



**JUN 27 2012**

Gerardo C. Rios, Chief  
Permits Office  
Air Division  
U.S. EPA - Region IX  
75 Hawthorne St  
San Francisco, CA 94105

**Re: Final – Authority to Construct/Certificate of Conformity (Minor Mod)  
Project # 1120161**

Dear Mr. Rios:

The Air Pollution Control Officer has issued Authorities to Construct (S-1547-1173-1 through '1180-1) with Certificates of Conformity to Aera Energy, LLC. Aera requested that ATCs S-1547-1173-0 through '1180-0 for new steam generators be revised to authorize higher emissions during the commissioning period and during refractory curing, in addition to normal startup and shutdown. These units will be located at various specified locations in the Belridge Oilfield within Aera's Heavy Oil Western stationary source in Kern County.

Enclosed are copies of the Authorities to Construct and engineering evaluation with attachments. The application and proposal were sent to US EPA Region IX on March 15, 2012. All comments received have been addressed via a revised engineering evaluation.

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,

  
David Warner  
Director of Permit Services

Enclosures  
dbt

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

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**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



**JUN 27 2012**

Mr. Brent Winn  
Aera Energy, LLC  
PO Box 11164  
Bakersfield, CA 93389-1164

**Re: Final – Authority to Construct/Certificate of Conformity (Minor Mod)  
Project # 1120161**

Dear Mr. Winn:

The Air Pollution Control Officer has issued Authorities to Construct (S-1547-1173-1 through '1180-1) with Certificates of Conformity to Aera Energy, LLC. Aera requested that ATCs S-1547-1173-0 through '1180-0 for new steam generators be revised to authorize higher emissions during the commissioning period and during refractory curing, in addition to normal startup and shutdown. These units will be located at various specified locations in the Belridge Oilfield within Aera's Heavy Oil Western stationary source in Kern County.

Enclosed are copies of the Authorities to Construct and engineering evaluation with attachments. The application and proposal were sent to US EPA Region IX on March 15, 2012. All comments received have been addressed via a revised engineering evaluation.

Prior to operating with 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.

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,



David Warner

Director of Permit Services

Enclosures  
dbt

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

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Bakersfield, CA 93308-9725  
Tel: 661-392-5500 FAX: 661-392-5585



# AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-1547-1173-1

**ISSUANCE DATE:** 06/27/2012

**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

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE OF S-1547-1173-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS AND ADDITIONAL SOX TEST METHODS

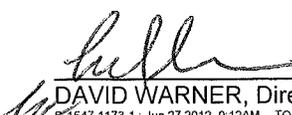
## CONDITIONS

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 initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] 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

  
\_\_\_\_\_  
DAVID WARNER, Director of Permit Services

4. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
5. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NOx burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
6. This unit is approved for operation at the following locations: SW/4 of Section 20, NE/4 & SE/4 of Section 29, and NW/4, SW/4 & SE/4 of Section 28, T28S, R21E. [District Rule 4102]
7. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
8. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [CEQA]
9. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [CEQA]
10. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO<sub>2</sub>, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
11. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
12. The total PM<sub>10</sub> emissions from Units S-1547-1162-0 through '1180-0 shall not exceed 124 lb/day at location #2038 in the SW/4 of Section 20, T28S, R21E. [District Rule 4102]
13. The total PM<sub>10</sub> emissions from Units S-1547-1162 through '1180-0 shall not exceed 168 lb/day at location #2972 in the SE/4 of Section 29, T28S, R21E. [District Rule 4102]
14. Permittee shall maintain records of daily PM<sub>10</sub> emissions from Units S-1547-1162-0 through S-1547-1180-0 at locations #2038 and #2972. [District Rule 4102]
15. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
16. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO<sub>x</sub>: 7 ppmvd @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu; PM<sub>10</sub>: 0.0076 lb-PM<sub>10</sub>/MMBtu; CO: 25 ppmvd @ 3% O<sub>2</sub> or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
17. Any of units S-1547-1162 through '1180 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO<sub>x</sub>: 49,990 lb/yr; SO<sub>x</sub>: 17,210 lb/yr; PM<sub>10</sub>: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 730,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NO<sub>x</sub> and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO<sub>x</sub> (ppmv) - EPA Method 7E or ARB Method 100, NO<sub>x</sub> (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, stack gas oxygen (O<sub>2</sub>) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO<sub>x</sub> (lb/MMBtu) - ARB Method 8 or 100 or EPA Method 6, 6B, 6C or 8 or fuel gas sulfur content analysis and EPA Method 19, fuel gas sulfur content - EPA Method 11 or 15, ASTM D1072, D4468, D3246, D4084 or double GC for H<sub>2</sub>S and mercaptans performed in laboratory, fuel gas hlv -ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 1081, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. 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
27. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. 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 last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO<sub>x</sub> or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after 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 has occurred, subject to enforcement action. 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 performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO<sub>x</sub>, CO, and O<sub>2</sub> emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO<sub>x</sub>, CO, and O<sub>2</sub> analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent by volume and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO<sub>x</sub>: 1,460 lb/quarter; SO<sub>x</sub>: 383 lb/quarter; PM<sub>10</sub>: 1,387 lb/quarter and VOC: 548 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-257-2, S-0135-2, S-0133-2, S-1821-2, S-40130321-2, S-784-2, S-796-2, S-2958-2, S-2395-1, S-2010-5, S-1825-5, and S-1337-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

42. Aera will surrender ERCs sufficient to fully offset operational emissions as required by District NSR requirements. [Public Resources Code 21000-21177: California Environmental Quality Act]
43. A qualified biologist will conduct a pre-construction survey for sensitive species within 30 days of the onset of ground disturbance. If sensitive species or their nests/dens are detected, the appropriate standardized avoidance measures will be implemented to preclude take of the species. If standardized avoidance measures cannot be achieved, Aera will consult with the CDFG and USFWS to develop alternative compliance measures. [Public Resources Code 21000-21177: California Environmental Quality Act]
44. Impacts to endangered species habitat as identified in pre-construction surveys will be mitigated at the Coles Levee Ecological Preserve at a ratio of 1.1:1. [Public Resources Code 21000-21177: California Environmental Quality Act]
45. Prior to construction, Aera will conduct a sensitive species education program (tailgate briefing) for all Project personnel. Topics to be discussed during the briefing shall include: occurrence and distribution of sensitive species in the project area, take avoidance measures being implemented during the Project, reporting requirements if incidental take occurs, and applicable definitions and prohibitions under the Endangered Species Act. [Public Resources Code 21000-21177: California Environmental Quality Act]
46. During construction, a biological monitor will be present while ground-disturbing activities are occurring based on the sensitivity of the habitat in which a project occurs. [Public Resources Code 21000-21177: California Environmental Quality Act]
47. During construction, pets are prohibited on the construction site. [Public Resources Code 21000-21177: California Environmental Quality Act]
48. During construction, firearms are prohibited on the construction site. [Public Resources Code 21000-21177: California Environmental Quality Act]
49. During construction, all food-related trash, such as wrappers, cans, bottles, bags, and food scraps will be disposed of daily in containers with secure covers and regularly removed from project sites. [Public Resources Code 21000-21177: California Environmental Quality Act]
50. During construction, USFWS and CDFG will be notified immediately in the event that the Project avoidance measures fail and there is a take of a threatened or endangered species. [Public Resources Code 21000-21177: California Environmental Quality Act]
51. In the event that archaeological resources are discovered during ground-disturbing activities associated with construction of the proposed Project, all work within 100 feet of the find shall cease. Aera will notify and retain a qualified archaeologist to assess and provide an evaluation of the significance of the find. Aera shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Kern County and other appropriate agencies and individuals. Work may resume on the Project site once the evaluation of the find is complete by the qualified archaeologist. [Public Resources Code 21000-21177: California Environmental Quality Act]
52. In the event that paleontological resources are discovered during ground-disturbing activities associated with construction of the proposed Project, all work within 100 feet of the find shall cease. Aera will notify and retain a qualified paleontologist to assess and provide an evaluation of the significance of the find. Aera shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Kern County and other appropriate agencies and individuals. Work may resume on the Project site once the evaluation of the find is complete by the qualified paleontologist. [Public Resources Code 21000-21177: California Environmental Quality Act]
53. In the event that human remains are discovered during construction of the Project, all work within 100 feet shall be ceased and the discovery will immediately be reported to the County Coroner. If the remains are determined to be Native American in origin, the County Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours of the determination. The NAHC will solicit those persons it believe to be the nearest descendants of the remains for recommendations. Aera shall, in consultation with the identified descendants of the remains and/or NAHC, will identify the appropriate measures for the treatment or disposition of the remains. [Public Resources Code 21000-21177: California Environmental Quality Act]

CONDITIONS CONTINUE ON NEXT PAGE

54. Prior to the start of construction activities, Aera shall provide the District with documentation demonstrating that maps identifying all wells in the vicinity of the sites have been submitted to DOGGR for compliance with DOGGR's "Well Review Program". [Public Resources Code 21000-21177: California Environmental Quality Act]
55. During construction activities, if unknown, unrecorded or abandoned wells are discovered, or if any wells are damaged, Aera shall immediately notify the DOGGR. [Public Resources Code 21000-21177: California Environmental Quality Act]
56. Any wells discovered or exposed during construction activities will be tested for flammable vapors. [Public Resources Code 21000-21177: California Environmental Quality Act]
57. This ATC shall be implemented prior to or concurrently with ATC S-1547-1173-0. [District Rule 2080]



# AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-1547-1174-1

**ISSUANCE DATE:** 06/27/2012

**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

**EQUIPMENT DESCRIPTION:**  
MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE OF S-1547-1174-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY PERIODS AND AUTHORIZE ADDITIONAL SOX TEST METHODS

## 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
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3. The initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] 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

  
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DAVID WARNER, Director of Permit Services  
S-1547-1174-1 : Jun 27 2012 9:12AM - TORID : Joint Inspection NOT Required

4. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
5. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NOx burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
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7. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
8. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [CEQA]
9. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [CEQA]
10. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO<sub>2</sub>, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
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12. The total PM<sub>10</sub> emissions from Units S-1547-1162-0 through '1180-0 shall not exceed 124 lb/day at location #2038 in the SW/4 of Section 20, T28S, R21E. [District Rule 4102]
13. The total PM<sub>10</sub> emissions from Units S-1547-1162 through '1180-0 shall not exceed 168 lb/day at location #2972 in the SE/4 of Section 29, T28S, R21E. [District Rule 4102]
14. Permittee shall maintain records of daily PM<sub>10</sub> emissions from Units S-1547-1162-0 through S-1547-1180-0 at locations #2038 and #2972. [District Rule 4102]
15. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
16. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO<sub>x</sub>: 7 ppmvd @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu; PM<sub>10</sub>: 0.0076 lb-PM<sub>10</sub>/MMBtu; CO: 25 ppmvd @ 3% O<sub>2</sub> or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
17. Any of units S-1547-1162 through '1180 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO<sub>x</sub>: 49,990 lb/yr; SO<sub>x</sub>: 17,210 lb/yr; PM<sub>10</sub>: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 730,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NO<sub>x</sub> and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO<sub>x</sub> (ppmv) - EPA Method 7E or ARB Method 100, NO<sub>x</sub> (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, stack gas oxygen (O<sub>2</sub>) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO<sub>x</sub> (lb/MMBtu) - ARB Method 8 or 100 or EPA Method 6, 6B, 6C or 8 or fuel gas sulfur content analysis and EPA Method 19, fuel gas sulfur content - EPA Method 11 or 15, ASTM D1072, D4468, D3246, D4084 or double GC for H<sub>2</sub>S and mercaptans performed in laboratory, fuel gas hhv -ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 1081, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. 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
27. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. 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 last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO<sub>x</sub> or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after 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 has occurred, subject to enforcement action. 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 performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO<sub>x</sub>, CO, and O<sub>2</sub> emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO<sub>x</sub>, CO, and O<sub>2</sub> analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent by volume and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO<sub>x</sub>: 1,460 lb/quarter; SO<sub>x</sub>: 383 lb/quarter; PM<sub>10</sub>: 1,387 lb/quarter and VOC: 548 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-257-2, S-0135-2, S-0133-2, S-1821-2, S-40130321-2, S-784-2, S-796-2, S-2958-2, S-2395-1, S-2010-5, S-1825-5, and S-1337-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

42. Aera will surrender ERCs sufficient to fully offset operational emissions as required by District NSR requirements. [Public Resources Code 21000-21177: California Environmental Quality Act]
43. A qualified biologist will conduct a pre-construction survey for sensitive species within 30 days of the onset of ground disturbance. If sensitive species or their nests/dens are detected, the appropriate standardized avoidance measures will be implemented to preclude take of the species. If standardized avoidance measures cannot be achieved, Aera will consult with the CDFG and USFWS to develop alternative compliance measures. [Public Resources Code 21000-21177: California Environmental Quality Act]
44. Impacts to endangered species habitat as identified in pre-construction surveys will be mitigated at the Coles Levee Ecological Preserve at a ratio of 1.1:1. [Public Resources Code 21000-21177: California Environmental Quality Act]
45. Prior to construction, Aera will conduct a sensitive species education program (tailgate briefing) for all Project personnel. Topics to be discussed during the briefing shall include: occurrence and distribution of sensitive species in the project area, take avoidance measures being implemented during the Project, reporting requirements if incidental take occurs, and applicable definitions and prohibitions under the Endangered Species Act. [Public Resources Code 21000-21177: California Environmental Quality Act]
46. During construction, a biological monitor will be present while ground-disturbing activities are occurring based on the sensitivity of the habitat in which a project occurs. [Public Resources Code 21000-21177: California Environmental Quality Act]
47. During construction, pets are prohibited on the construction site. [Public Resources Code 21000-21177: California Environmental Quality Act]
48. During construction, firearms are prohibited on the construction site. [Public Resources Code 21000-21177: California Environmental Quality Act]
49. During construction, all food-related trash, such as wrappers, cans, bottles, bags, and food scraps will be disposed of daily in containers with secure covers and regularly removed from project sites. [Public Resources Code 21000-21177: California Environmental Quality Act]
50. During construction, USFWS and CDFG will be notified immediately in the event that the Project avoidance measures fail and there is a take of a threatened or endangered species. [Public Resources Code 21000-21177: California Environmental Quality Act]
51. In the event that archaeological resources are discovered during ground-disturbing activities associated with construction of the proposed Project, all work within 100 feet of the find shall cease. Aera will notify and retain a qualified archaeologist to assess and provide an evaluation of the significance of the find. Aera shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Kern County and other appropriate agencies and individuals. Work may resume on the Project site once the evaluation of the find is complete by the qualified archaeologist. [Public Resources Code 21000-21177: California Environmental Quality Act]
52. In the event that paleontological resources are discovered during ground-disturbing activities associated with construction of the proposed Project, all work within 100 feet of the find shall cease. Aera will notify and retain a qualified paleontologist to assess and provide an evaluation of the significance of the find. Aera shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Kern County and other appropriate agencies and individuals. Work may resume on the Project site once the evaluation of the find is complete by the qualified paleontologist. [Public Resources Code 21000-21177: California Environmental Quality Act]
53. In the event that human remains are discovered during construction of the Project, all work within 100 feet shall be ceased and the discovery will immediately be reported to the County Coroner. If the remains are determined to be Native American in origin, the County Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours of the determination. The NAHC will solicit those persons it believe to be the nearest descendants of the remains for recommendations. Aera shall, in consultation with the identified descendants of the remains and/or NAHC, will identify the appropriate measures for the treatment or disposition of the remains. [Public Resources Code 21000-21177: California Environmental Quality Act]

CONDITIONS CONTINUE ON NEXT PAGE

54. Prior to the start of construction activities, Aera shall provide the District with documentation demonstrating that maps identifying all wells in the vicinity of the sites have been submitted to DOGGR for compliance with DOGGR's "Well Review Program". [Public Resources Code 21000-21177: California Environmental Quality Act]
55. During construction activities, if unknown, unrecorded or abandoned wells are discovered, or if any wells are damaged, Aera shall immediately notify the DOGGR. [Public Resources Code 21000-21177: California Environmental Quality Act]
56. Any wells discovered or exposed during construction activities will be tested for flammable vapors. [Public Resources Code 21000-21177: California Environmental Quality Act]
57. This ATC shall be implemented prior to or concurrently with ATC S-1547-1174-0. [District Rule 2080]



# AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-1547-1175-1

**ISSUANCE DATE:** 06/27/2012

**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

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE OF S-1547-1175-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS AND ADDITIONAL SOX TEST METHODS

## 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 initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] 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

DAVID WARNER, Director of Permit Services

S-1547-1175-1 : Jun 27 2012 9:12AM -- TORID : Joint Inspection NOT Required

4. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
5. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NOx burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
6. This unit is approved for operation at the following locations: SW/4 of Section 20, NE/4 & SE/4 of Section 29, and NW/4, SW/4 & SE/4 of Section 28, T28S, R21E. [District Rule 4102]
7. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
8. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [CEQA]
9. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [CEQA]
10. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO<sub>2</sub>, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
11. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
12. The total PM<sub>10</sub> emissions from Units S-1547-1162-0 through '-1180-0 shall not exceed 124 lb/day at location #2038 in the SW/4 of Section 20, T28S, R21E. [District Rule 4102]
13. The total PM<sub>10</sub> emissions from Units S-1547-1162 through '-1180-0 shall not exceed 168 lb/day at location #2972 in the SE/4 of Section 29, T28S, R21E. [District Rule 4102]
14. Permittee shall maintain records of daily PM<sub>10</sub> emissions from Units S-1547-1162-0 through S-1547-1180-0 at locations #2038 and #2972. [District Rule 4102]
15. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
16. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO<sub>x</sub>: 7 ppmvd @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu; PM<sub>10</sub>: 0.0076 lb-PM<sub>10</sub>/MMBtu; CO: 25 ppmvd @ 3% O<sub>2</sub> or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
17. Any of units S-1547-1162 through '-1180 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO<sub>x</sub>: 49,990 lb/yr; SO<sub>x</sub>: 17,210 lb/yr; PM<sub>10</sub>: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 730,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NO<sub>x</sub> and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO<sub>x</sub> (ppmv) - EPA Method 7E or ARB Method 100, NO<sub>x</sub> (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, stack gas oxygen (O<sub>2</sub>) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO<sub>x</sub> (lb/MMBtu) - ARB Method 8 or 100 or EPA Method 6, 6B, 6C or 8 or fuel gas sulfur content analysis and EPA Method 19, fuel gas sulfur content - EPA Method 11 or 15, ASTM D1072, D4468, D3246, D4084 or double GC for H<sub>2</sub>S and mercaptans performed in laboratory, fuel gas hhv -ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 1081, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. 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
27. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. 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 last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO<sub>x</sub> or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after 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 has occurred, subject to enforcement action. 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 performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO<sub>x</sub>, CO, and O<sub>2</sub> emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO<sub>x</sub>, CO, and O<sub>2</sub> analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent by volume and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO<sub>x</sub>: 1,460 lb/quarter; SO<sub>x</sub>: 383 lb/quarter; PM<sub>10</sub>: 1,387 lb/quarter and VOC: 548 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-257-2, S-0135-2, S-0133-2, S-1821-2, S-40130321-2, S-784-2, S-796-2, S-2958-2, S-2395-1, S-2010-5, S-1825-5, and S-1337-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

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42. Aera will surrender ERCs sufficient to fully offset operational emissions as required by District NSR requirements. [Public Resources Code 21000-21177: California Environmental Quality Act]
43. A qualified biologist will conduct a pre-construction survey for sensitive species within 30 days of the onset of ground disturbance. If sensitive species or their nests/dens are detected, the appropriate standardized avoidance measures will be implemented to preclude take of the species. If standardized avoidance measures cannot be achieved, Aera will consult with the CDFG and USFWS to develop alternative compliance measures. [Public Resources Code 21000-21177: California Environmental Quality Act]
44. Impacts to endangered species habitat as identified in pre-construction surveys will be mitigated at the Coles Levee Ecological Preserve at a ratio of 1.1:1. [Public Resources Code 21000-21177: California Environmental Quality Act]
45. Prior to construction, Aera will conduct a sensitive species education program (tailgate briefing) for all Project personnel. Topics to be discussed during the briefing shall include: occurrence and distribution of sensitive species in the project area, take avoidance measures being implemented during the Project, reporting requirements if incidental take occurs, and applicable definitions and prohibitions under the Endangered Species Act. [Public Resources Code 21000-21177: California Environmental Quality Act]
46. During construction, a biological monitor will be present while ground-disturbing activities are occurring based on the sensitivity of the habitat in which a project occurs. [Public Resources Code 21000-21177: California Environmental Quality Act]
47. During construction, pets are prohibited on the construction site. [Public Resources Code 21000-21177: California Environmental Quality Act]
48. During construction, firearms are prohibited on the construction site. [Public Resources Code 21000-21177: California Environmental Quality Act]
49. During construction, all food-related trash, such as wrappers, cans, bottles, bags, and food scraps will be disposed of daily in containers with secure covers and regularly removed from project sites. [Public Resources Code 21000-21177: California Environmental Quality Act]
50. During construction, USFWS and CDFG will be notified immediately in the event that the Project avoidance measures fail and there is a take of a threatened or endangered species. [Public Resources Code 21000-21177: California Environmental Quality Act]
51. In the event that archaeological resources are discovered during ground-disturbing activities associated with construction of the proposed Project, all work within 100 feet of the find shall cease. Aera will notify and retain a qualified archaeologist to assess and provide an evaluation of the significance of the find. Aera shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Kern County and other appropriate agencies and individuals. Work may resume on the Project site once the evaluation of the find is complete by the qualified archaeologist. [Public Resources Code 21000-21177: California Environmental Quality Act]
52. In the event that paleontological resources are discovered during ground-disturbing activities associated with construction of the proposed Project, all work within 100 feet of the find shall cease. Aera will notify and retain a qualified paleontologist to assess and provide an evaluation of the significance of the find. Aera shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Kern County and other appropriate agencies and individuals. Work may resume on the Project site once the evaluation of the find is complete by the qualified paleontologist. [Public Resources Code 21000-21177: California Environmental Quality Act]
53. In the event that human remains are discovered during construction of the Project, all work within 100 feet shall be ceased and the discovery will immediately be reported to the County Coroner. If the remains are determined to be Native American in origin, the County Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours of the determination. The NAHC will solicit those persons it believe to be the nearest descendants of the remains for recommendations. Aera shall, in consultation with the identified descendants of the remains and/or NAHC, will identify the appropriate measures for the treatment or disposition of the remains. [Public Resources Code 21000-21177: California Environmental Quality Act]

CONDITIONS CONTINUE ON NEXT PAGE

54. Prior to the start of construction activities, Aera shall provide the District with documentation demonstrating that maps identifying all wells in the vicinity of the sites have been submitted to DOGGR for compliance with DOGGR's "Well Review Program". [Public Resources Code 21000-21177: California Environmental Quality Act]
55. During construction activities, if unknown, unrecorded or abandoned wells are discovered, or if any wells are damaged, Aera shall immediately notify the DOGGR. [Public Resources Code 21000-21177: California Environmental Quality Act]
56. Any wells discovered or exposed during construction activities will be tested for flammable vapors. [Public Resources Code 21000-21177: California Environmental Quality Act]
57. This ATC shall be implemented prior to or concurrently with ATC S-1547-1175-0. [District Rule 2080]



## AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-1547-1176-1

**ISSUANCE DATE:** 06/27/2012

**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

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE OF S-1547-1176-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS AND ADDITIONAL SOX TEST METHODS

### 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 initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] 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



DAVID WARNER, Director of Permit Services  
S-1547-1176-1 : Jun 27 2012 9:12AM - TORID : Joint Inspection NOT Required

4. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
5. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NOx burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
6. This unit is approved for operation at the following locations: SW/4 of Section 20, NE/4 & SE/4 of Section 29, and NW/4, SW/4 & SE/4 of Section 28, T28S, R21E. [District Rule 4102]
7. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
8. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [CEQA]
9. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [CEQA]
10. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO<sub>2</sub>, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
11. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
12. The total PM<sub>10</sub> emissions from Units S-1547-1162-0 through -1180-0 shall not exceed 124 lb/day at location #2038 in the SW/4 of Section 20, T28S, R21E. [District Rule 4102]
13. The total PM<sub>10</sub> emissions from Units S-1547-1162 through -1180-0 shall not exceed 168 lb/day at location #2972 in the SE/4 of Section 29, T28S, R21E. [District Rule 4102]
14. Permittee shall maintain records of daily PM<sub>10</sub> emissions from Units S-1547-1162-0 through S-1547-1180-0 at locations #2038 and #2972. [District Rule 4102]
15. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
16. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO<sub>x</sub>: 7 ppmvd @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu; PM<sub>10</sub>: 0.0076 lb-PM<sub>10</sub>/MMBtu; CO: 25 ppmvd @ 3% O<sub>2</sub> or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
17. Any of units S-1547-1162 through -1180 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO<sub>x</sub>: 49,990 lb/yr; SO<sub>x</sub>: 17,210 lb/yr; PM<sub>10</sub>: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 730,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NO<sub>x</sub> and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO<sub>x</sub> (ppmv) - EPA Method 7E or ARB Method 100, NO<sub>x</sub> (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, stack gas oxygen (O<sub>2</sub>) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO<sub>x</sub> (lb/MMBtu) - ARB Method 8 or 100 or EPA Method 6, 6B, 6C or 8 or fuel gas sulfur content analysis and EPA Method 19, fuel gas sulfur content - EPA Method 11 or 15, ASTM D1072, D4468, D3246, D4084 or double GC for H<sub>2</sub>S and mercaptans performed in laboratory, fuel gas h<sub>h</sub>v -ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 1081, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. 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
27. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. 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 last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO<sub>x</sub> or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after 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 has occurred, subject to enforcement action. 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 performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO<sub>x</sub>, CO, and O<sub>2</sub> emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO<sub>x</sub>, CO, and O<sub>2</sub> analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent by volume and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
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CONDITIONS CONTINUE ON NEXT PAGE

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55. During construction activities, if unknown, unrecorded or abandoned wells are discovered, or if any wells are damaged, Aera shall immediately notify the DOGGR. [Public Resources Code 21000-21177: California Environmental Quality Act]
56. Any wells discovered or exposed during construction activities will be tested for flammable vapors. [Public Resources Code 21000-21177: California Environmental Quality Act]
57. This ATC shall be implemented prior to or concurrently with ATC S-1547-1176-0. [District Rule 2080]



# AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-1547-1177-1

**ISSUANCE DATE:** 06/27/2012

**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

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE OF S-1547-1177-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS AND ADDITIONAL SOX TEST METHODS

## 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
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CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services

S-1547-1177-1 : Jun 27 2012 9:12AM -- TORID : Joint Inspection NOT Required

4. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
5. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NOx burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
6. This unit is approved for operation at the following locations: SW/4 of Section 20, NE/4 & SE/4 of Section 29, and NW/4, SW/4 & SE/4 of Section 28, T28S, R21E. [District Rule 4102]
7. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
8. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [CEQA]
9. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [CEQA]
10. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO<sub>2</sub>, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
11. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
12. The total PM<sub>10</sub> emissions from Units S-1547-1162-0 through '-1180-0 shall not exceed 124 lb/day at location #2038 in the SW/4 of Section 20, T28S, R21E. [District Rule 4102]
13. The total PM<sub>10</sub> emissions from Units S-1547-1162 through '-1180-0 shall not exceed 168 lb/day at location #2972 in the SE/4 of Section 29, T28S, R21E. [District Rule 4102]
14. Permittee shall maintain records of daily PM<sub>10</sub> emissions from Units S-1547-1162-0 through S-1547-1180-0 at locations #2038 and #2972. [District Rule 4102]
15. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
16. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO<sub>x</sub>: 7 ppmvd @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu; PM<sub>10</sub>: 0.0076 lb-PM<sub>10</sub>/MMBtu; CO: 25 ppmvd @ 3% O<sub>2</sub> or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
17. Any of units S-1547-1162 through '-1180 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO<sub>x</sub>: 49,990 lb/yr; SO<sub>x</sub>: 17,210 lb/yr; PM<sub>10</sub>: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 730,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NO<sub>x</sub> and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO<sub>x</sub> (ppmv) - EPA Method 7E or ARB Method 100, NO<sub>x</sub> (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, stack gas oxygen (O<sub>2</sub>) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO<sub>x</sub> (lb/MMBtu) - ARB Method 8 or 100 or EPA Method 6, 6B, 6C or 8 or fuel gas sulfur content analysis and EPA Method 19, fuel gas sulfur content - EPA Method 11 or 15, ASTM D1072, D4468, D3246, D4084 or double GC for H<sub>2</sub>S and mercaptans performed in laboratory, fuel gas h<sub>h</sub>v -ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 1081, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. 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
27. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. 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 last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO<sub>x</sub> or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after 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 has occurred, subject to enforcement action. 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 performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO<sub>x</sub>, CO, and O<sub>2</sub> emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO<sub>x</sub>, CO, and O<sub>2</sub> analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent by volume and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO<sub>x</sub>: 1,460 lb/quarter; SO<sub>x</sub>: 383 lb/quarter; PM<sub>10</sub>: 1,387 lb/quarter and VOC: 548 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-257-2, S-0135-2, S-0133-2, S-1821-2, S-40130321-2, S-784-2, S-796-2, S-2958-2, S-2395-1, S-2010-5, S-1825-5, and S-1337-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

42. Aera will surrender ERCs sufficient to fully offset operational emissions as required by District NSR requirements. [Public Resources Code 21000-21177: California Environmental Quality Act]
43. A qualified biologist will conduct a pre-construction survey for sensitive species within 30 days of the onset of ground disturbance. If sensitive species or their nests/dens are detected, the appropriate standardized avoidance measures will be implemented to preclude take of the species. If standardized avoidance measures cannot be achieved, Aera will consult with the CDFG and USFWS to develop alternative compliance measures. [Public Resources Code 21000-21177: California Environmental Quality Act]
44. Impacts to endangered species habitat as identified in pre-construction surveys will be mitigated at the Coles Levee Ecological Preserve at a ratio of 1.1:1. [Public Resources Code 21000-21177: California Environmental Quality Act]
45. Prior to construction, Aera will conduct a sensitive species education program (tailgate briefing) for all Project personnel. Topics to be discussed during the briefing shall include: occurrence and distribution of sensitive species in the project area, take avoidance measures being implemented during the Project, reporting requirements if incidental take occurs, and applicable definitions and prohibitions under the Endangered Species Act. [Public Resources Code 21000-21177: California Environmental Quality Act]
46. During construction, a biological monitor will be present while ground-disturbing activities are occurring based on the sensitivity of the habitat in which a project occurs. [Public Resources Code 21000-21177: California Environmental Quality Act]
47. During construction, pets are prohibited on the construction site. [Public Resources Code 21000-21177: California Environmental Quality Act]
48. During construction, firearms are prohibited on the construction site. [Public Resources Code 21000-21177: California Environmental Quality Act]
49. During construction, all food-related trash, such as wrappers, cans, bottles, bags, and food scraps will be disposed of daily in containers with secure covers and regularly removed from project sites. [Public Resources Code 21000-21177: California Environmental Quality Act]
50. During construction, USFWS and CDFG will be notified immediately in the event that the Project avoidance measures fail and there is a take of a threatened or endangered species. [Public Resources Code 21000-21177: California Environmental Quality Act]
51. In the event that archaeological resources are discovered during ground-disturbing activities associated with construction of the proposed Project, all work within 100 feet of the find shall cease. Aera will notify and retain a qualified archaeologist to assess and provide an evaluation of the significance of the find. Aera shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Kern County and other appropriate agencies and individuals. Work may resume on the Project site once the evaluation of the find is complete by the qualified archaeologist. [Public Resources Code 21000-21177: California Environmental Quality Act]
52. In the event that paleontological resources are discovered during ground-disturbing activities associated with construction of the proposed Project, all work within 100 feet of the find shall cease. Aera will notify and retain a qualified paleontologist to assess and provide an evaluation of the significance of the find. Aera shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Kern County and other appropriate agencies and individuals. Work may resume on the Project site once the evaluation of the find is complete by the qualified paleontologist. [Public Resources Code 21000-21177: California Environmental Quality Act]
53. In the event that human remains are discovered during construction of the Project, all work within 100 feet shall be ceased and the discovery will immediately be reported to the County Coroner. If the remains are determined to be Native American in origin, the County Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours of the determination. The NAHC will solicit those persons it believe to be the nearest descendants of the remains for recommendations. Aera shall, in consultation with the identified descendants of the remains and/or NAHC, will identify the appropriate measures for the treatment or disposition of the remains. [Public Resources Code 21000-21177: California Environmental Quality Act]

CONDITIONS CONTINUE ON NEXT PAGE

54. Prior to the start of construction activities, Aera shall provide the District with documentation demonstrating that maps identifying all wells in the vicinity of the sites have been submitted to DOGGR for compliance with DOGGR's "Well Review Program". [Public Resources Code 21000-21177: California Environmental Quality Act]
55. During construction activities, if unknown, unrecorded or abandoned wells are discovered, or if any wells are damaged, Aera shall immediately notify the DOGGR. [Public Resources Code 21000-21177: California Environmental Quality Act]
56. Any wells discovered or exposed during construction activities will be tested for flammable vapors. [Public Resources Code 21000-21177: California Environmental Quality Act]
57. This ATC shall be implemented prior to or concurrently with ATC S-1547-1177-0. [District Rule 2080]



# AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-1547-1178-1

**ISSUANCE DATE:** 06/27/2012

**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

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE OF S-1547-1178-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS AND ADDITIONAL SOX TEST METHODS

## 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 initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] 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

DAVID WARNER, Director of Permit Services  
S-1547-1178-1 : Jun 27 2012 9:12AM -- TORID : Joint Inspection NOT Required

4. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
5. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NOx burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
6. This unit is approved for operation at the following locations: SW/4 of Section 20, NE/4 & SE/4 of Section 29, and NW/4, SW/4 & SE/4 of Section 28, T28S, R21E. [District Rule 4102]
7. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
8. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [CEQA]
9. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [CEQA]
10. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO<sub>2</sub>, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
11. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
12. The total PM<sub>10</sub> emissions from Units S-1547-1162-0 through '-1180-0 shall not exceed 124 lb/day at location #2038 in the SW/4 of Section 20, T28S, R21E. [District Rule 4102]
13. The total PM<sub>10</sub> emissions from Units S-1547-1162 through '-1180-0 shall not exceed 168 lb/day at location #2972 in the SE/4 of Section 29, T28S, R21E. [District Rule 4102]
14. Permittee shall maintain records of daily PM<sub>10</sub> emissions from Units S-1547-1162-0 through S-1547-1180-0 at locations #2038 and #2972. [District Rule 4102]
15. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
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17. Any of units S-1547-1162 through '-1180 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO<sub>x</sub>: 49,990 lb/yr; SO<sub>x</sub>: 17,210 lb/yr; PM<sub>10</sub>: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 730,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NO<sub>x</sub> and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
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29. All NO<sub>x</sub>, CO, and O<sub>2</sub> emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO<sub>x</sub>, CO, and O<sub>2</sub> analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent by volume and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO<sub>x</sub>: 1,460 lb/quarter; SO<sub>x</sub>: 383 lb/quarter; PM<sub>10</sub>: 1,387 lb/quarter and VOC: 548 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-257-2, S-0135-2, S-0133-2, S-1821-2, S-40130321-2, S-784-2, S-796-2, S-2958-2, S-2395-1, S-2010-5, S-1825-5, and S-1337-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

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42. Aera will surrender ERCs sufficient to fully offset operational emissions as required by District NSR requirements. [Public Resources Code 21000-21177: California Environmental Quality Act]
43. A qualified biologist will conduct a pre-construction survey for sensitive species within 30 days of the onset of ground disturbance. If sensitive species or their nests/dens are detected, the appropriate standardized avoidance measures will be implemented to preclude take of the species. If standardized avoidance measures cannot be achieved, Aera will consult with the CDFG and USFWS to develop alternative compliance measures. [Public Resources Code 21000-21177: California Environmental Quality Act]
44. Impacts to endangered species habitat as identified in pre-construction surveys will be mitigated at the Coles Levee Ecological Preserve at a ratio of 1.1:1. [Public Resources Code 21000-21177: California Environmental Quality Act]
45. Prior to construction, Aera will conduct a sensitive species education program (tailgate briefing) for all Project personnel. Topics to be discussed during the briefing shall include: occurrence and distribution of sensitive species in the project area, take avoidance measures being implemented during the Project, reporting requirements if incidental take occurs, and applicable definitions and prohibitions under the Endangered Species Act. [Public Resources Code 21000-21177: California Environmental Quality Act]
46. During construction, a biological monitor will be present while ground-disturbing activities are occurring based on the sensitivity of the habitat in which a project occurs. [Public Resources Code 21000-21177: California Environmental Quality Act]
47. During construction, pets are prohibited on the construction site. [Public Resources Code 21000-21177: California Environmental Quality Act]
48. During construction, firearms are prohibited on the construction site. [Public Resources Code 21000-21177: California Environmental Quality Act]
49. During construction, all food-related trash, such as wrappers, cans, bottles, bags, and food scraps will be disposed of daily in containers with secure covers and regularly removed from project sites. [Public Resources Code 21000-21177: California Environmental Quality Act]
50. During construction, USFWS and CDFG will be notified immediately in the event that the Project avoidance measures fail and there is a take of a threatened or endangered species. [Public Resources Code 21000-21177: California Environmental Quality Act]
51. In the event that archaeological resources are discovered during ground-disturbing activities associated with construction of the proposed Project, all work within 100 feet of the find shall cease. Aera will notify and retain a qualified archaeologist to assess and provide an evaluation of the significance of the find. Aera shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Kern County and other appropriate agencies and individuals. Work may resume on the Project site once the evaluation of the find is complete by the qualified archaeologist. [Public Resources Code 21000-21177: California Environmental Quality Act]
52. In the event that paleontological resources are discovered during ground-disturbing activities associated with construction of the proposed Project, all work within 100 feet of the find shall cease. Aera will notify and retain a qualified paleontologist to assess and provide an evaluation of the significance of the find. Aera shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Kern County and other appropriate agencies and individuals. Work may resume on the Project site once the evaluation of the find is complete by the qualified paleontologist. [Public Resources Code 21000-21177: California Environmental Quality Act]
53. In the event that human remains are discovered during construction of the Project, all work within 100 feet shall be ceased and the discovery will immediately be reported to the County Coroner. If the remains are determined to be Native American in origin, the County Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours of the determination. The NAHC will solicit those persons it believe to be the nearest descendants of the remains for recommendations. Aera shall, in consultation with the identified descendants of the remains and/or NAHC, will identify the appropriate measures for the treatment or disposition of the remains. [Public Resources Code 21000-21177: California Environmental Quality Act]

CONDITIONS CONTINUE ON NEXT PAGE

54. Prior to the start of construction activities, Aera shall provide the District with documentation demonstrating that maps identifying all wells in the vicinity of the sites have been submitted to DOGGR for compliance with DOGGR's "Well Review Program". [Public Resources Code 21000-21177: California Environmental Quality Act]
55. During construction activities, if unknown, unrecorded or abandoned wells are discovered, or if any wells are damaged, Aera shall immediately notify the DOGGR. [Public Resources Code 21000-21177: California Environmental Quality Act]
56. Any wells discovered or exposed during construction activities will be tested for flammable vapors. [Public Resources Code 21000-21177: California Environmental Quality Act]
57. This ATC shall be implemented prior to or concurrently with ATC S-1547-1178-0. [District Rule 2080]



# AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-1547-1179-1

**ISSUANCE DATE:** 06/27/2012

**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

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE OF S-1547-1179-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS AND ADDITIONAL SOX TEST METHODS

## 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 initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] 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

DAVID WARNER, Director of Permit Services

S-1547-1179-1 : Jun 27 2012 9:12AM - TORID : Joint Inspection NOT Required

4. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
5. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NOx burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
6. This unit is approved for operation at the following locations: SW/4 of Section 20, NE/4 & SE/4 of Section 29, and NW/4, SW/4 & SE/4 of Section 28, T28S, R21E. [District Rule 4102]
7. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
8. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [CEQA]
9. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [CEQA]
10. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO<sub>2</sub>, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
11. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
12. The total PM<sub>10</sub> emissions from Units S-1547-1162-0 through '-1180-0 shall not exceed 124 lb/day at location #2038 in the SW/4 of Section 20, T28S, R21E. [District Rule 4102]
13. The total PM<sub>10</sub> emissions from Units S-1547-1162 through '-1180-0 shall not exceed 168 lb/day at location #2972 in the SE/4 of Section 29, T28S, R21E. [District Rule 4102]
14. Permittee shall maintain records of daily PM<sub>10</sub> emissions from Units S-1547-1162-0 through S-1547-1180-0 at locations #2038 and #2972. [District Rule 4102]
15. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
16. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO<sub>x</sub>: 7 ppmvd @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu; PM<sub>10</sub>: 0.0076 lb-PM<sub>10</sub>/MMBtu; CO: 25 ppmvd @ 3% O<sub>2</sub> or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
17. Any of units S-1547-1162 through '-1180 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO<sub>x</sub>: 49,990 lb/yr; SO<sub>x</sub>: 17,210 lb/yr; PM<sub>10</sub>: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 730,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Permittee shall submit written notification to the District prior to commissioning activities. Such notification shall include anticipated beginning and ending dates of such activities. [District Rule 2080] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NO<sub>x</sub> and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO<sub>x</sub> (ppmv) - EPA Method 7E or ARB Method 100, NO<sub>x</sub> (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, stack gas oxygen (O<sub>2</sub>) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO<sub>x</sub> (lb/MMBtu) - ARB Method 8 or 100 or EPA Method 6, 6B, 6C or 8 or fuel gas sulfur content analysis and EPA Method 19, fuel gas sulfur content - EPA Method 11 or 15, ASTM D1072, D4468, D3246, D4084 or double GC for H<sub>2</sub>S and mercaptans performed in laboratory, fuel gas h<sub>h</sub>v -ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 1081, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. 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
27. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. 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 last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO<sub>x</sub> or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after 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 has occurred, subject to enforcement action. 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 performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO<sub>x</sub>, CO, and O<sub>2</sub> emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO<sub>x</sub>, CO, and O<sub>2</sub> analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

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55. During construction activities, if unknown, unrecorded or abandoned wells are discovered, or if any wells are damaged, Aera shall immediately notify the DOGGR. [Public Resources Code 21000-21177: California Environmental Quality Act]
56. Any wells discovered or exposed during construction activities will be tested for flammable vapors. [Public Resources Code 21000-21177: California Environmental Quality Act]
57. This ATC shall be implemented prior to or concurrently with ATC S-1547-1179-0. [District Rule 2080]



# AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-1547-1180-1

**ISSUANCE DATE:** 06/27/2012

**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

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE OF S-1547-1180-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS AND ADDITIONAL SOX TEST METHODS

## 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 initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] 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

DAVID WARNER, Director of Permit Services

S-1547-1180-1 : Jun 27 2012 9:12AM -- TORID : Joint Inspection NOT Required

4. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
5. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NOx burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
6. This unit is approved for operation at the following locations: SW/4 of Section 20, NE/4 & SE/4 of Section 29, and NW/4, SW/4 & SE/4 of Section 28, T28S, R21E. [District Rule 4102]
7. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
8. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [CEQA]
9. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [CEQA]
10. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO<sub>2</sub>, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
11. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
12. The total PM<sub>10</sub> emissions from Units S-1547-1162-0 through S-1547-1180-0 shall not exceed 124 lb/day at location #2038 in the SW/4 of Section 20, T28S, R21E. [District Rule 4102]
13. The total PM<sub>10</sub> emissions from Units S-1547-1162 through S-1547-1180-0 shall not exceed 168 lb/day at location #2972 in the SE/4 of Section 29, T28S, R21E. [District Rule 4102]
14. Permittee shall maintain records of daily PM<sub>10</sub> emissions from Units S-1547-1162-0 through S-1547-1180-0 at locations #2038 and #2972. [District Rule 4102]
15. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
16. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO<sub>x</sub>: 7 ppmvd @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu; PM<sub>10</sub>: 0.0076 lb-PM<sub>10</sub>/MMBtu; CO: 25 ppmvd @ 3% O<sub>2</sub> or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
17. Any of units S-1547-1162 through S-1547-1180 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO<sub>x</sub>: 49,990 lb/yr; SO<sub>x</sub>: 17,210 lb/yr; PM<sub>10</sub>: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 730,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NO<sub>x</sub> and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO<sub>x</sub> (ppmv) - EPA Method 7E or ARB Method 100, NO<sub>x</sub> (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, stack gas oxygen (O<sub>2</sub>) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO<sub>x</sub> (lb/MMBtu) - ARB Method 8 or 100 or EPA Method 6, 6B, 6C or 8 or fuel gas sulfur content analysis and EPA Method 19, fuel gas sulfur content - EPA Method 11 or 15, ASTM D1072, D4468, D3246, D4084 or double GC for H<sub>2</sub>S and mercaptans performed in laboratory, fuel gas hlv -ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 1081, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. 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
27. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. 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 last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO<sub>x</sub> or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after 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 has occurred, subject to enforcement action. 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 performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO<sub>x</sub>, CO, and O<sub>2</sub> emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO<sub>x</sub>, CO, and O<sub>2</sub> analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent by volume and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO<sub>x</sub>: 1,460 lb/quarter; SO<sub>x</sub>: 383 lb/quarter; PM<sub>10</sub>: 1,387 lb/quarter and VOC: 548 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-257-2, S-0135-2, S-0133-2, S-1821-2, S-40130321-2, S-784-2, S-796-2, S-2958-2, S-2395-1, S-2010-5, S-1825-5, and S-1337-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

42. Aera will surrender ERCs sufficient to fully offset operational emissions as required by District NSR requirements. [Public Resources Code 21000-21177: California Environmental Quality Act]
43. A qualified biologist will conduct a pre-construction survey for sensitive species within 30 days of the onset of ground disturbance. If sensitive species or their nests/dens are detected, the appropriate standardized avoidance measures will be implemented to preclude take of the species. If standardized avoidance measures cannot be achieved, Aera will consult with the CDFG and USFWS to develop alternative compliance measures. [Public Resources Code 21000-21177: California Environmental Quality Act]
44. Impacts to endangered species habitat as identified in pre-construction surveys will be mitigated at the Coles Levee Ecological Preserve at a ratio of 1.1:1. [Public Resources Code 21000-21177: California Environmental Quality Act]
45. Prior to construction, Aera will conduct a sensitive species education program (tailgate briefing) for all Project personnel. Topics to be discussed during the briefing shall include: occurrence and distribution of sensitive species in the project area, take avoidance measures being implemented during the Project, reporting requirements if incidental take occurs, and applicable definitions and prohibitions under the Endangered Species Act. [Public Resources Code 21000-21177: California Environmental Quality Act]
46. During construction, a biological monitor will be present while ground-disturbing activities are occurring based on the sensitivity of the habitat in which a project occurs. [Public Resources Code 21000-21177: California Environmental Quality Act]
47. During construction, pets are prohibited on the construction site. [Public Resources Code 21000-21177: California Environmental Quality Act]
48. During construction, firearms are prohibited on the construction site. [Public Resources Code 21000-21177: California Environmental Quality Act]
49. During construction, all food-related trash, such as wrappers, cans, bottles, bags, and food scraps will be disposed of daily in containers with secure covers and regularly removed from project sites. [Public Resources Code 21000-21177: California Environmental Quality Act]
50. During construction, USFWS and CDFG will be notified immediately in the event that the Project avoidance measures fail and there is a take of a threatened or endangered species. [Public Resources Code 21000-21177: California Environmental Quality Act]
51. In the event that archaeological resources are discovered during ground-disturbing activities associated with construction of the proposed Project, all work within 100 feet of the find shall cease. Aera will notify and retain a qualified archaeologist to assess and provide an evaluation of the significance of the find. Aera shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Kern County and other appropriate agencies and individuals. Work may resume on the Project site once the evaluation of the find is complete by the qualified archaeologist. [Public Resources Code 21000-21177: California Environmental Quality Act]
52. In the event that paleontological resources are discovered during ground-disturbing activities associated with construction of the proposed Project, all work within 100 feet of the find shall cease. Aera will notify and retain a qualified paleontologist to assess and provide an evaluation of the significance of the find. Aera shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Kern County and other appropriate agencies and individuals. Work may resume on the Project site once the evaluation of the find is complete by the qualified paleontologist. [Public Resources Code 21000-21177: California Environmental Quality Act]
53. In the event that human remains are discovered during construction of the Project, all work within 100 feet shall be ceased and the discovery will immediately be reported to the County Coroner. If the remains are determined to be Native American in origin, the County Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours of the determination. The NAHC will solicit those persons it believe to be the nearest descendants of the remains for recommendations. Aera shall, in consultation with the identified descendants of the remains and/or NAHC, will identify the appropriate measures for the treatment or disposition of the remains. [Public Resources Code 21000-21177: California Environmental Quality Act]

CONDITIONS CONTINUE ON NEXT PAGE

54. Prior to the start of construction activities, Aera shall provide the District with documentation demonstrating that maps identifying all wells in the vicinity of the sites have been submitted to DOGGR for compliance with DOGGR's "Well Review Program". [Public Resources Code 21000-21177: California Environmental Quality Act]
55. During construction activities, if unknown, unrecorded or abandoned wells are discovered, or if any wells are damaged, Aera shall immediately notify the DOGGR. [Public Resources Code 21000-21177: California Environmental Quality Act]
56. Any wells discovered or exposed during construction activities will be tested for flammable vapors. [Public Resources Code 21000-21177: California Environmental Quality Act]
57. This ATC shall be implemented prior to or concurrently with ATC S-1547-1180-0. [District Rule 2080]

San Joaquin Valley Air Pollution Control District  
Authority to Construct Application Review

Steam Generator Commissioning Period  
(Revised Application Review – June 26, 2012)

Facility Name: Aera Energy, LLC  
Mailing Address: PO Box 11164  
Bakersfield, CA 93389-1164  
Engineer: David Torii/Rich Karrs  
Lead Engineer: Rich Karrs  
Contact Person: Brent Winn  
Telephone: 661-665-4363  
Fax: 661-665-7437  
E-Mail: [btwinn@areaenergy.com](mailto:btwinn@areaenergy.com)  
Application #(s): S-1547-1173-1 through '1180-1  
Project #: 1120161  
Deemed Complete: 2/22/12

RWK  
6-27-12

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**I. Proposal**

In Project S1084433, Aera Energy LLC (Aera) received ATCs for eight 85 MM Btu/hr natural gas fired steam generators, units S-1547-1173-0 through '1180-0. This current project is evaluating Aera's request to authorize allowances and provisions for certain defined activities that are required as part of the "initial commissioning period" for the subject steam generators.

The specific activities that are required as part of the initial commissioning period are: refractory material curing, procedures required to safety check control valves, fans/blowers, shutoffs, and other instrumentation, and the adjustments to the burner, FGR and other emission control systems that are required to achieve the unit's steady state emissions limits. During the initial commissioning period, Aera has requested that the steam generators not be held to any currently authorized steady state emission limit, and that no specific alternate emissions limits be established for the initial commissioning period. The initial commissioning period is a one-time event that is expected to require no more than 135 total hours of actual burner operation to complete.

Periodic refractory material curing as an activity separate from the initial commissioning period is also being approved. Refractory material deteriorates and must be periodically replaced and may also require replacement after a major maintenance activity on the steam generator. Curing of the material is required after every replacement.

This application review will be limited to evaluating compliance with New Source Review (Rule 2201) and prohibitory rule requirements during the initial commissioning and refractory curing periods.

In a non-related item, Aera also requests that additional SOx test methods be authorized.

Aera received their Title V Permit on 1/31/03. This modification can be classified as a Title V minor modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. Aera must apply to administratively amend their Title V permit.

## II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4305	Boilers, Steam Generators and Process Heaters – Phase II (8/21/03)
Rule 4306	Boilers, Steam Generators and Process Heaters – Phase III (3/17/05)
Rule 4320	Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (10/16/08)
Rule 4351	Boilers, Steam Generators and Process Heaters – Phase 1 (8/21/03) Not applicable – located west of I-5
Rule 4405	Oxides of Nitrogen Emissions from Existing Steam Generators Used in Thermally Enhanced Oil Recovery – Central and Western Kern County Fields (12/17/92); Not Applicable – these are not existing steam generators
Rule 4406	Sulfur Compounds from Steam Generators – Kern County (12/17/92) Not applicable – ATCs issued after 9/12/79
Rule 4801	Sulfur Compounds (12/17/92)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)	
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines	

### III. Project Location

The steam generators will be operated at the following various specified locations at the Belridge Oilfield within Aera's Heavy Oil Western stationary source in Kern County.

Equipment Locations				
ATC	Section	Township	Range	
S-1547-1162-0 through S-1547-1180-0	SW/4 Section 20	28S	21E	MDB&M
	NE/4 and SE/4 Section 29	28S	21E	MDB&M
	NW/4, SW/4 & SE/4 Section 28	28S	21E	MDB&M

The above locations are not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

### IV. Process Description

The initial commission period is that one-time group of tuning and adjustment procedures that is necessary for the all newly constructed steam generators that begins at first firing and ends with the unit having demonstrated the contracted for performance and emissions specifications, not to exceed 135 hours of actual burner operation. A periodic refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material, not exceed 30 hours total of actual burner operation per occurrence.

### V. Equipment Listing

#### Pre-Project Equipment Description:

ATCs S-1547-1173-0 though '-1180-0 (eight identical steam generators; see ATCs in Appendix B):

85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN  
MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL  
MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED  
COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR  
EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS

Proposed Modification:

ATCs S-1547-1173-1 through '-1180-1 (eight identical steam generators):

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE OF S-1547-11XX-0 WITH AUTHORIZATION FOR AN INITIAL COMMISSIONING PERIOD, PERIODIC REFRACTORY MATERIAL CURING AND ADDITIONAL SOX TEST METHODS

Post Project Equipment Description:

S-1547-1173-0 through '-1180-0 (eight identical steam generators):

85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS

**VI. Emission Control Technology Evaluation**

The three principle activities undertaken during the initial commissioning of a steam generator, refractory material curing, safety checking and emission performance tuning, are unique and have been evaluated individually.

The curing of the refractory material is necessary to relieve thermal stress within the material itself. Curing the material is accomplished by running the unit at less than full capacity for a period of between 24 and 30 hours. During this period, the operator monitors and gradually increases the internal temperatures as recommended by the refractory material supplier. The steam generator is not equipped with a post combustion catalyst, but will recirculate exhaust gas (FGR) as part of it's normal (steady state) operation. During this curing procedure, the operator will add FGR as can be accommodated by the procedures for refractory material curing. The NOx emissions level at 50% firing with FGR are expected to be less than 30 ppmv based on prior hand held monitoring results for similarly sized and equipped units

Safety checking of components and systems is necessary to assure safe operation of the unit. Safety checks are performed on fuel and steam system control and pressure relief valves, the air handling system and on the instrumentation and monitoring systems. During these checks, the unit is fired under various load conditions, and is intermittently shutdown between individual testing procedures. Performing the safety checks is

expected to take up to 30 hours. Emissions levels during these periods will vary and are unknown.

Emissions performance tuning is the last activity performed as part on the initial commissioning period. Adjustments are made to the burner, the combustion fan, FGR system, and instrumentation and monitors to achieve the permitted steady state emissions levels. Emission levels of NO<sub>x</sub> and CO are monitored during this period and are expected to vary from a high of about 15 ppmv down to below the permitted limits. This activity is performed solely to achieve the very stringent emissions levels required and will be performed as expeditiously as possible to conserve fuel. The operator will use the burner manufacturer recommendations and the FGR and combustion air systems to tune the unit and limit emissions.

## **VII. General Calculations**

### **A. Assumptions**

- Emissions factors and limits during the initial commissioning period and periodic refractory material curing events will not be specified.
- Emissions levels will vary depending on the activity. Certain activities may require the unit to be stopped and restarted several times.
- Previously approved offset requirements will not be affected by the allowances for initial commissioning. Each unit will be able to meet its annual emissions limits, as it will not be running for some significant period prior to the start of the initial commissioning period and the length of time of the initial commissioning period is limited to 135 hours of actual burner operation.
- The applicant and the District concur that emissions during initial commissioning will exceed 2.0 lb/day for all air contaminants, thus BACT for initial commissioning is required.

### **B. Emission Factors**

- Emission factors are not required for this project.

### **C. Calculations**

- Emissions calculations are not possible as emissions factors and limits during initial commissioning have not been specified. Specification of emissions factors and limits is not required, as the applicant and the District have agreed to the requirement for a top down BACT review, and it is expected that units will comply with currently approved offset requirements. Furthermore, the subject steam generators went through the public notification process prior to their initial approval.

## VIII. Compliance

### Rule 2201 New and Modified Stationary Source Review Rule

#### A. Best Available Control Technology (BACT)

##### 1. BACT Applicability

The District and applicant agree that BACT is required for all pollutants for operation during the initial commissioning.

##### 2. BACT Guideline

There are no BACT guidelines available for steam generator commissioning activities.

##### 3. Top-Down BACT Analysis

Per Permit Services Policies and Procedures for BACT, a Top-Down BACT analysis shall be performed as a part of the application review for each application subject to the BACT requirements pursuant to the District's NSR Rule.

Pursuant to the attached Top-Down BACT Analysis (see **Appendix C**), BACT has been satisfied with the following:

NO<sub>x</sub>: Operation of the low NO<sub>x</sub> burner with FGR to the extent that it can be accommodated by the specific commissioning activity being undertaken, expeditious completion of commissioning activities and use of good work practice standard to minimize emissions

CO: 50 ppmvd @ 3% O<sub>2</sub> - achieved in practice

SO<sub>x</sub>: Utility Grade Natural Gas - achieved in practice

PM<sub>10</sub>: Utility Grade Natural Gas - achieved in practice

VOC: Utility Grade Natural Gas - achieved in practice

#### B. Offsets

##### 1. Offset Applicability and Quantity Required

Offset requirements were previously addressed for the subject steam generators in

Project S1084433 and the applicant's proposal was shown to satisfy NSR offset requirements. It has been shown in this current project that approving initial commissioning activities does not change the previously determined offset quantities; therefore, offset requirements have been satisfied for the current project approving initial commissioning activities.

## **C. Public Notification**

### **1. Applicability**

Public noticing was previously satisfied for the subject steam generator in project S1084433. Additional public noticing is not required for the amended project.

## **D. Daily Emission Limits (DELs)**

The steam generators are subject to DELs for steady state operation for all pollutants. Specific DELs for the initial commissioning period have not been established.

## **E. Compliance Assurance**

### **1. Source Testing**

During the initial commissioning period sources testing will not be required.

### **2. Monitoring**

During the initial commissioning period monitoring will not be required. The operator will monitor NO<sub>x</sub> and CO emission levels during the performance tuning of the burner and FGR system to confirm proper operation of this equipment.

### **3. Recordkeeping**

The operator will keep record of each activity and it's duration during initial commissioning period. Records will be made available upon request.

### **4. Reporting**

Reporting is not required during the initial commissioning period.

#### **F. Ambient Air Quality Analysis (AAQA)**

The District conducted the required AAQA in Project S1084433. No further analysis is required.

#### **G. Compliance Certification**

A compliance certification is not required for this project.

#### **H. Alternate Siting Analysis**

An alternate siting analysis is is not required for this project.

### **Rule 2520 Federally Mandated Operating Permits**

This facility is subject to this Rule, and has received their Title V Operating Permit. The proposed modification is a Minor Modification to the Title V Permit.

In accordance with Rule 2520, these modifications:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
  - a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
  - b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and
5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

As discussed above, the facility has applied for a Certificate of Conformity (COC). Therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Continued compliance with this rule is expected. The facility may construct/operate under the ATC upon submittal of the Title V administrative amendment/minor modification application.

**District Rule 4001 New Source Performance Standards**

40 CFR Part 60, Subpart Dc applies to Small Industrial-Commercial-Industrial Steam Generators between 10 MMBtu/hr and 100 MMBtu/hr (post-6/9/89 construction, modification or, reconstruction).

The subject steam generators have a rating of 85 MMBtu/hr and are fired on natural gas. Subpart Dc has no standards for gas-fired steam generators. Therefore, the subject steam generators are not affected facilities and subpart Dc does not apply.

**District Rule 4101 Visible Emissions**

**Rule 4102 Nuisance**

**California Health & Safety Code 41700 (Health Risk Assessment)**

**District Rule 4201 Particulate Matter Concentration**

**District Rule 4301 Fuel Burning Equipment**

In project S1084433, compliance with the above listed rules was previously demonstrated for each of the subject steam generators in steady state service. Compliance is also expected for these units when undertaking the initial commissioning activities described in this evaluation. During initial commissioning, the units will be firing exclusively on utility grade natural gas. As such, the units are expected to meet visible emissions, and particulate matter concentrations requirements, and the hourly emission limits required by these rules. As there will be no increase in gas usage during initial commissioning beyond what was previously modeled for steady state operation, there will be no increase in toxic air contaminants and no need for a revised health risk evaluation.

**District Rule 4305 Boilers, Steam Generators and Process Heaters – Phase 2**

**District Rule 4306 Boilers, Steam Generators and Process Heaters – Phase 3**

**District Rule 4320 Advanced Emission Reduction Options for Boilers, Steam Generators and Process Heaters Greater than 5 MMBtu/hr**

Compliance with the above listed rules is expected during initial commissioning. NOx and CO emission are expected to fluctuate during commissioning activities. However, compliance is only determined during periods of steady state (normal) operation. Steady state operation begins after the conclusion initial commissioning activities.

### **District Rule 4351 Boilers, Steam Generators and Process Heaters – Phase 1**

This rule applies to boilers, steam generators, and process heaters at NO<sub>x</sub> Major Sources that are not located west of Interstate 5 in Fresno, Kings, or Kern counties. The steam generators are located within the Heavy Oil Western stationary source. The units in this project are located west of I-5; therefore, the provisions of this rule do not apply.

### **District Rule 4801 Sulfur Compounds**

As each steam generator will be fired on utility grade natural gas during initial commissioning activities, compliance with District Rule 4801 requirements is expected.

### **California Health & Safety Code 42301.6 (School Notice)**

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

### **California Environmental Quality Act (CEQA)**

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The District adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

CEQA requirements were shown to be satisfied in the original approval of the subject steam generators. The current project to add provisions and allowances for initial commissioning is considered a very minor change to the original approval and does not impact that original determination that CEQA has been satisfied.

## **IX. Recommendation**

Compliance with all applicable rules and regulations is expected. Pending a successful COC Noticing period, issue ATCs S-1547-1173-1 through '1180-1 subject to the permit conditions on the attached draft ATCs in **Appendix C**.

**X. Billing Information**

<b>Annual Permit Fees</b>			
<b>Permit Number</b>	<b>Fee Schedule</b>	<b>Fee Description</b>	<b>Annual Fee</b>
All units	3020-02-H	85 MMBtu/hr	\$1,030.00 ea

**Appendix A**  
**Pre-Project ATCs**



## AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-1547-1173-0

**ISSUANCE DATE:** 06/02/2011

**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

**EQUIPMENT DESCRIPTION:**

85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS

### 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. This unit is approved for operation at the following locations: SW/4 of Section 20, NE/4 & SE/4 of Section 29, and NW/4, SW/4 & SE/4 of Section 28, T28S, R21E. [District Rule 4102]
4. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
5. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [CEQA]
6. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [CEQA]

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

7. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO<sub>2</sub>, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
9. The total PM<sub>10</sub> emissions from Units S-1547-1162-0 through S-1547-1180-0 shall not exceed 124 lb/day at location #2038 in the SW/4 of Section 20, T28S, R21E. [District Rule 4102]
10. The total PM<sub>10</sub> emissions from Units S-1547-1162 through S-1547-1180-0 shall not exceed 168 lb/day at location #2972 in the SE/4 of Section 29, T28S, R21E. [District Rule 4102]
11. Permittee shall maintain records of daily PM<sub>10</sub> emissions from Units S-1547-1162-0 through S-1547-1180-0 at locations #2038 and #2972. [District Rule 4102]
12. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
13. Emissions from the natural gas-fired unit shall not exceed any of the following limits: NO<sub>x</sub>: 7 ppmvd @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu; PM<sub>10</sub>: 0.0076 lb-PM<sub>10</sub>/MMBtu; CO: 25 ppmvd @ 3% O<sub>2</sub> or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
14. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO<sub>2</sub>; sulfur - 200 pounds of SO<sub>2</sub> per hour, or 2000 ppmv as SO<sub>2</sub>, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO<sub>2</sub> - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406 and 4801] Federally Enforceable Through Title V Permit
15. Any of units S-1547-1162 through S-1547-1180 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO<sub>x</sub>: 49,990 lb/yr; SO<sub>x</sub>: 17,210 lb/yr; PM<sub>10</sub>: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 730,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Duration of refractory curing shall not exceed 30 hours per each occurrence. Permittee shall keep accurate records of refractory curing duration and make records readily available to the District upon request. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit
20. A source test to demonstrate compliance with NO<sub>x</sub> and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NOX (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O2) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SOx - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H2S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. 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
27. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. 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 last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NOx or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after 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 has occurred, subject to enforcement action. 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 performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NOx, CO, and O2 emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NOx, CO, and O2 analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
30. The permittee shall maintain records of: (1) the date and time of NOx, CO and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NOx: 1,460 lb/quarter; SOx: 383 lb/quarter; PM10: 1,387 lb/quarter and VOC: 548 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-257-2, S-0135-2, S-0133-2, S-1821-2, S-40130321-2, S-784-2, S-796-2, S-2958-2, S-2395-1, S-2010-5, S-1825-5, and S-1337-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit
42. Aera will surrender ERCs sufficient to fully offset operational emissions as required by District NSR requirements. [Public Resources Code 21000-21177: California Environmental Quality Act]
43. A qualified biologist will conduct a pre-construction survey for sensitive species within 30 days of the onset of ground disturbance. If sensitive species or their nests/dens are detected, the appropriate standardized avoidance measures will be implemented to preclude take of the species. If standardized avoidance measures cannot be achieved, Aera will consult with the CDFG and USFWS to develop alternative compliance measures. [Public Resources Code 21000-21177: California Environmental Quality Act]
44. Impacts to endangered species habitat as identified in pre-construction surveys will be mitigated at the Coles Levee Ecological Preserve at a ratio of 1.1:1. [Public Resources Code 21000-21177: California Environmental Quality Act]
45. Prior to construction, Aera will conduct a sensitive species education program (tailgate briefing) for all Project personnel. Topics to be discussed during the briefing shall include: occurrence and distribution of sensitive species in the project area, take avoidance measures being implemented during the Project, reporting requirements if incidental take occurs, and applicable definitions and prohibitions under the Endangered Species Act. [Public Resources Code 21000-21177: California Environmental Quality Act]

CONDITIONS CONTINUE ON NEXT PAGE

46. During construction, a biological monitor will be present while ground-disturbing activities are occurring based on the sensitivity of the habitat in which a project occurs. [Public Resources Code 21000-21177: California Environmental Quality Act]
47. During construction, pets are prohibited on the construction site. [Public Resources Code 21000-21177: California Environmental Quality Act]
48. During construction, firearms are prohibited on the construction site. [Public Resources Code 21000-21177: California Environmental Quality Act]
49. During construction, all food-related trash, such as wrappers, cans, bottles, bags, and food scraps will be disposed of daily in containers with secure covers and regularly removed from project sites. [Public Resources Code 21000-21177: California Environmental Quality Act]
50. During construction, USFWS and CDFG will be notified immediately in the event that the Project avoidance measures fail and there is a take of a threatened or endangered species. [Public Resources Code 21000-21177: California Environmental Quality Act]
51. In the event that archaeological resources are discovered during ground-disturbing activities associated with construction of the proposed Project, all work within 100 feet of the find shall cease. Aera will notify and retain a qualified archaeologist to assess and provide an evaluation of the significance of the find. Aera shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Kern County and other appropriate agencies and individuals. Work may resume on the Project site once the evaluation of the find is complete by the qualified archaeologist. [Public Resources Code 21000-21177: California Environmental Quality Act]
52. In the event that paleontological resources are discovered during ground-disturbing activities associated with construction of the proposed Project, all work within 100 feet of the find shall cease. Aera will notify and retain a qualified paleontologist to assess and provide an evaluation of the significance of the find. Aera shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Kern County and other appropriate agencies and individuals. Work may resume on the Project site once the evaluation of the find is complete by the qualified paleontologist. [Public Resources Code 21000-21177: California Environmental Quality Act]
53. In the event that human remains are discovered during construction of the Project, all work within 100 feet shall be ceased and the discovery will immediately be reported to the County Coroner. If the remains are determined to be Native American in origin, the County Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours of the determination. The NAHC will solicit those persons it believe to be the nearest descendants of the remains for recommendations. Aera shall, in consultation with the identified descendants of the remains and/or NAHC, will identify the appropriate measures for the treatment or disposition of the remains. [Public Resources Code 21000-21177: California Environmental Quality Act]
54. Prior to the start of construction activities, Aera shall provide the District with documentation demonstrating that maps identifying all wells in the vicinity of the sites have been submitted to DOGGR for compliance with DOGGR's "Well Review Program". [Public Resources Code 21000-21177: California Environmental Quality Act]
55. During construction activities, if unknown, unrecorded or abandoned wells are discovered, or if any wells are damaged, Aera shall immediately notify the DOGGR. [Public Resources Code 21000-21177: California Environmental Quality Act]
56. Any wells discovered or exposed during construction activities will be tested for flammable vapors. [Public Resources Code 21000-21177: California Environmental Quality Act]



## AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-1547-1174-0

**ISSUANCE DATE:** 06/02/2011

**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

**EQUIPMENT DESCRIPTION:**

85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS

### CONDITIONS

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3. This unit is approved for operation at the following locations: SW/4 of Section 20, NE/4 & SE/4 of Section 29, and NW/4, SW/4 & SE/4 of Section 28, T28S, R21E. [District Rule 4102]
4. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
5. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [CEQA]
6. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [CEQA]

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

7. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO<sub>2</sub>, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3]
8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
9. The total PM<sub>10</sub> emissions from Units S-1547-1162-0 through S-1547-1180-0 shall not exceed 124 lb/day at location #2038 in the SW/4 of Section 20, T28S, R21E. [District Rule 4102]
10. The total PM<sub>10</sub> emissions from Units S-1547-1162 through S-1547-1180-0 shall not exceed 168 lb/day at location #2972 in the SE/4 of Section 29, T28S, R21E. [District Rule 4102]
11. Permittee shall maintain records of daily PM<sub>10</sub> emissions from Units S-1547-1162-0 through S-1547-1180-0 at locations #2038 and #2972. [District Rule 4102]
12. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
13. Emissions from the natural gas-fired unit shall not exceed any of the following limits: NO<sub>x</sub>: 7 ppmvd @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu; PM<sub>10</sub>: 0.0076 lb-PM<sub>10</sub>/MMBtu; CO: 25 ppmvd @ 3% O<sub>2</sub> or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
14. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO<sub>2</sub>; sulfur - 200 pounds of SO<sub>2</sub> per hour, or 2000 ppmv as SO<sub>2</sub>, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO<sub>2</sub> - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406 and 4801] Federally Enforceable Through Title V Permit
15. Any of units S-1547-1162 through S-1547-1180 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO<sub>x</sub>: 49,990 lb/yr; SO<sub>x</sub>: 17,210 lb/yr; PM<sub>10</sub>: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 730,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Duration of refractory curing shall not exceed 30 hours per each occurrence. Permittee shall keep accurate records of refractory curing duration and make records readily available to the District upon request. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit
20. A source test to demonstrate compliance with NO<sub>x</sub> and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO<sub>x</sub> (ppmv) - EPA Method 7E or ARB Method 100, NO<sub>x</sub> (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O<sub>2</sub>) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO<sub>x</sub> - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H<sub>2</sub>S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. 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
27. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. 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 last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO<sub>x</sub> or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after 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 has occurred, subject to enforcement action. 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 performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO<sub>x</sub>, CO, and O<sub>2</sub> emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO<sub>x</sub>, CO, and O<sub>2</sub> analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
30. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent by volume and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NOx: 1,460 lb/quarter; SOx: 383 lb/quarter; PM10: 1,387 lb/quarter and VOC: 548 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-257-2, S-0135-2, S-0133-2, S-1821-2, S-40130321-2, S-784-2, S-796-2, S-2958-2, S-2395-1, S-2010-5, S-1825-5, and S-1337-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit
42. Aera will surrender ERCs sufficient to fully offset operational emissions as required by District NSR requirements. [Public Resources Code 21000-21177: California Environmental Quality Act]
43. A qualified biologist will conduct a pre-construction survey for sensitive species within 30 days of the onset of ground disturbance. If sensitive species or their nests/dens are detected, the appropriate standardized avoidance measures will be implemented to preclude take of the species. If standardized avoidance measures cannot be achieved, Aera will consult with the CDFG and USFWS to develop alternative compliance measures. [Public Resources Code 21000-21177: California Environmental Quality Act]
44. Impacts to endangered species habitat as identified in pre-construction surveys will be mitigated at the Coles Levee Ecological Preserve at a ratio of 1.1:1. [Public Resources Code 21000-21177: California Environmental Quality Act]
45. Prior to construction, Aera will conduct a sensitive species education program (tailgate briefing) for all Project personnel. Topics to be discussed during the briefing shall include: occurrence and distribution of sensitive species in the project area, take avoidance measures being implemented during the Project, reporting requirements if incidental take occurs, and applicable definitions and prohibitions under the Endangered Species Act. [Public Resources Code 21000-21177: California Environmental Quality Act]

CONDITIONS CONTINUE ON NEXT PAGE

46. During construction, a biological monitor will be present while ground-disturbing activities are occurring based on the sensitivity of the habitat in which a project occurs. [Public Resources Code 21000-21177: California Environmental Quality Act]
47. During construction, pets are prohibited on the construction site. [Public Resources Code 21000-21177: California Environmental Quality Act]
48. During construction, firearms are prohibited on the construction site. [Public Resources Code 21000-21177: California Environmental Quality Act]
49. During construction, all food-related trash, such as wrappers, cans, bottles, bags, and food scraps will be disposed of daily in containers with secure covers and regularly removed from project sites. [Public Resources Code 21000-21177: California Environmental Quality Act]
50. During construction, USFWS and CDFG will be notified immediately in the event that the Project avoidance measures fail and there is a take of a threatened or endangered species. [Public Resources Code 21000-21177: California Environmental Quality Act]
51. In the event that archaeological resources are discovered during ground-disturbing activities associated with construction of the proposed Project, all work within 100 feet of the find shall cease. Aera will notify and retain a qualified archaeologist to assess and provide an evaluation of the significance of the find. Aera shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Kern County and other appropriate agencies and individuals. Work may resume on the Project site once the evaluation of the find is complete by the qualified archaeologist. [Public Resources Code 21000-21177: California Environmental Quality Act]
52. In the event that paleontological resources are discovered during ground-disturbing activities associated with construction of the proposed Project, all work within 100 feet of the find shall cease. Aera will notify and retain a qualified paleontologist to assess and provide an evaluation of the significance of the find. Aera shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Kern County and other appropriate agencies and individuals. Work may resume on the Project site once the evaluation of the find is complete by the qualified paleontologist. [Public Resources Code 21000-21177: California Environmental Quality Act]
53. In the event that human remains are discovered during construction of the Project, all work within 100 feet shall be ceased and the discovery will immediately be reported to the County Coroner. If the remains are determined to be Native American in origin, the County Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours of the determination. The NAHC will solicit those persons it believe to be the nearest descendants of the remains for recommendations. Aera shall, in consultation with the identified descendants of the remains and/or NAHC, will identify the appropriate measures for the treatment or disposition of the remains. [Public Resources Code 21000-21177: California Environmental Quality Act]
54. Prior to the start of construction activities, Aera shall provide the District with documentation demonstrating that maps identifying all wells in the vicinity of the sites have been submitted to DOGGR for compliance with DOGGR's "Well Review Program". [Public Resources Code 21000-21177: California Environmental Quality Act]
55. During construction activities, if unknown, unrecorded or abandoned wells are discovered, or if any wells are damaged, Aera shall immediately notify the DOGGR. [Public Resources Code 21000-21177: California Environmental Quality Act]
56. Any wells discovered or exposed during construction activities will be tested for flammable vapors. [Public Resources Code 21000-21177: California Environmental Quality Act]



# AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-1547-1175-0

**ISSUANCE DATE:** 06/02/2011

**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

**EQUIPMENT DESCRIPTION:**

85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS

## 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. This unit is approved for operation at the following locations: SW/4 of Section 20, NE/4 & SE/4 of Section 29, and NW/4, SW/4 & SE/4 of Section 28, T28S, R21E. [District Rule 4102]
4. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
5. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [CEQA]
6. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [CEQA]

CONDITIONS CONTINUE ON NEXT PAGE

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7. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO<sub>2</sub>, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
9. The total PM<sub>10</sub> emissions from Units S-1547-1162-0 through '-1180-0 shall not exceed 124 lb/day at location #2038 in the SW/4 of Section 20, T28S, R21E. [District Rule 4102]
10. The total PM<sub>10</sub> emissions from Units S-1547-1162 through '-1180-0 shall not exceed 168 lb/day at location #2972 in the SE/4 of Section 29, T28S, R21E. [District Rule 4102]
11. Permittee shall maintain records of daily PM<sub>10</sub> emissions from Units S-1547-1162-0 through S-1547-1180-0 at locations #2038 and #2972. [District Rule 4102]
12. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
13. Emissions from the natural gas-fired unit shall not exceed any of the following limits: NO<sub>x</sub>: 7 ppmvd @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu; PM<sub>10</sub>: 0.0076 lb-PM<sub>10</sub>/MMBtu; CO: 25 ppmvd @ 3% O<sub>2</sub> or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
14. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO<sub>2</sub>; sulfur - 200 pounds of SO<sub>2</sub> per hour, or 2000 ppmv as SO<sub>2</sub>, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO<sub>2</sub> - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406 and 4801] Federally Enforceable Through Title V Permit
15. Any of units S-1547-1162 through '-1180 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO<sub>x</sub>: 49,990 lb/yr; SO<sub>x</sub>: 17,210 lb/yr; PM<sub>10</sub>: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 730,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Duration of refractory curing shall not exceed 30 hours per each occurrence. Permittee shall keep accurate records of refractory curing duration and make records readily available to the District upon request. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit
20. A source test to demonstrate compliance with NO<sub>x</sub> and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O2) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SOx - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H2S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. 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
27. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. 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 last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NOx or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after 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 has occurred, subject to enforcement action. 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 performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NOx, CO, and O2 emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NOx, CO, and O2 analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
30. The permittee shall maintain records of: (1) the date and time of NOx, CO and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
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32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NOx: 1,460 lb/quarter; SOx: 383 lb/quarter; PM10: 1,387 lb/quarter and VOC: 548 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-257-2, S-0135-2, S-0133-2, S-1821-2, S-40130321-2, S-784-2, S-796-2, S-2958-2, S-2395-1, S-2010-5, S-1825-5, and S-1337-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit
42. Aera will surrender ERCs sufficient to fully offset operational emissions as required by District NSR requirements. [Public Resources Code 21000-21177: California Environmental Quality Act]
43. A qualified biologist will conduct a pre-construction survey for sensitive species within 30 days of the onset of ground disturbance. If sensitive species or their nests/dens are detected, the appropriate standardized avoidance measures will be implemented to preclude take of the species. If standardized avoidance measures cannot be achieved, Aera will consult with the CDFG and USFWS to develop alternative compliance measures. [Public Resources Code 21000-21177: California Environmental Quality Act]
44. Impacts to endangered species habitat as identified in pre-construction surveys will be mitigated at the Coles Levee Ecological Preserve at a ratio of 1.1:1. [Public Resources Code 21000-21177: California Environmental Quality Act]
45. Prior to construction, Aera will conduct a sensitive species education program (tailgate briefing) for all Project personnel. Topics to be discussed during the briefing shall include: occurrence and distribution of sensitive species in the project area, take avoidance measures being implemented during the Project, reporting requirements if incidental take occurs, and applicable definitions and prohibitions under the Endangered Species Act. [Public Resources Code 21000-21177: California Environmental Quality Act]

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46. During construction, a biological monitor will be present while ground-disturbing activities are occurring based on the sensitivity of the habitat in which a project occurs. [Public Resources Code 21000-21177: California Environmental Quality Act]
47. During construction, pets are prohibited on the construction site. [Public Resources Code 21000-21177: California Environmental Quality Act]
48. During construction, firearms are prohibited on the construction site. [Public Resources Code 21000-21177: California Environmental Quality Act]
49. During construction, all food-related trash, such as wrappers, cans, bottles, bags, and food scraps will be disposed of daily in containers with secure covers and regularly removed from project sites. [Public Resources Code 21000-21177: California Environmental Quality Act]
50. During construction, USFWS and CDFG will be notified immediately in the event that the Project avoidance measures fail and there is a take of a threatened or endangered species. [Public Resources Code 21000-21177: California Environmental Quality Act]
51. In the event that archaeological resources are discovered during ground-disturbing activities associated with construction of the proposed Project, all work within 100 feet of the find shall cease. Aera will notify and retain a qualified archaeologist to assess and provide an evaluation of the significance of the find. Aera shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Kern County and other appropriate agencies and individuals. Work may resume on the Project site once the evaluation of the find is complete by the qualified archaeologist. [Public Resources Code 21000-21177: California Environmental Quality Act]
52. In the event that paleontological resources are discovered during ground-disturbing activities associated with construction of the proposed Project, all work within 100 feet of the find shall cease. Aera will notify and retain a qualified paleontologist to assess and provide an evaluation of the significance of the find. Aera shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Kern County and other appropriate agencies and individuals. Work may resume on the Project site once the evaluation of the find is complete by the qualified paleontologist. [Public Resources Code 21000-21177: California Environmental Quality Act]
53. In the event that human remains are discovered during construction of the Project, all work within 100 feet shall be ceased and the discovery will immediately be reported to the County Coroner. If the remains are determined to be Native American in origin, the County Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours of the determination. The NAHC will solicit those persons it believe to be the nearest descendants of the remains for recommendations. Aera shall, in consultation with the identified descendants of the remains and/or NAHC, will identify the appropriate measures for the treatment or disposition of the remains. [Public Resources Code 21000-21177: California Environmental Quality Act]
54. Prior to the start of construction activities, Aera shall provide the District with documentation demonstrating that maps identifying all wells in the vicinity of the sites have been submitted to DOGGR for compliance with DOGGR's "Well Review Program". [Public Resources Code 21000-21177: California Environmental Quality Act]
55. During construction activities, if unknown, unrecorded or abandoned wells are discovered, or if any wells are damaged, Aera shall immediately notify the DOGGR. [Public Resources Code 21000-21177: California Environmental Quality Act]
56. Any wells discovered or exposed during construction activities will be tested for flammable vapors. [Public Resources Code 21000-21177: California Environmental Quality Act]