San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

NOV 03 2015

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

Re: Notice of Final Action - Minor Title V Permit Modification
District Facility # S-1547
Project # S-1123782

Dear Mr. Winn:

The Air Pollution Control Officer has modified the Title V permit for AERA Energy, LLC by incorporating S-1547-1060-12, '-1061-10, '-1061-12, and '-1062-12. Aera proposes to increase the allowable ammonia slip limit to 30 ppmv for units S-1547-1060, '-1061, and '-1062. In addition to designate natural gas fired turbine '-1061 as a compliant dormant emissions unit.

Enclosed is the modified Title V permit. The application and proposal were sent to US EPA Region IX on 8/11/15. No comments were received following the District's preliminary decision on this project.

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

Sincerely,

Arnaud Marjollet
Director of Permit Services

AM:wej

Enclosures

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

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-1547-1060-15 **EXPIRATION DATE:** 05/31/2016

SECTION: 13 **TOWNSHIP:** 26S **RANGE:** 20E

EQUIPMENT DESCRIPTION:
3.5 MW COMBINED CYCLE GAS TURBINE TOPPING CYCLE COGENERATION WITH SELECTIVE CATALYTIC REDUCTION (SCR) LOST HILLS UNIT #4

PERMIT UNIT REQUIREMENTS

1. While dormant, the fuel line shall be physically disconnected from the unit. [District Rule 2080] Federally Enforceable Through Title V Permit
2. Permittee shall submit written notification to the District upon designating the unit as dormant or active. [District Rule 2080] Federally Enforceable Through Title V Permit
3. While dormant, normal source testing shall not be required. [District Rule 2080] Federally Enforceable Through Title V Permit
4. Upon recommencing operation of this unit, normal source testing shall resume. [District Rule 2080] Federally Enforceable Through Title V Permit
5. Any source testing required by this permit shall be performed within 60 days of recommencing operation of this unit, regardless of whether the unit remains active or is again designated as dormant. [District Rule 2080] Federally Enforceable Through Title V Permit
6. Records of all dates and times that this unit is designated as dormant or active, and copies of all corresponding notices to the District, shall be maintained, retained for a period of at least five years, and made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit
7. Cogeneration unit shall include Allison Model 501-KB-5 48.7 MMBTU/hr gas-fired engine, synchronous electrical generator, unfired 22.5 MMBTU/hr steam generator, and inlet air evaporative cooler. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Turbine lube oil tank and generator gearbox lube oil tank shall vent only through fiber bed filter system or other District-approved control Device. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Gas turbine engine shall be equipped with continuously recording fuel gas flowrate monitor. [40 CFR 60.334(a)] Federally Enforceable Through Title V Permit
10. Permittee shall install, operate and maintain in calibration a system which continuously measures and records elapsed time of turbine operation. [40 CFR 60.334(a) and District Rule 4703, 6.2.1] Federally Enforceable Through Title V Permit
11. Gas turbine engine shall be equipped with water injection system for NOx control. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Gas turbine engine water injection rate shall be maintained at a water-to-fuel ratio documented to result in compliance with emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Gas turbine engine shall be equipped with continuously recording water to fuel injection rate monitoring system accurate to within +/- 5%. [District Rule 2201& 40 CFR 60.334(a)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

14. If ammonia injection system is inoperative for more than 1 hour, gas turbine shall be shut down. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Evaporative cooler shall use only fresh and filtered water. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Maximum emission rate of volatile organic compounds (VOC's) from turbine lube oil vent shall not exceed 0.02 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Compliance testing of lube oil vent and gearbox vent shall be required if visible emissions from either vent exceeds 5% opacity or equivalent Ringelmann 1/4. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Waste heat recovery steam generator exhaust shall be equipped with permanent provisions to allow collection of gas samples consistent with EPA methods. [District Rule 1081] Federally Enforceable Through Title V Permit
19. The ammonia (NH3) emissions from the exhaust of the SCR system serving this gas turbine shall not exceed 30 ppmvd. [District Rule 4102]
20. Permittee shall maintain accurate records of ammonia consumption. [District Rule 1070 and 4703] Federally Enforceable Through Title V Permit
21. Gas temperature at SCR catalyst section inlet shall be continuously monitored by operational temperature indicator. Inlet gas temperature to catalyst bed shall be maintained within range recommended by catalyst manufacturer and determined by performance tests. [40 CFR 60.334(a) and District Rule 4703, 6.2.1] Federally Enforceable Through Title V Permit
22. Permittee shall install, operate and maintain in calibration a system which continuously measures and records ammonia injection flow rate and pressure. Ammonia injection flow rate and pressure shall be operated within the range recommended by SCR manufacturer and determined by performance tests such that the turbine maintains 95% or greater control efficiency or complies with the applicable NOx emission concentration limit. [40 CFR 60.334(a) and District Rule 4703, 6.2.1] Federally Enforceable Through Title V Permit
23. Except during startup, shutdown, and reduced load periods, any one-hour period during which the average ammonia injection flowrate, as measured by the continuous monitoring system, falls outside the flowrate range as determined to demonstrate compliance shall be reported to the APCO. Each report shall include the average ammonia injection flowrate, average fuel consumption, ambient conditions, turbine gas load and nitrogen content of the fuel during the period of excess emissions. [40 CFR 60.334(c)] Federally Enforceable Through Title V Permit
24. Fuel gas sulfur content shall not exceed 19.5 ppmv as hydrogen sulfide (H2S) or 1.1 gr/100 scf as total fuel sulfur. [District Rule 2201] Federally Enforceable Through Title V Permit
25. 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 1.1 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 1.1 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
26. Except during periods of startup and shutdown emissions rates (three hour rolling average) shall not exceed any of the following: NOx (as NO2): 5 ppmv dry @ 15% O2, CO: 41 ppmv dry @ 15% O2. [District Rule 4703, 5.1.2, 5.2] Federally Enforceable Through Title V Permit
27. Startup and shutdown of the gas turbine, as defined in this permit and in 40 CFR Subpart A 60.2, shall not exceed a time period of two hours for startup and two hours for shutdown, per occurrence. Emission concentrations subsequent to this startup period shall not exceed the limits specified in this permit except during shutdown. [40 CFR Subpart A 60.2 and District Rule 4703] Federally Enforceable Through Title V Permit
28. The duration of reduced load shall not exceed a time period of one hour per occurrence. [District Rule 4703, 6.2.4] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

29. Emissions shall not exceed any of the following limits: NOx (as NO2); 150.7 lb/day, CO: 107.5 lb/day, PM10: 14.6 lb/day; SOx (as SO2): 3.8 lb/day or VOC: 39.6 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

30. Daily records of NOx and CO emission calculations during days of startup/shutdown 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

31. Maximum NOx (as NO2) and SOx (as SO2) emission rates (1 hr average) shall not exceed NSPS standard of 150 ppmv-dry @ 15% O2, and 150 ppmv-dry @ 15% O2, respectively. [40 CFR 60.332(a)(2) & 60.333(a)] Federally Enforceable Through Title V Permit

32. Source testing to measure exhaust gas NOx, CO, and NH3 concentrations and, if applicable, Selective Catalytic Reduction (SCR) control efficiency shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). Performance testing shall be conducted under conditions representative of normal operation. [40 CFR 60.335(b), District Rule 4703, 6.3 & District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

33. 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 D1072, D4468 or ASTM D3246 or double GC for H2S and mercaptans, fuel gas hhv - ASTM D3598, D1826 or D1945 in conjunction with ASTM D3588, Ammonia slip - BAAQMD method ST-1B. [40 CFR 60.335(b) and District Rules 1081 & 4703] Federally Enforceable Through Title V Permit

34. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Last Amended December 16, 1993). [District Rule 1081, and County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera)] Federally Enforceable Through Title V Permit

35. 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

36. 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

37. The permittee shall monitor and record the stack concentration of NOx, CO, NH3, and O2 at least once every month in which a source test is not performed. NOx, CO and O2 monitoring shall be conducted utilizing a portable analyzer that meets District specifications. NH3 monitoring shall be conducted utilizing Draeger tubes or a District approved equivalent method. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the previous calendar month. [District Rule 4703] Federally Enforceable Through Title V Permit

38. If the NOx or CO concentrations corrected to 15% O2 as measured by the portable analyzer or the NH3 concentration, as measured by Draeger tubes or a District approved equivalent method, exceed the permitted levels the permittee shall return the emissions to compliant levels as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer or the ammonia monitoring equipment continue to show emission limit violations after 1 hour of operation following detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation that is subject to enforcement action has occurred. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4703] Federally Enforceable Through Title V Permit

39. Failure of catalyst to perform as required because of catalyst poisoning or fouling shall not be recognized as a basis for a Rule 1100 enforcement exemption. [District Rule 1070 and 4703] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

40. All NOx, CO, O2 and ammonia emission readings shall be taken with the unit operating at conditions representative of normal operation or under the conditions specified in the Permit to Operate. The NOx, CO and O2 analyzer as well as the NH3 emission monitoring equipment shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Analyzer readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4703] Federally Enforceable Through Title V Permit

41. Ammonia emission readings shall be conducted at the time the NOx, CO and O2 readings are taken. [District Rule 4703] Federally Enforceable Through Title V Permit

42. The permittee shall maintain records of: (1) the date and time of NOx, CO, NH3 and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOx, CO and NH3 concentrations corrected to 3% O2, (3) make and model of the portable analyzer, (4) portable analyzer calibration records, (5) the method of determining the NH3 emission concentration, and (6) a description of any corrective action taken to maintain the emissions at or below the acceptable levels. [District Rule 4703] Federally Enforceable Through Title V Permit

43. Permittee shall report the following emission exceedance to the District: emission rates of NOx & CO on a three-hour rolling average and NSPS emission rate on one hour average. [District Rule 1070, 2201 and 4703] Federally Enforceable Through Title V Permit

44. 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 reduced load periods, total hours of operation and quantity of fuel used. During days of gas turbine startup/shutdown, permittee shall maintain accurate daily records of natural gas consumption for normal operation and for the startup/shutdown periods. This information may be recorded electronically. Daily entries in the operating log are not required for periods of non-operation. [District Rules 2520, 9.4.2 & 4703, 6.2.4] Federally Enforceable Through Title V Permit

45. Permittee shall maintain accurate records of all maintenance activities, periodic inspections, and repairs of SCR unit, water and NH3 injection systems, and their associated controller and instrumentation units. [District Rules 1070 and 4703] Federally Enforceable Through Title V Permit

46. Permittee shall comply in full with Rule 4001 (New Source Performance Standards, 40 CFR 60 Subpart GG) requirements, including notification, recordkeeping and monitoring requirements. [District Rule 4001] Federally Enforceable Through Title V Permit

47. The owner or operator shall maintain all records for a period of five years from the date of entry and shall make such records available to the APCO upon request. [District Rules 1080, 2201, & 4703, 6.2.4] Federally Enforceable Through Title V Permit

48. Note: Formerly S-1129-50.

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-1547-1061-11 **EXPIRATION DATE:** 05/31/2016

SECTION: 13 **TOWNSHIP:** 26S **RANGE:** 20E

EQUIPMENT DESCRIPTION:
3.5 MW COMBINED CYCLE GAS TURBINE TOPPING CYCLE COGENERATION WITH SELECTIVE CATALYTIC REDUCTION (SCR) - LOST HILLS UNIT #5

PERMIT UNIT REQUIREMENTS

1. While dormant, the fuel line shall be physically disconnected from the unit. [District Rule 2080] Federally Enforceable Through Title V Permit
2. Permittee shall submit written notification to the District upon designating the unit as dormant or active. [District Rule 2080] Federally Enforceable Through Title V Permit
3. While dormant, normal source testing shall not be required. [District Rule 2080] Federally Enforceable Through Title V Permit
4. Upon recommencing operation of this unit, normal source testing shall resume. [District Rule 2080] Federally Enforceable Through Title V Permit
5. Any source testing required by this permit shall be performed within 60 days of recommencing operation of this unit, regardless of whether the unit remains active or is again designated as dormant. [District Rule 2080] Federally Enforceable Through Title V Permit
6. Records of all dates and times that this unit is designated as dormant or active, and copies of all corresponding notices to the District, shall be maintained, retained for a period of at least five years, and made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit
7. Cogeneration unit shall include Allison Model 501-KB-5 48.7 MMBTU/hr gas-fired engine, synchronous electrical generator, unfired 22.5 MMBTU/hr steam generator, and inlet air evaporative cooler. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Turbine lube oil tank and generator gearbox lube oil tank shall vent only through fiber bed filter system or other District-approved control Device. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Gas turbine engine shall be equipped with continuously recording fuel gas flowrate monitor. [40 CFR 60.334(a)] Federally Enforceable Through Title V Permit
10. Permittee shall install, operate and maintain in calibration a system which continuously measures and records elapsed time of turbine operation. [40 CFR 60.334(a) and District Rule 4703, 6.2.1] Federally Enforceable Through Title V Permit
11. Gas turbine engine shall be equipped with water injection system for NOx control. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Gas turbine engine water injection rate shall be maintained at a water-to-fuel ratio documented to result in compliance with emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Gas turbine engine shall be equipped with continuously recording water to fuel injection rate monitoring system accurate to within +/- 5%. [District Rule 2201& 40 CFR 60.334(a)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

14. If ammonia injection system is inoperative for more than 1 hour, gas turbine shall be shut down. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Evaporative cooler shall use only fresh and filtered water. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Maximum emission rate of volatile organic compounds (VOC's) from turbine lube oil vent shall not exceed 0.02 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Compliance testing of lube oil vent and gearbox vent shall be required if visible emissions from either vent exceeds 5% opacity or equivalent Ringelmann 1/4. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Waste heat recovery steam generator exhaust shall be equipped with permanent provisions to allow collection of gas samples consistent with EPA methods. [District Rule 1081] Federally Enforceable Through Title V Permit
19. The ammonia (NH3) emissions from the exhaust of the SCR system serving this gas turbine shall not exceed 30 ppmvd. [District Rule 4102]
20. Permittee shall maintain accurate records of ammonia consumption. [District Rule 1070 and 4703] Federally Enforceable Through Title V Permit
21. Gas temperature at SCR catalyst section inlet shall be continuously monitored by operational temperature indicator. Inlet gas temperature to catalyst bed shall be maintained within range recommended by catalyst manufacturer and determined by performance tests. [40 CFR 60.334(a) and District Rule 4703, 6.2.1] Federally Enforceable Through Title V Permit
22. Permittee shall install, operate and maintain in calibration a system which continuously measures and records ammonia injection flow rate and pressure. Ammonia injection flow rate and pressure shall be operated within the range recommended by SCR manufacturer and determined by performance tests such that the turbine maintains 95% or greater control efficiency or complies with the applicable NOx emission concentration limit. [40 CFR 60.334(a) and District Rule 4703, 6.2.1] Federally Enforceable Through Title V Permit
23. Except during startup, shutdown, and reduced load periods, any one-hour period during which the average ammonia injection flowrate, as measured by the continuous monitoring system, falls outside the flowrate range as determined to demonstrate compliance shall be reported to the APCO. Each report shall include the average ammonia injection flowrate, average fuel consumption, ambient conditions, turbine gas load and nitrogen content of the fuel during the period of excess emissions. [40 CFR 60.334(c)] Federally Enforceable Through Title V Permit
24. Fuel gas sulfur content shall not exceed 19.5 ppmv as hydrogen sulfide (H2S) or 1.1 gr/100 scf as total fuel sulfur. [District Rule 2201] Federally Enforceable Through Title V Permit
25. 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 1.1 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 1.1 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
26. Except during periods of startup and shutdown emissions rates (three hour rolling average) shall not exceed any of the following: NOx (as NO2): 5 ppmv dry @ 15% O2, CO: 41 ppmv dry @ 15% O2. [District Rule 4703, 5.1.2, 5.2] Federally Enforceable Through Title V Permit
27. Startup and shutdown of the gas turbine, as defined in this permit and in 40 CFR Subpart A 60.2, shall not exceed a time period of two hours for startup and two hours for shutdown, per occurrence. Emission concentrations subsequent to this startup period shall not exceed the limits specified in this permit except during shutdown. [40 CFR Subpart A 60.2 and District Rule 4703] Federally Enforceable Through Title V Permit
28. The duration of reduced load shall not exceed a time period of one hour per occurrence. [District Rule 4703, 6.2.4] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

29. Emissions shall not exceed any of the following limits: NOx (as NO2); 150.7 lb/day, CO: 107.5 lb/day, PM10: 14.6 lb/day; SOx (as SO2): 3.8 lb/day or VOC: 39.6 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

30. Daily records of NOx and CO emission calculations during days of startup/shutdown 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

31. Maximum NOx (as NO2) and SOx (as SO2) emission rates (1 hr average) shall not exceed NSPS standard of 150 ppmv-dry @ 15% O2, and 150 ppmv-dry @ 15% O2, respectively. [40 CFR 60.332(a)(2) & 60.333(a)] Federally Enforceable Through Title V Permit

32. Source testing to measure exhaust gas NOx, CO, and NH3 concentrations and, if applicable, Selective Catalytic Reduction (SCR) control efficiency shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). Performance testing shall be conducted under conditions representative of normal operation. [40 CFR 60.335(b), District Rule 4703, 6.3 & District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

33. 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 D1072, D4468 or ASTM D3246 or double GC for H2S and mercaptans, fuel gas hhv - ASTM D3598, D1826 or D1945 in conjunction with ASTM D3588, Ammonia slip - BAAQMD method ST-1B. [40 CFR 60.335(b) and District Rules 1081 & 4703] Federally Enforceable Through Title V Permit

34. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Last Amended December 16, 1993). [District Rule 1081, and County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera)] Federally Enforceable Through Title V Permit

35. 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

36. 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

37. The permittee shall monitor and record the stack concentration of NOx, CO, NH3, and O2 at least once every month in which a source test is not performed. NOx, CO and O2 monitoring shall be conducted utilizing a portable analyzer that meets District specifications. NH3 monitoring shall be conducted utilizing Draeger tubes or a District approved equivalent method. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the previous calendar month. [District Rule 4703] Federally Enforceable Through Title V Permit

38. If the NOx or CO concentrations corrected to 15% O2 as measured by the portable analyzer or the NH3 concentration, as measured by Draeger tubes or a District approved equivalent method, exceed the permitted levels the permittee shall return the emissions to compliant levels as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer or the ammonia monitoring equipment continue to show emission limit violations after 1 hour of operation following detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation that is subject to enforcement action has occurred. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4703] Federally Enforceable Through Title V Permit

39. Failure of catalyst to perform as required because of catalyst poisoning or fouling shall not be recognized as a basis for a Rule 1100 enforcement exemption. [District Rule 1070 and 4703] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

40. All NOx, CO, O2 and ammonia emission readings shall be taken with the unit operating at conditions representative of normal operation or under the conditions specified in the Permit to Operate. The NOx, CO and O2 analyzer as well as the NH3 emission monitoring equipment shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Analyzer readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4703] Federally Enforceable Through Title V Permit

41. Ammonia emission readings shall be conducted at the time the NOx, CO and O2 readings are taken. [District Rule 4703] Federally Enforceable Through Title V Permit

42. The permittee shall maintain records of: (1) the date and time of NOx, CO, NH3 and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOx, CO and NH3 concentrations corrected to 3% O2, (3) make and model of the portable analyzer, (4) portable analyzer calibration records, (5) the method of determining the NH3 emission concentration, and (6) a description of any corrective action taken to maintain the emissions at or below the acceptable levels. [District Rule 4703] Federally Enforceable Through Title V Permit

43. Permittee shall report the following emission exceedance to the District: emission rates of NOx & CO on a three-hour rolling average and NSPS emission rate on one hour average. [District Rule 1070, 2201 and 4703] Federally Enforceable Through Title V Permit

44. 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 reduced load periods, total hours of operation and quantity of fuel used. During days of gas turbine startup/shutdown, permittee shall maintain accurate daily records of natural gas consumption for normal operation and for the startup/shutdown periods. This information may be recorded electronically. Daily entries in the operating log are not required for periods of non-operation. [District Rules 2520, 9.4.2 & 4703, 6.2.4] Federally Enforceable Through Title V Permit

45. Permittee shall maintain accurate records of all maintenance activities, periodic inspections, and repairs of SCR unit, water and NH3 injection systems, and their associated controller and instrumentation units. [District Rules 1070 and 4703] Federally Enforceable Through Title V Permit

46. Permittee shall comply in full with Rule 4001 (New Source Performance Standards, 40 CFR 60 Subpart GG) requirements, including notification, recordkeeping and monitoring requirements. [District Rule 4001] Federally Enforceable Through Title V Permit

47. The owner or operator shall maintain all records for a period of five years from the date of entry and shall make such records available to the APCO upon request. [District Rules 1080, 2201, & 4703, 6.2.4] Federally Enforceable Through Title V Permit

48. Note: Formerly S-1129-51.

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-1547-1062-13 **EXPIRATION DATE:** 05/31/2016

SECTION: 13 **TOWNSHIP:** 26S **RANGE:** 20E

EQUIPMENT DESCRIPTION:
3.5 MW COMBINED CYCLE GAS TURBINE TOPPING CYCLE COGENERATION WITH SELECTIVE CATALYTIC REDUCTION (SCR) LOST HILLS UNIT #6

PERMIT UNIT REQUIREMENTS

1. While dormant, the fuel line shall be physically disconnected from the unit. [District Rule 2080] Federally Enforceable Through Title V Permit
2. Permittee shall submit written notification to the District upon designating the unit as dormant or active. [District Rule 2080] Federally Enforceable Through Title V Permit
3. While dormant, normal source testing shall not be required. [District Rule 2080] Federally Enforceable Through Title V Permit
4. Upon recommencing operation of this unit, normal source testing shall resume. [District Rule 2080] Federally Enforceable Through Title V Permit
5. Any source testing required by this permit shall be performed within 60 days of recommencing operation of this unit, regardless of whether the unit remains active or is again designated as dormant. [District Rule 2080] Federally Enforceable Through Title V Permit
6. Records of all dates and times that this unit is designated as dormant or active, and copies of all corresponding notices to the District, shall be maintained, retained for a period of at least five years, and made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit
7. Cogeneration unit shall include Allison Model 501-KB-5 48.7 MMBTU/hr gas-fired engine, synchronous electrical generator, unfired 22.5 MMBTU/hr steam generator, and inlet air evaporative cooler. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Turbine lube oil tank and generator gearbox lube oil tank shall vent only through fiber bed filter system or other District-approved control Device. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Gas turbine engine shall be equipped with continuously recording fuel gas flowrate monitor. [40 CFR 60.334(a)] Federally Enforceable Through Title V Permit
10. Permittee shall install, operate and maintain in calibration a system which continuously measures and records elapsed time of turbine operation. [40 CFR 60.334(a) and District Rule 4703, 6.2.1] Federally Enforceable Through Title V Permit
11. Gas turbine engine shall be equipped with water injection system for NOx control. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Gas turbine engine water injection rate shall be maintained at a water-to-fuel ratio documented to result in compliance with emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Gas turbine engine shall be equipped with continuously recording water to fuel injection rate monitoring system accurate to within +/- 5%. [District Rule 2201& 40 CFR 60.334(a)] Federally Enforceable Through Title V Permit

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14. If ammonia injection system is inoperative for more than 1 hour, gas turbine shall be shut down. [District Rule 4102]
15. Evaporative cooler shall use only fresh and filtered water. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Maximum emission rate of volatile organic compounds (VOC's) from turbine lube oil vent shall not exceed 0.02 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Compliance testing of lube oil vent and gearbox vent shall be required if visible emissions from either vent exceeds 5% opacity or equivalent Ringelmann 1/4. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Waste heat recovery steam generator exhaust shall be equipped with permanent provisions to allow collection of gas samples consistent with EPA methods. [District Rule 1081] Federally Enforceable Through Title V Permit
19. The ammonia (NH3) emissions from the exhaust of the SCR system serving this gas turbine shall not exceed 30 ppmvd. [District Rule 2201] Federally Enforceable Through Title V Permit
20. Permittee shall maintain accurate records of ammonia consumption. [District Rule 1070 and 4703] Federally Enforceable Through Title V Permit
21. Gas temperature at SCR catalyst section inlet shall be continuously monitored by operational temperature indicator. Inlet gas temperature to catalyst bed shall be maintained within range recommended by catalyst manufacturer and determined by performance tests. [40 CFR 60.334(a) and District Rule 4703, 6.2.1] Federally Enforceable Through Title V Permit
22. Permittee shall install, operate and maintain in calibration a system which continuously measures and records ammonia injection flow rate and pressure. Ammonia injection flow rate and pressure shall be operated within the range recommended by SCR manufacturer and determined by performance tests such that the turbine maintains 95% or greater control efficiency or complies with the applicable NOx emission concentration limit. [40 CFR 60.334(a) and District Rule 4703, 6.2.1] Federally Enforceable Through Title V Permit
23. Except during startup, shutdown, and reduced load periods, any one-hour period during which the average ammonia injection flowrate, as measured by the continuous monitoring system, falls outside the flowrate range as determined to demonstrate compliance shall be reported to the APCO. Each report shall include the average ammonia injection flowrate, average fuel consumption, ambient conditions, turbine gas load and nitrogen content of the fuel during the period of excess emissions. [40 CFR 60.334(c)] Federally Enforceable Through Title V Permit
24. Fuel gas sulfur content shall not exceed 19.5 ppmv as hydrogen sulfide (H2S) or 1.1 gr/100 scf as total fuel sulfur. [District Rule 2201] Federally Enforceable Through Title V Permit
25. 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 1.1 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 1.1 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
26. Except during periods of startup and shutdown emissions rates (three hour rolling average) shall not exceed any of the following: NOx (as NO2): 5 ppmv dry @ 15% O2, CO: 41 ppmv dry @ 15% O2. [District Rule 4703, 5.1.2, 5.2] Federally Enforceable Through Title V Permit
27. Startup and shutdown of the gas turbine, as defined in this permit and in 40 CFR Subpart A 60.2, shall not exceed a time period of two hours for startup and two hours for shutdown, per occurrence. Emission concentrations subsequent to this startup period shall not exceed the limits specified in this permit except during shutdown. [40 CFR Subpart A 60.2 and District Rule 4703] Federally Enforceable Through Title V Permit
28. The duration of reduced load shall not exceed a time period of one hour per occurrence. [District Rule 4703, 6.2.4] Federally Enforceable Through Title V Permit
29. Emissions shall not exceed any of the following limits: NOx (as NO2); 150.7 lb/day, CO: 107.5 lb/day, PM10: 14.6 lb/day; SOx (as SO2): 3.8 lb/day or VOC: 39.6 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

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30. Daily records of NOx and CO emission calculations during days of startup/shutdown 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

31. Maximum NOx (as NO2) and SOx (as SO2) emission rates (1 hr average) shall not exceed NSPS standard of 150 ppmv-dry @ 15% O2, and 150 ppmv-dry @ 15% O2, respectively. [40 CFR 60.332(a)(2) & 60.333(a)] Federally Enforceable Through Title V Permit

32. Source testing to measure exhaust gas NOx, CO, and NH3 concentrations and, if applicable, Selective Catalytic Reduction (SCR) control efficiency shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). Performance testing shall be conducted under conditions representative of normal operation. [40 CFR 60.335(b), District Rule 4703, 6.3 & District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

33. 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 D1072, D4468 or ASTM D3246 or double GC for H2S and mercaptans, fuel gas hhv - ASTM D3598, D1826 or D1945 in conjunction with ASTM D3588, Ammonia slip - BAAQMD method ST-1B. [40 CFR 60.335(b) and District Rules 1081 & 4703] Federally Enforceable Through Title V Permit

34. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Last Amended December 16, 1993). [District Rule 1081, and County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera)] Federally Enforceable Through Title V Permit

35. 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

36. 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

37. The permittee shall monitor and record the stack concentration of NOx, CO, NH3, and O2 at least once every month in which a source test is not performed. NOx, CO and O2 monitoring shall be conducted utilizing a portable analyzer that meets District specifications. NH3 monitoring shall be conducted utilizing Draeger tubes or a District approved equivalent method. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the previous calendar month. [District Rule 4703] Federally Enforceable Through Title V Permit

38. If the NOx or CO concentrations corrected to 15% O2 as measured by the portable analyzer or the NH3 concentration, as measured by Draeger tubes or a District approved equivalent method, exceed the permitted levels the permittee shall return the emissions to compliant levels as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer or the ammonia monitoring equipment continue to show emission limit violations after 1 hour of operation following detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation that is subject to enforcement action has occurred. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4703] Federally Enforceable Through Title V Permit

39. Failure of catalyst to perform as required because of catalyst poisoning or fouling shall not be recognized as a basis for a Rule 1100 enforcement exemption. [District Rule 1070 and 4703] Federally Enforceable Through Title V Permit

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40. All NOx, CO, O2 and ammonia emission readings shall be taken with the unit operating at conditions representative of normal operation or under the conditions specified in the Permit to Operate. The NOx, CO and O2 analyzer as well as the NH3 emission monitoring equipment shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Analyzer readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4703] Federally Enforceable Through Title V Permit

41. Ammonia emission readings shall be conducted at the time the NOx, CO and O2 readings are taken. [District Rule 4703] Federally Enforceable Through Title V Permit

42. The permittee shall maintain records of: (1) the date and time of NOx, CO, NH3 and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOx, CO and NH3 concentrations corrected to 3% O2, (3) make and model of the portable analyzer, (4) portable analyzer calibration records, (5) the method of determining the NH3 emission concentration, and (6) a description of any corrective action taken to maintain the emissions at or below the acceptable levels. [District Rule 4703] Federally Enforceable Through Title V Permit

43. Permittee shall report the following emission exceedance to the District: emission rates of NOx & CO on a three-hour rolling average and NSPS emission rate on one hour average. [District Rule 1070, 2201 and 4703] Federally Enforceable Through Title V Permit

44. 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 reduced load periods, total hours of operation and quantity of fuel used. During days of gas turbine startup/shutdown, permittee shall maintain accurate daily records of natural gas consumption for normal operation and for the startup/shutdown periods. This information may be recorded electronically. Daily entries in the operating log are not required for periods of non-operation. [District Rules 2520, 9.4.2 & 4703, 6.2.4] Federally Enforceable Through Title V Permit

45. Permittee shall maintain accurate records of all maintenance activities, periodic inspections, and repairs of SCR unit, water and NH3 injection systems, and their associated controller and instrumentation units. [District Rules 1070 and 4703] Federally Enforceable Through Title V Permit

46. Permittee shall comply in full with Rule 4001 (New Source Performance Standards, 40 CFR 60 Subpart GG) requirements, including notification, recordkeeping and monitoring requirements. [District Rule 4001] Federally Enforceable Through Title V Permit

47. The owner or operator shall maintain all records for a period of five years from the date of entry and shall make such records available to the APCO upon request. [District Rules 1080, 2201, & 4703, 6.2.4] Federally Enforceable Through Title V Permit

48. Note: Formerly S-1129-52.