PEMS output, ambient conditions affecting PEMS operation, PEMS principal of operation including physical assumptions and mathematical manipulations supporting its operation, specific details on the testing to be performed for the PEMS training, data recorder scale, sensors to be used and sensor evaluation system, plan to detect and notify operator of parameter envelope exceedances, and recordkeeping. PEMS must be designed to perform automatic or manual determination of defective sensors on at least a daily basis. [District Rules 2201, 4702 and 40 CFR Subpart GG] Y

New Condition 7. Initial PEMS relative accuracy (RA) testing (RATA) must be conducted as specified in PS-16, Section 8.2 and must include 9 test runs (RM, reference method) at each of low, medium, and high operating levels (3-level RA test). RA calculations using RM and PEMS data from the 3-level tests must be done using equations specified in PS-16, Section 12.2. [District Rules 2201, 4702 and 40 CFR Subpart GG] Y

New Condition 8. Permittee shall perform a relative accuracy audit (RAA) consisting of at least three 30-minute portable analyzer or RM determinations each quarter a RATA is not performed as specified in Section 9.3 of EPA Performance Specification 16. The average of the 3 portable analyzer or RM determinations must not differ from the simultaneous PEMS average value by more than 10 percent of the analyzer or RM value or the test is failed. [District Rules 2201, 4702 and 40 CFR Subpart GG] Y

New Condition 9. If a PEMS passes all quarterly RAAs in the first year and also passes the subsequent yearly (RATA) in the second year, the permittee may elect to perform a single mid-year RAA in the second year in place of the quarterly RAAs as specified in Section 9.3 of EPA Performance Specification 16. This option may be repeated, but only until the PEMS fails either a mid-year RAA or a yearly RATA. When such a failure occurs, permittee must resume quarterly RAAs in the quarter following the failure and continue conducting quarterly RAAs until the PEMS successfully passes both a year of quarterly RAAs and a subsequent RATA. [District Rules 2201, 4702 and 40 CFR Subpart GG] Y

EPA Comment 6

The ATC requires the PEMS to be accurate in predicting startup and shutdown (SU/SD) emissions only if it passes the relative accuracy test during these time periods. Otherwise source test data may be used to demonstrate compliance with the SU/SD emissions limits. This represents a relaxation of the requirement to measure emissions

during SU/SD. Revise the EE to discuss the possible less frequent (PEMs) monitoring during SU/SD.

District Response to EPA Comment 6

Area has stated that the PEMS is not capable of predicting emissions during startup and shutdown. Condition 3 has been revised as follows:

- 3. The owner or operator may install, certify, maintain, operate and quality-assure a Predictive Emission Monitoring System (PEMS) which continuously predicts and records the exhaust gas NOX, CO and O2 concentrations. Predictive emissions monitor(s) shall be capable of predicting emissions during normal operating conditions. ~~and during startups and shutdowns provided the PEMS passes the relative accuracy requirement for startups and shutdowns specified herein. If relative accuracy of PEMS cannot be demonstrated during startup conditions, PEMS results during startup and shutdown events shall be replaced with startup emission rates obtained from source testing to determine compliance with emission limits contained in this permit. Startup/shutdown test results from any one of turbines S-1547-148, '-149, and '-151 may be considered representative for any of the three turbines. [District Rules 2201 and 4703 and 40 CFR 60.334(b)] Y~~*

EPA Comment 7

A PEMS is highly reliant on data collected from various sensors, yet EPA could not find any conditions in the proposed ATC regarding the need to verify that sensors are working properly. While PS-16 specifies that the sensors must be checked daily, we believe this is a requirement that should specify in the permit to ensure accurate reporting of emission data.

District Response to EPA Comment 7

The following new condition was added:

New Condition 6 Details on the design of the PEMS (PEMS protocol) as specified in PS-16, Section 6.1 must be submitted and approved by the District 60 days prior to testing the PEMS for certification. This information must include number of input parameters, parameter operating envelope, source specific operating conditions affecting PEMS output, ambient conditions affecting PEMS operation, PEMS principal of operation including physical assumptions and mathematical manipulations supporting its operation, specific details on the testing to be performed for the PEMS training, data recorder scale, sensors to be used and sensor evaluation system, plan to detect and notify operator of parameter envelope exceedances, and recordkeeping. PEMS must be designed to perform automatic or manual determination of

defective sensors on at least a daily basis. [District Rules 2201, 4702 and 40 CFR Subpart GG] Y

EPA Comment 8

EPA reviewed a similar project and noted two conditions that should also be included in this permit. (Liberty Packing, Project N-1151578) Please add the following two conditions to this ATC:

- An O&M manual containing detailed system requirements ~~and the monitoring plan required under 40 CFR 60.49b(e)~~ must be submitted and approved.
- Plant operating personnel will be trained on the proper operation, maintenance and reporting requirements of the PEMS system.

EPA Comment 11

Condition 7 requires the source to maintain a "PEMS plan based on RATA testing." It is not clear to EPA what type of plan is based on RATA testing, or the purpose and content of this plan. Please clarify if this is the O&M manual referred to in the ATC for Liberty Packing, or some other document. As written, this condition lacks the clarity to be practically enforceable.

District Response to EPA Comments 8 and 11

Condition 7 was replaced by the following conditions for additional clarity:

- ~~7. Source shall maintain a PEMS plan based on RATA testing and to comply with all established operating parameters. [District Rules 2201 and 4703 and 40 CFR 60.334(b)] Y~~

New Condition 12 An O&M Manual including the components specified by PS-16, Section 9.0 verifying that the system is generating quality assured data after the initial PEMS certification test must be submitted and approved by the District. [District Rule 4703 and 40 CFR Subpart GG]

New Condition 13 Source shall maintain a Quality Control Plan (QA plan) including the components specified by PS-16, Section 9.0 to verify that the system is generating quality assured data after the initial PEMS certification test. QA plan shall include QA/QC summary of ongoing tests (listed in PS-16 Section 9.1 Table), daily sensor evaluation checks, quarterly RAAs, and yearly RATA. [District Rule 4703 and 40 CFR Subpart GG]

*New Condition 14 Plant operating personnel will be trained on the proper operation, maintenance and reporting requirements of the PEMS system.
[District Rule 4703 and 40 CFR Subpart GG]*

EPA Comment 9

Condition 3 of the ATC uses the term "shall" regarding the installation and use of the PEMS. Given that the emission unit already has a certified CEMS, it seems that this condition should use the word "may", given that if the PEMS unit fails in anyway, the source will be required to maintain the existing CEMS and be relieved of the requirement to install the proposed PEMS.

District Response to EPA Comment 9

Condition 3 was revised as follows:

3. The owner or operator may install, certify, maintain, operate and quality-assure a Predictive Emission Monitoring System (PEMS) which continuously predicts and records the exhaust gas NOX, CO and O2 concentrations. Predictive emissions monitor(s) shall be capable of predicting emissions during normal operating conditions. PEMS results during startup and shutdown events shall be replaced with startup and shutdown emission rates obtained from source testing to determine compliance with emission limits contained in this permit. Startup/shutdown test results from any one of turbines S-1547-148, '-149, and '-151 may be considered representative for any of the three turbines. [District Rules 2201, 4702 and 40 CFR Subpart GG] Y

EPA Comment 10

Condition 5 requires the PEMS to be recertified if certain specified events occur. However the condition does not provide any requirements regarding how quickly the recertification test must occur. PS-16 allows up to 60 operating days or 180 calendar days for a retest. Given that the District is classified as an extreme ozone nonattainment area and the emission limits for this unit constitute federal LAER, EPA suggests reducing the number of operating days to no more than 30. Please add a specific timeline to the requirements of Condition 5.

District Response to EPA Comment 10

Condition 5 was revised as follows:

5. (new Condition 11) If PEMS fails to pass a quarterly RAA or yearly RATA test , or if changes are made that could result in a significant change in the emissions rate (e.g. turbine aging, process modification, new process operating modes, or changes to emission controls) the PEMS must be recertified by the earlier of 30 operating days or 180 calendar days after the failed RATA or after the change that has caused a

significant change in emission rate as specified in PS-16, Section 8.5. [District Rules 2201, 4702 and 40 CFR Subpart GG] Y

EPA Comment 12

Please update the EPA address in Condition 35, for providing any correspondence to read as follows: a) Director, Enforcement Division, Air and TRI Section (Attn: ENF-2-1), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105.

District Response to EPA Comment 12

Condition 35 was revised as follows:

53. All correspondence as required by this permit shall be forwarded to: a) ~~Director, Air Management Division, Compliance Section (Attn: A-3-3)~~ Director, Enforcement Division, Air and TRI Section (Attn: ENF-2-1), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Director, SJVUAPCD, 1990 East Gettysburg, Fresno, CA, 93726. [PSD SJ 89-02] Y