DOCKETED

Docket Number:	99-AFC-01C
Project Title:	Elk Hills Power Project - Compliance
TN #:	202863
Document Title:	Petition to Modify Condition AQ-11
Description:	Elk Hills Power Project (99-AFC-1C) Requesting modification on CEC Condition AQ-11
Filer:	Sonnie Pineda
Organization:	Elk Hills Power, LLC
Submitter Role:	Applicant
Submission Date:	7/31/2014 2:24:57 PM
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Elk Hills Power

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July 31, 2014

Attn: Ms. Mary Dyas
Compliance Project Manager
California Energy Commission
1516 Ninth Street, MS-2000
Sacramento, CA 95814

Subject: Petition for Post Certification Amendment and Changes – Air Quality
Elk Hills Power, LLC (99-AFC-1)

Dear Ms. Dyas,

Pursuant to Title 20, CCR Chapter, Section 1769 (a) (1), Elk Hills Power, LLC (EHP) is filing this petition for a proposed modification to the Commission Decision for the Elk Hills Power Project, Docket 99-AFC-1. This petition incorporates a change to one of the project's Air Quality Conditions of Certification, namely AQ-11. An application for this change to Permit to Operate (PTOs) #S-3523-1-9 and #S-3523–2-9 was submitted and approved by the San Joaquin Valley Air Pollution Control District (Air District). The Air District finalized the changes and issued Authorities to Construct (ATC) #S-3523-1-10 and #S-3523-2-10 (see enclosed).

This petition includes a modification solely related to the duration of a regular startup, extended startup and aborted shutdown, specifically to modify the duration in Condition of Certification AQ-11 to be increased from 2 hour to 3 hour for a regular start up; from 6 hours to 7 hours for extended start up and allowed to recover from the aborted shutdown. There are no changes to short or long-term emission rates being requested. This petition to amend the Commission Decision approving the project contains all the information that is required pursuant to 20 CCR Section 1769, Post Certification Amendments and Changes, of the California Energy Commission's Siting Regulations.

Changes to Conditions

In order to incorporate the modifications discussed above, EHP proposes to modify Condition of Certification AQ-11. EHP requests the following changes and additions be made to the air quality Conditions of Certification and Verification in the Commission Decision. ~~Strikethrough~~ indicates deleted text and underlined indicates replacement or new text.

"AQ-11 Startup is defined as the period beginning with initial turbine firing until the unit meets the lb/hr and ppmv emission limits in Condition AQ-15. An extended startup shall be defined as a startup that occurs after the steam turbine has been shutdown for 72 hours or more. Shutdown is defined as the period beginning with initiation of turbine shutdown sequence and ending with

cessation of firing of the gas turbine engine. Aborted shutdown is defined the period beginning with initiation of turbine shutdown and ends when the unit has ramped up and is meeting the lb/hr and ppmv emission limits. Startup and shutdown duration shall not exceed the following:

- ~~Two~~ Three hours for a regular startup,
- ~~six~~ seven hours for an extended startup, and
- one hour for a shutdown and aborted shutdown , per occurrence. [District Rule 2201, 4001, and 4703, 5.3.3 and SJ-99-02]

Verification: The project owner shall provide records of compliance as part of quarterly records of Condition **AQ-35**."

The proposed modification will not materially alter the conclusions contained in the Commission Decision. Furthermore, the proposed modifications will satisfy all applicable existing Conditions of Certification other than the air quality condition proposed below, and no other changes in conditions are required. The change to the startup duration requires that one Condition of Certification be modified, specifically Condition AQ-11.

Necessity for Air Quality Modifications

During the life of the plant, EHP has been able to operate almost continuously, and hence has had only a limited number of extended startups[1]. However, during extended startups the current six hour limitation for the complete startup cycle has been met by employing techniques that are not recommended by the original equipment manufacturer (OEM) specifications and requires implementing abnormal operating procedures. Basically, EHP has pushed the equipment to operating conditions for which it was not designed to meet. These abnormal operations have, over time, exhausted the equipment and it has become an increasing challenge to meet current PTO conditions in both extended and regular[2] startup operations. Therefore, EHP requests an increase in the allowed duration for extended startup and alignment in aborted shutdown conditions. A description of the requested changes is provided below.

In a combined-cycle system, bringing a power block online is a complicated process. EHP consists of two combustion turbines (CT's), two heat recovery steam generators (HRSGs), and one steam turbine. The two CT's share a common starting system and only one CT can be started at a time. The startup sequence includes multiple steps in which the equipment power output is "ramped up" until it reaches normal operating conditions (defined as Mode 6). Operating Modes are defined by General Electric (GE), the manufacturer of the turbines. This consists of carefully increasing the CT's speed and load as the HRSG's, steam drums, steam piping, emissions control equipment, steam turbine, and other equipment are heated and brought

[1] Extended startups are defined in the PSD permit as "…startup that occurs after the steam turbine has been shut down for 72 hours or more. The duration of extended startup events shall not exceed 6 hours." (Section X.F.1.b)
[2] Regular startups are defined in the PSD permit as "… startup that occurs after the steam turbine has been shut down for less than 72 hours. The duration of regular startup events shall not exceed 2 hours."

to a stable operating condition. Operating the systems within these vendor specified boundaries is required to protect personnel and equipment, as well as maintain warrantees.
During a typical extended startup at EHP, one CT is started and ramped up to low load where it is held until the exhaust gases bring the respective HRSG and steam systems to a specified temperature. The second CT is allowed to start following synchronization of the first CT and is also held at low load for warm up of its HRSG and steam systems. Both CT's are required to supply an adequate (maximum output) amount of steam for the steam turbine and its auxiliary equipment. One CT is dedicated to run in temperature matching mode for steam turbine warm-up and utilized for auxiliary uses, primarily for the air ejectors, which establish and maintain steam turbine condenser vacuum.

The HRSG's have three separate pressure sections, each with temperature increase rate limitations. As soon as the HRSG's achieve the proper temperature, the steam turbine and its auxiliaries are started and gradually heated as steam becomes available to drive the systems. Increases in steam turbine speed are constrained by the temperature differential between the metal surfaces and the steam and cannot be exceeded. Both CT's must be held at low load until the HRSG's can provide sufficient heat for operating the associated fuel gas heaters required for the Dry Low-NO_x combustion system. The CT load cannot be raised again until the fuel gas reaches the vendor specified set point. Loads are increased gradually until eventually normal operating loads and conditions are reached.

During the startup process the Oxidation Catalyst, for CO/VOC control, increases in effectiveness as the exhaust gas temperature increases. The Selective Catalytic Reduction (SCR) system for NO_x control does not become effective until the proper exhaust gas temperature is reached and ammonia injection begins. EHP has continued to optimize the SCR effectiveness and minimize emissions during startup by lowering the ammonia injection temperature within allowable vendor specifications and permit limits. Currently ammonia injection begins when the exhaust gas temperature reaches 500º F. The early introduction of ammonia reduces NO_x emissions through the remainder of the startup process but cannot achieve compliance with the 2.5 ppm_{vd} @ 15% O_2 NO_x permit limit until the CT begins operating in Mode 6 (Dry Low-NO_x Mode).

During regular start up operations, similar procedures are followed, however, having one unit online decreases the time necessary to bring the second unit only. Similarly, during regular start up operations care and following recommended start up procedures need to be maintained to protect the unit, life, and manufacturer warrantees.

EHP has, during the life of the plant, taken the necessary measures to maintain compliance with its operating permits. However, as the plant and equipment age it has become more difficult to meet these requirements while maintaining the integrity of its equipment. An example where straining the equipment to meet both regular and extended start up duration is of high concern is potentially overheating the high pressure section of the boiler. This may result in the compromise of the internal tube system causing a complete integrity failure. Another example is ramping up faster than recommended which has the potential effect of the increasing the

eccentricity of the rotor bow. The forced ramp up pushes the eccentricity increasing the risk of the bow not maintaining proper clearance. In addition, EHP has had to force the steam and metal temperature differential requirements to minimize startup duration. Similarly, EHP has had to take significant measures to limit the vibration of the rotor during start ups. One such measure is employing balancing shots on the rotor. Mechanical integrity inspections have revealed stresses throughout the Steam Turbine caused by the forced operations. These examples, along with other early indicators demonstrate that the need for startup duration to be increased to the requested duration.

It should be noted that the system ramp up and the time it takes to reach normal operating conditions are limited by various factors, such as the physical equipment limitations discussed above and the temperature of the equipment prior to commencing combustion (i.e., regular start vs. extended start). There can also be limitations on how fast electrical power can be added to, or subtracted from, the electrical grid. These requirements are external to EHP (and in fact to all other operators within the CA-ISO control area), and may cause extended startups, since these requirements limit a facility's ability to efficiently reach optimum operating conditions.

Aborted Shutdowns

During normal operations conditions may arise where a trip of the unit occurs. The trip prompts an immediate response from the operator to stabilize the unit and prevent a full shutdown. During these incidents, the permit to operate does not provide an allowance to recover from these aborted shutdowns and similarly avoid unnecessary shutdown and start up emissions.

Examples of when a trip can occur are a change in fuel quality, a false reading, a valve failing close, a mechanical or instrumentation malfunctions, etc. During these events plant operators may be able to take immediate corrective actions to stabilize the unit in lieu of shutting down. These actions can relieve the District and our neighbors of the undue burden of associated shutdown or start up emissions. Approximately 400 pounds of allowable NOx, and 3600 of CO, (covered by permitted startup and shutdown emission rates). Additionally, aborted shutdowns are accounted in our PSD permit giving EHP the operations flexibility to avoid unnecessary emissions.

Compliance with Laws, Ordinances, Regulations and Standards

Previous EHP applications have provided a comprehensive review of the requirements applicable to the facility and a demonstration of compliance. This application involves only a minor change of conditions without short or long term emission changes. EHP has applied to the District for a change of conditions and was approved. An Authority To Construct (ATC) permit was issued by the air district. No other LORS are affected by the change.

Potential Effects on the Public

The proposed modifications to the CEC Conditions in the Air Quality category will not affect project equipment or the significance of environmental impacts. Therefore, the proposed modifications are not anticipated to affect nearby property owners, the public, or parties in the application proceedings. The nearest residence to the facility is approximately five miles away.

The list of property owners surrounding the project is provided in the table below

List of Property Owners

APN	Owner	Address
101-010-02	Pacific Gas & Electric Co.	Main Headquarters, San Francisco, CA 94105
102-050-17	Farmers Co-Operative Gin Inc.	2531 Wasco Way, Buttonwillow, CA 93206-9711
102-050-20	Farmers Co-Operative Gin Inc.	2531 Wasco Way, Buttonwillow, CA 93206-9711
102-050-02	Patricia E. Houchin	140 W. 1st Street, Buttonwillow, CA 93206
103-100-26	Alan S. Jacobs, et. Al.	RR2 Box 700, Prairie City, OR 97869
103-120-01	Buttonwillow Land and Cattle Company	7540 Tracy Ave., Buttonwillow, CA 93206
103-120-13	Farmers Co-Operative Gin Inc.	2531 Wasco Way, Buttonwillow, CA 93206-9711
103-120-12	Farmers Co-Operative Gin Inc.	2531 Wasco Way, Buttonwillow, CA 93206-9711
103-120-09	Patricia E. Houchin	140 W. 1st Street, Buttonwillow, CA 93206
102-080-04	Patricia E. Houchin	140 W. 1st Street, Buttonwillow, CA 93206
102-080-03	Dana C. and Martha Lee Hair	629 Oleander Ave., Bakersfield, CA 93304-2042
102-080-05	Arthur J. and Jane Torrigiani	Wasco Way and Buerkle Rd., 288 3rd St., Buttonwillow, CA 93206
103-210-01	Margaret M. Hair	629 Oleander Ave., Bakersfield, CA 93304-2042
103-210-23	Charles M. Parsons, Trustee	5632 Brite Rd., Buttonwillow, CA 93206
103-210-05	Betsy Bleecker Wallace, et. al.	6616 Kane Way, Bakersfield, CA 93309
102-230-10	John and Christine Romanini, Trustees	P.O. Box 786, Buttonwillow 93206
102-230-11 102-230-13	Milne and Mary Stearns	4529 Wasco Way, Buttonwillon, CA 93206
102-230-06	Betsy Bleecker Wallace, et. al.	6616 Kane Way, Bakersfield, CA 93309
103-220-04	John and Christine Romanini, Trustees	P.O. Box 786, Buttonwillow 93206
159-270-03	Chevron USA, Inc.	P.O. Box 1392, Bakersfield, CA 93302
159-220-27	John and Christine Romanini, Trustees	P.O. Box 786, Buttonwillow 93206
103-220-08	L.C. and Mary H. Shepherd	4506 Wasco Way, Buttonwillow 93206

List of Property Owners

APN	Owner	Address
103-220-17	Nancy Romanini, Trustee	5900 Desert Hills, Bakersfield, CA 93309
103-220-12	Nancy Romanini, Trustee	5900 Desert Hills, Bakersfield, CA 93309
158-020-25	C.J. and Allene Shepherd and Floyd E. Shepherd, Trustees	7208 Norris Rd., Bakersfield, CA 93308
158-020-14	Norman C. Shepherd	P.O. Box 147, Buttonwillow, CA 93206
158-020-13	Norman C. Shepherd	P.O. Box 147, Buttonwillow, CA 93206
158-030-02	Letlow Russell, et. al.	386 W. 3rd Street, Buttonwillow, CA 93206
159-090-01	C.J. and Allene Shepherd and Floyd E. Shepherd, Trustees	7208 Norris Rd., Bakersfield, CA 93308
159-090-09	John E. Leibrock, et. al.	431 Starmount Ln., Bakersfield, CA 93308
159-090-20	James Tavioli	393 W. 3rd Street, Buttonwillow, CA 93206
159-090-17	James Tavioli	393 W. 3rd Street, Buttonwillow, CA 93206
159-090-10	Maricio M. Moreno	5302 Wasco Way, Butonwillow, CA 93206
159-110-26	Brent L. and Janet M. Selick	819 Miller Ave., South San Francisco, CA 94080
158-010-09	Occidental of Elk Hills	28590 Highway 119, Tupman, CA 93276 –1001
159-110-02	Eugene L. Davis, etux, Trustees	630 Grove Ave., Ukiah, CA 95482
159-110-25	Antoinette M. Conner	5847 Round Up Way, Bakersfield, CA 93306

Summary of Request

Change the regular startup duration from two to three hours, amend the extended startup duration from six to seven hours, and add operational flexibility for aborted shutdowns is requested. As demonstrated in this petition, the requested modification of the air quality Condition of Certification AQ-11 is not anticipated to have an adverse effect on the public, the environment and no change in potential to emit or emission limits. The modifications will not affect compliance with applicable LORS. Accordingly, EHP requests that the Energy Commission Staff expedite review of this petition, and request Commission approval of the proposed modified condition in accordance with Title 20 CCR Section 1769 (a)(3).

Should you have any questions or need additional information, please contact Juan Campos at (661) 763-6354.

Sincerely,

Robert Bond
EHP Team Lead

Encl: SJVAPCD ATC S-3523-1-10
SJVAPCD ATC S-3523-2-10

CC: J. Hegeman, OEHI
M Glavin, OEHI
R. Rodriguez, OEHI
S. Pineda, OEHI
EHP File – 13 CEC 2014

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

AUTHORITY TO CONSTRUCT

PERMIT NO: S-3523-1-10 **ISSUANCE DATE:** 07/01/2014

LEGAL OWNER OR OPERATOR: ELK HILLS POWER LLC
MAILING ADDRESS: PO BOX 460
TUPMAN, CA 93276

LOCATION: 4026 SKYLINE RD
TUPMAN, CA 93276

SECTION: NE35 **TOWNSHIP:** 30S **RANGE:** 23E

EQUIPMENT DESCRIPTION:
MODIFICATION OF GE FRAME 7 MODEL PG7241FA NATURAL GAS FIRED COMBINED CYCLE GAS TURBINE ENGINE/ELECTRICAL GENERATOR #1 WITH DRY LOW NOX COMBUSTORS, 250.5 MMBTU/HR NATURAL GAS FIRED DUCT BURNER, HEAT RECOVERY STEAM GENERATOR, SELECTIVE CATALYTIC REDUCTION, OXIDATION CATALYST, AND STEAM TURBINE SHARED WITH S-3523-2 (503 MW TOTAL PLANT NOMINAL RATING): INCREASE REGULAR STARTUP TIME FROM 2 TO 3 HOURS, INCREASE EXTENDED STARTUP TIME FROM 6 TO 7 HOURS, AND AUTHORIZE A ONE HOUR DURATION FOR ABORTED SHUTDOWNS

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. Combustion turbine generator (CTG) and electrical generator lube oil vents shall be equipped with mist eliminators to maintain visible emissions from lube oil vents no greater than 5% opacity, except for three minutes in any hour. [District NSR Rule] Federally Enforceable Through Title V Permit
4. CTG shall be equipped with continuously recording non resettable fuel gas flowmeter. [District NSR Rule and SJ-99-02] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
S-3523-1-10 Jul 1 2014 8:45AM – TORID : Joint Inspection NOT Required

5. CTG exhaust after the SCR unit shall be equipped with continuously recording emissions monitors dedicated to this unit for NOx, CO, and O2. Continuous emissions monitors shall meet the requirements of 40 CFR Part 60, Appendices B and F, and 40 CFR Part 75, and shall be capable of monitoring emissions during startups and shutdowns as well as normal operating conditions. If relative accuracy of CEM(s) cannot be demonstrated during startup conditions, CEM results during startup and shutdown events shall be replaced with startup emission rates obtained from source testing to determine compliance with emission limits. [40 CFR 60.334(c), 40 CFR 64.3, District Rules 1080 and 4703, 6.2.1 and District NSR Rule and SJ-99-02] Federally Enforceable Through Title V Permit
6. The CEMS shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the EPA. [40 CFR 64.3 and District Rule 1080, 6.4] Federally Enforceable Through Title V Permit
7. The monitoring of CO emissions with the CEMS shall serve as a surrogate for monitoring of VOC emissions as required by 40 CFR 64 (Compliance Assurance Monitoring). Operation of the unit with CO concentration within the allowable range shall be indicative of VOC concentrations which are less than the allowed maximum. The relationship between concentration of VOC and concentration of CO shall be demonstrated at each annual source test. [40 CFR 64.3] Federally Enforceable Through Title V Permit
8. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR part 64.7. [40 CFR Part 64.7] Federally Enforceable Through Title V Permit
9. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR part 64.9. [40 CFR Part 64.9] Federally Enforceable Through Title V Permit
10. If the District or EPA determine that a Quality improvement Plan is required under 40 CFR 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR part 64.8. [40 CFR Part 64.8] Federally Enforceable Through Title V Permit
11. CTG shall be equipped with a continuously recording emission monitor preceding the SCR module measuring NOx concentration for the purposes of calculating ammonia slip. Permittee shall check, record, and quantify the calibration drift (CD) at two concentration values at least once daily (approximately 24 hours). The calibration shall be adjusted whenever the daily zero or high-level CD exceeds 5%. If either the zero or high-level CD exceeds 5% for five consecutive daily periods, the analyzer shall be deemed out-of-control. If either the zero or high-level CD exceeds 10% during any CD check, analyzer shall be deemed out-of-control. If the analyzer is out-of-control, the permittee shall take appropriate corrective action and then repeat the CD check. [District NSR Rule and District Rule 1080] Federally Enforceable Through Title V Permit
12. The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080] Federally Enforceable Through Title V Permit
13. Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080] Federally Enforceable Through Title V Permit
14. APCO or an authorized representative shall be allowed to inspect, as determined to be necessary, the monitoring devices required by this rule to ensure that such devices are functioning properly. [District Rule 1080, 11.0 and SJ-99-02] Federally Enforceable Through Title V Permit
15. Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with 40 CFR 60.8 (e). [District Rule 1081 and SJ-99-02] Federally Enforceable Through Title V Permit
16. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.0] Federally Enforceable Through Title V Permit
17. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District NSR Rule] Federally Enforceable Through Title V Permit
18. Ammonia shall be injected when the selective catalytic reduction system catalyst temperature exceeds 500 degrees F. Permittee shall monitor and record catalyst temperature during periods of startup. [District NSR Rule and SJ-99-02] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

19. Permittee shall monitor and record exhaust gas temperature at selective catalytic reduction and oxidation catalyst inlets. [District NSR Rule] Federally Enforceable Through Title V Permit

20. Permittee shall comply with all applicable requirements of 40 CFR 60.8 and 40 CFR Subpart Da. [District Rule 4001] Federally Enforceable Through Title V Permit

21. CTG and duct burner shall be fired exclusively on natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry scf of natural gas. [District NSR Rule and SJ-99-02] Federally Enforceable Through Title V Permit

22. The sulfur content of each fuel source shall be: (i) documented in a valid purchase contract, a supplier certification, a tariff sheet or transportation contract or (ii) monitored at least annually using ASTM Methods D4084, D5504, D6228, or Gas Processors Association Standard 2377. [40 CFR 60.334(h)(3); 40 CFR 60.48(g)(1) and District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

23. Results of the CEM system shall be averaged over the applicable time period, using consecutive 15-minute sampling periods. [District Rule 4703, 5.1, 6.4] Federally Enforceable Through Title V Permit

24. Startup is defined as the period beginning with turbine initial firing until the unit meets the lb/hr and ppmv emission limits. An extended startup shall be defined as a startup that occurs after the steam turbine has been shutdown for 72 hours or more. Shutdown is defined the period beginning with initiation of turbine shutdown sequence and ending with cessation of firing of the gas turbine engine. Aborted shutdown is defined the period beginning with initiation of turbine shutdown and ends when the unit has ramped up and is meeting the lb/hr and ppmv emission limits. Startup durations shall not exceed three hours for a regular startup, and 7 hours for an extended startup, per occurrence. Shutdown and aborted shutdown durations shall not exceed one hour, per occurrence. [District Rules 2201, 4001 and 4703, 5.3.3 and SJ-99-02] Federally Enforceable Through Title V Permit

25. During startup or shutdown of any gas turbine engine(s), combined emissions from both gas turbine engines' heat recovery steam generator exhausts (S-3523-1 and -2) shall not exceed any of the following: NOx (as NO2) - 400 lb and CO - 3600 lb in any one hour. If any CTG is in either startup or shutdown during any portion of a clock hour, the facility will be subject to the aforementioned limits during that clock hour. [District Rule 2201] Federally Enforceable Through Title V Permit

26. During an extended startup, the combined emissions from both the CTG and HRSG exhausts shall not exceed either 800 lb NOx or 3600 lb CO per event. [SJ-99-02] Federally Enforceable Through Title V Permit

27. During shutdown, or aborted shutdown, of CTG, the combined emissions from both the CTG and HRSG exhausts shall not exceed either 102.5 lb NOx or 222.0 lb CO per event. [SJ-99-02] Federally Enforceable Through Title V Permit

28. Duct burning must not be employed during startup or shutdown events. [SJ-99-02] Federally Enforceable Through Title V Permit

29. Emission rates from CTG/HRSG, except during startup, shut down or aborted shutdown, shall not exceed any of the following: PM10 - 15.0 lb/hr, SOx (as SO2) - 3.6 lb/hr, NOx (as NO2) - 15.8 lb/hr and 2.5 ppmvd @ 15% O2, VOC - 4.0 lb/hr and 2.0 ppmvd @ 15% O2, CO - 12.5 lb/hr and 4 ppmvd @ 15% O2, ammonia - 10 ppmvd @15% O2. NOx ppmv and lb/hr limits are a one-hour rolling average. Ammonia emission limit is a twenty-four hour rolling average. All other ppmv and lb/hr limits are three-hour rolling averages. [District NSR Rule, District Rules 4001, and 4703, 5.1.2, 5.2 and SJ-99-02] Federally Enforceable Through Title V Permit

30. Emission rates from CTG/HRSG shall not exceed any of the following: PM10 - 360.0 lb/day, SOx (as SO2) - 86.4 lb/day, NOx (as NO2) - 752.0 lb/day, VOC - 184.0 lb/day, and CO - 3948.0 lb/day. [District NSR Rule] Federally Enforceable Through Title V Permit

31. Emission rates from both CTG/HRSG S-3523-1 and -2 combined shall not exceed any of the following: PM10 - 720.0 lb/day, SOx (as SO2) - 172.8 lb/day, NOx (as NO2) - 1103.0 lb/day, VOC - 269.0 lb/day, and CO - 4297 lb/day. [District NSR Rule] Federally Enforceable Through Title V Permit

32. Annual emissions from both CTGs/HRSGs S-3523-1 and -2 combined calculated on a twelve consecutive month rolling basis shall not exceed any of the following: PM10 - 261,960 lb/year , SOx (as SO2) - 57,468 lb/year, NOx (as NO2) - 335,022 lb/year, VOC - 64,478 lb/year, and CO - 831,008 lb/year. [District NSR Rule and SJ-99-02] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

33. Emission rates from the duct burner shall not exceed any of the following limits: 0.20 lb-NOx/MMBtu (expressed as NO2); 0.20 lb-SOx/MMBtu (expressed as SO2); 0.03 lb-PM/MMBtu. [40 CFR 60.42(a)(1); 40 CFR 60.43(b)(2) and (g); 40 CFR 60.44(a)(1)] Federally Enforceable Through Title V Permit

34. NOx emission rate from the duct burner shall not exceed 1.6 lb/MWh based on a 30-day rolling average. [40 CFR 60.44(d)(1)] Federally Enforceable Through Title V Permit

35. Each one-hour period will commence on the hour. The three-hour average will be compiled from the three most recent one-hour periods. Each one-hour period in a twenty-four-hour average for ammonia slip will commence on the hour. The twenty-four-hour average will be calculated starting and ending at twelve-midnight. [District NSR Rule] Federally Enforceable Through Title V Permit

36. Daily emissions shall be compiled for a twenty-four hour period starting and ending at twelve-midnight. Each calendar month in a twelve-consecutive-month rolling emissions shall commence at the beginning of the first day of the month. The twelve-consecutive-month rolling emissions total to determine compliance with annual emissions shall be compiled from the twelve most recent calendar months. [District NSR Rule] Federally Enforceable Through Title V Permit

37. The monitoring of NOx emissions from the duct burner shall be in accordance with the applicable requirements of 40 CFR Subpart Da. [40 CFR 60.49] Federally Enforceable Through Title V Permit

38. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O2 = ((a-(bxc/1,000,000)) x 1,000,000 / b) x d, where a = ammonia injection rate(lb/hr)/17(lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol), c = change in measured NOx concentration ppmv at 15% O2 across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. Alternatively, permittee may utilize a continuous in-stack ammonia monitor, acceptable to the District, to monitor compliance. At least 60 days prior to using a NH3 CEM, the permittee must submit a monitoring plan for District review and approval [District Rules 2520, 9.3.2 and 4102] Federally Enforceable Through Title V Permit

39. Compliance with the short term emission limits (lb/hr and ppmv @ 15% O2) shall be demonstrated annually by District witnessed in situ sampling of exhaust gas by a qualified independent source test firm at full load conditions as follows - NOx: ppmvd @ 15% O2 and lb/hr, CO: ppmvd @ 15% O2 and lb/hr, VOC: ppmvd @ 15% O2 and lb/hr, PM10: lb/hr, and ammonia: ppmvd @ 15% O2. Sample collection to demonstrate compliance with ammonia emission limit shall be based on three consecutive test runs of thirty minutes each. [District Rule 1081 and SJ-99-02] Federally Enforceable Through Title V Permit

40. Compliance with the startup NOx, CO, and VOC mass emission limits shall be demonstrated for one of the CTGs (S-3523-1, or -2) at least once every five years by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. [District Rule 1081] Federally Enforceable Through Title V Permit

41. Compliance with the emission limit for NOx (lb-NOx/MMBtu) for the duct burner shall be demonstrated per the methods of 40 CFR Subpart Da. [40 CFR 60.48Da (g)(1),(j) and (k)] Federally Enforceable Through Title V Permit

42. Any gas turbine with an intermittently operated auxiliary burner shall demonstrate compliance with the auxiliary burner both on and off. [40 CFR 60 Subpart Da, and District Rule 4703, 6.3.3] Federally Enforceable Through Title V Permit

43. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. Official test results and field data collected by source tests required by conditions on this permit shall be submitted to the District within 60 days of testing. [District Rule 1081] Federally Enforceable Through Title V Permit

44. The following test methods shall be used EPA Methods 1-4, PM10: EPA Method 5 (front half and back half), NOx: EPA Method 7E, CO: EPA Method 10, O2: EPA Method 3, 3A, or 20, VOC: EPA Method 18 or 25, ammonia: BAAQMD ST-1B, and fuel gas sulfur content: ASTM D3246. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. [District Rules 1081, 4001, and 4703 and SJ-99-02] Federally Enforceable Through Title V Permit

45. Procedures and methods for determining emissions from the duct burner shall be in accordance with the applicable requirements of 40 CFR Subpart Da. [40 CFR 60.50] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

46. The permittee shall maintain hourly records of NOx, CO, and ammonia emission concentrations (ppmv @ 15% O2), and hourly, daily, and twelve month rolling average records of NOx and CO emissions. [District NSR Rule] Federally Enforceable Through Title V Permit

47. The permittee shall maintain records of SOx lb/hr, lb/day, and lb/twelve month rolling average emission. SOx emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [40 CFR 60.48(g)(1) and District NSR Rule] Federally Enforceable Through Title V Permit

48. Permittee shall maintain the following records for the CTG: occurrence, duration, and type of any startup, shutdown, or malfunction; emission measurements; total daily and annual hours of operation; and hourly quantity of fuel used. [District NSR Rule and 4703 and SJ-99-02] Federally Enforceable Through Title V Permit

49. Permittee shall maintain the following records for the continuous emissions monitoring system (CEMS): the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, maintenance, adjustments, any period of non-operation of any continuous emissions monitor and emission measurements. [District NSR Rule and District Rule 4703 and 40 CFR 60 60.7(b) and SJ-99-02] Federally Enforceable Through Title V Permit

50. Cylinder gas audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit

51. The permittee shall submit a written report to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred . [District Rule 1080] Federally Enforceable Through Title V Permit

52. The reporting requirements pertaining to the testing and monitoring of the duct burner operation shall be in accordance with the applicable requirements of 40 CFR Subpart Da. [40 CFR 60.51] Federally Enforceable Through Title V Permit

53. All records required to be maintained by this permit shall be maintained for a period of five years and shall be made readily available for District inspection upon request. [District NSR Rule and 2520, 9.4.2] Federally Enforceable Through Title V Permit

54. The owners and operators of each affected source shall have an Acid Rain permit and operate in compliance with all permit requirements. [40 CFR 72] Federally Enforceable Through Title V Permit

55. The owners and operators and, to the extent applicable, designated representative of each affected source and each affected unit at the source shall comply with the monitoring requirements as provided in 40 CFR part 75. [40 CFR 75] Federally Enforceable Through Title V Permit

56. The emissions measurements recorded and reported in accordance with 40 CFR part 75 shall be used to determine compliance by the unit with the Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program. [40 CFR 75] Federally Enforceable Through Title V Permit

57. The owners and operators of each source and each affected unit at the source shall: (i) hold allowances, as of the allowance transfer deadline, in the unit's compliance subaccount (after deductions under 40 CFR 73.34(c)) not less than the total annual emissions of sulfur dioxide for the previous calendar year from the unit; and (ii) comply with the applicable Acid Rain emissions limitations for sulfur dioxide. [40 CFR 72] Federally Enforceable Through Title V Permit

58. Each ton of sulfur dioxide emitted in excess of the Acid Rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Act. [40 CFR 72] Federally Enforceable Through Title V Permit

59. Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program. [40 CFR 72] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

60. An allowance shall not be deducted in order to comply with the requirements under 40 CFR part 73, prior to the calendar year for which the allowance was allocated. [40 CFR 73] Federally Enforceable Through Title V Permit

61. The designated representative of an affected unit that has excess emissions in any calendar year shall submit a proposed offset plan, as required under 40 CFR Part 77. [40 CFR 77] Federally Enforceable Through Title V Permit

62. The owners and operators of an affected unit that has excess emissions in any calendar year shall: (i) pay without demand the penalty required, and pay up on demand the interest on that penalty; and (ii) comply with the terms of an approved offset plan, as required by 40 CFR Part 72. [40 CFR 72] Federally Enforceable Through Title V Permit

63. The owners and operators of the each affected unit at the source shall keep on site the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the Administrator or permitting authority: (i) The certificate of representation for the designated representative for the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site beyond such five-year period until such documents are superceded because of the submission of a new certificate of representation changing the designated representative. [40 CFR 72] Federally Enforceable Through Title V Permit

64. The owners and operators of each affected unit at the source shall keep on site each of the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the Administrator or permitting authority; (ii) All emissions monitoring information, in accordance with 40 CFR part 75; (iii) Copies of all reports, compliance certifications and other submissions and all records made or required under the Acid Rain Program; (iv) Copies of all documents used to complete an Acid Rain permit application and any other submission that demonstrates compliance with the requirements of the Acid Rain Program. [40 CFR 72, 40 CFR 75] Federally Enforceable Through Title V Permit

65. The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR 75 Subpart I. [40 CFR 75] Federally Enforceable Through Title V Permit

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

AUTHORITY TO CONSTRUCT

PERMIT NO: S-3523-2-10 **ISSUANCE DATE:** 07/01/2014

LEGAL OWNER OR OPERATOR: ELK HILLS POWER LLC
MAILING ADDRESS: PO BOX 460
TUPMAN, CA 93276

LOCATION: 4026 SKYLINE RD
TUPMAN, CA 93276

SECTION: NE35 **TOWNSHIP:** 30S **RANGE:** 23E

EQUIPMENT DESCRIPTION:
MODIFICATION OF GE FRAME 7 MODEL PG7241FA NATURAL GAS FIRED COMBINED CYCLE GAS TURBINE ENGINE/ELECTRICAL GENERATOR #2 WITH DRY LOW NOX COMBUSTORS, 250.5 MMBTU/HR NATURAL GAS FIRED DUCT BURNER, HEAT RECOVERY STEAM GENERATOR, SELECTIVE CATALYTIC REDUCTION, OXIDATION CATALYST, AND STEAM TURBINE SHARED WITH S-3523-1 (503 MW TOTAL PLANT NOMINAL RATING): INCREASE REGULAR STARTUP TIME FROM 2 TO 3 HOURS, INCREASE EXTENDED STARTUP TIME FROM 6 TO 7 HOURS, AND AUTHORIZE A ONE HOUR DURATION FOR ABORTED SHUTDOWNS

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. Combustion turbine generator (CTG) and electrical generator lube oil vents shall be equipped with mist eliminators to maintain visible emissions from lube oil vents no greater than 5% opacity, except for three minutes in any hour. [District NSR Rule] Federally Enforceable Through Title V Permit
4. CTG shall be equipped with continuously recording non resettable fuel gas flowmeter. [District NSR Rule and SJ-99-02] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
S-3523-2-10 Jul 1 2014 8:48AM – TORID : Joint Inspection NOT Required

5. CTG exhaust after the SCR unit shall be equipped with continuously recording emissions monitors dedicated to this unit for NOx, CO, and O2. Continuous emissions monitors shall meet the requirements of 40 CFR Part 60, Appendices B and F, and 40 CFR Part 75, and shall be capable of monitoring emissions during startups and shutdowns as well as normal operating conditions. If relative accuracy of CEM(s) cannot be demonstrated during startup conditions, CEM results during startup and shutdown events shall be replaced with startup emission rates obtained from source testing to determine compliance with emission limits. [40 CFR 60.334(c), 40 CFR 64.3, District Rules 1080 and 4703, 6.2.1 and District NSR Rule and SJ-99-02] Federally Enforceable Through Title V Permit
6. The CEMS shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the EPA. [40 CFR 64.3 and District Rule 1080, 6.4] Federally Enforceable Through Title V Permit
7. The monitoring of CO emissions with the CEMS shall serve as a surrogate for monitoring of VOC emissions as required by 40 CFR 64 (Compliance Assurance Monitoring). Operation of the unit with CO concentration within the allowable range shall be indicative of VOC concentrations which are less than the allowed maximum. The relationship between concentration of VOC and concentration of CO shall be demonstrated at each annual source test. [40 CFR 64.3] Federally Enforceable Through Title V Permit
8. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR part 64.7. [40 CFR Part 64.7] Federally Enforceable Through Title V Permit
9. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR part 64.9. [40 CFR Part 64.9] Federally Enforceable Through Title V Permit
10. If the District or EPA determine that a Quality improvement Plan is required under 40 CFR 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR part 64.8. [40 CFR Part 64.8] Federally Enforceable Through Title V Permit
11. CTG shall be equipped with a continuously recording emission monitor preceding the SCR module measuring NOx concentration for the purposes of calculating ammonia slip. Permittee shall check, record, and quantify the calibration drift (CD) at two concentration values at least once daily (approximately 24 hours). The calibration shall be adjusted whenever the daily zero or high-level CD exceeds 5%. If either the zero or high-level CD exceeds 5% for five consecutive daily periods, the analyzer shall be deemed out-of-control. If either the zero or high-level CD exceeds 10% during any CD check, analyzer shall be deemed out-of-control. If the analyzer is out-of-control, the permittee shall take appropriate corrective action and then repeat the CD check. [District NSR Rule and District Rule 1080] Federally Enforceable Through Title V Permit
12. The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080] Federally Enforceable Through Title V Permit
13. Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080] Federally Enforceable Through Title V Permit
14. APCO or an authorized representative shall be allowed to inspect, as determined to be necessary, the monitoring devices required by this rule to ensure that such devices are functioning properly. [District Rule 1080, 11.0 and SJ-99-02] Federally Enforceable Through Title V Permit
15. Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with 40 CFR 60.8 (e). [District Rule 1081 and SJ-99-02] Federally Enforceable Through Title V Permit
16. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.0] Federally Enforceable Through Title V Permit
17. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District NSR Rule] Federally Enforceable Through Title V Permit
18. Ammonia shall be injected when the selective catalytic reduction system catalyst temperature exceeds 500 degrees F. Permittee shall monitor and record catalyst temperature during periods of startup. [District NSR Rule and SJ-99-02] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

19. Permittee shall monitor and record exhaust gas temperature at selective catalytic reduction and oxidation catalyst inlets. [District NSR Rule] Federally Enforceable Through Title V Permit

20. Permittee shall comply with all applicable requirements of 40 CFR 60.8 and 40 CFR Subpart Da. [District Rule 4001] Federally Enforceable Through Title V Permit

21. CTG and duct burner shall be fired exclusively on natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry scf of natural gas. [District NSR Rule and SJ-99-02] Federally Enforceable Through Title V Permit

22. The sulfur content of each fuel source shall be: (i) documented in a valid purchase contract, a supplier certification, a tariff sheet or transportation contract or (ii) monitored at least annually using ASTM Methods D4084, D5504, D6228, or Gas Processors Association Standard 2377. [40 CFR 60.334(h)(3); 40 CFR 60.48(g)(1) and District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

23. Results of the CEM system shall be averaged over the applicable time period, using consecutive 15-minute sampling periods. [District Rule 4703, 5.1, 6.4] Federally Enforceable Through Title V Permit

24. Startup is defined as the period beginning with turbine initial firing until the unit meets the lb/hr and ppmv emission limits. An extended startup shall be defined as a startup that occurs after the steam turbine has been shutdown for 72 hours or more. Shutdown is defined the period beginning with initiation of turbine shutdown sequence and ending with cessation of firing of the gas turbine engine. Aborted shutdown is defined the period beginning with initiation of turbine shutdown and ends when the unit has ramped up and is meeting the lb/hr and ppmv emission limits. Startup durations shall not exceed three hours for a regular startup, and 7 hours for an extended startup, per occurrence. Shutdown and aborted shutdown durations shall not exceed one hour, per occurrence. [District Rules 2201, 4001 and 4703, 5.3.3 and SJ-99-02] Federally Enforceable Through Title V Permit

25. During startup or shutdown of any gas turbine engine(s), combined emissions from both gas turbine engines' heat recovery steam generator exhausts (S-3523-1 and -2) shall not exceed any of the following: NOx (as NO2) - 400 lb and CO - 3600 lb in any one hour. If any CTG is in either startup or shutdown during any portion of a clock hour, the facility will be subject to the aforementioned limits during that clock hour. [District NSR Rule] Federally Enforceable Through Title V Permit

26. During an extended startup, the combined emissions from both the CTG and HRSG exhausts shall not exceed either 800 lb NOx or 3600 lb CO per event. [SJ-99-02] Federally Enforceable Through Title V Permit

27. During shutdown, or aborted shutdown, of CTG, the combined emissions from both the CTG and HRSG exhausts shall not exceed either 102.5 lb NOx or 222.0 lb CO per event. [SJ-99-02] Federally Enforceable Through Title V Permit

28. Duct burning must not be employed during startup or shutdown events. [SJ-99-02] Federally Enforceable Through Title V Permit

29. Emission rates from CTG/HRSG, except during startup, shut down or aborted shutdown, shall not exceed any of the following: PM10 - 15.0 lb/hr, SOx (as SO2) - 3.6 lb/hr, NOx (as NO2) - 15.8 lb/hr and 2.5 ppmvd @ 15% O2, VOC - 4.0 lb/hr and 2.0 ppmvd @ 15% O2, CO - 12.5 lb/hr and 4 ppmvd @ 15% O2, ammonia - 10 ppmvd @15% O2. NOx ppmv and lb/hr limits are a one-hour rolling average. Ammonia emission limit is a twenty-four hour rolling average. All other ppmv and lb/hr limits are three-hour rolling averages. [District NSR Rule, District Rules 4001, and 4703, 5.1.2, 5.2 and SJ-99-02] Federally Enforceable Through Title V Permit

30. Emission rates from CTG/HRSG shall not exceed any of the following: PM10 - 360.0 lb/day, SOx (as SO2) - 86.4 lb/day, NOx (as NO2) - 752.0 lb/day, VOC - 184.0 lb/day, and CO - 3948.0 lb/day. [District NSR Rule] Federally Enforceable Through Title V Permit

31. Emission rates from both CTG/HRSG S-3523-1 and -2 combined shall not exceed any of the following: PM10 - 720.0 lb/day, SOx (as SO2) - 172.8 lb/day, NOx (as NO2) - 1103.0 lb/day, VOC - 269.0 lb/day, and CO - 4297 lb/day. [District NSR Rule] Federally Enforceable Through Title V Permit

32. Annual emissions from both CTGs/HRSGs S-3523-1 and -2 combined calculated on a twelve consecutive month rolling basis shall not exceed any of the following: PM10 - 261,960 lb/year , SOx (as SO2) - 57,468 lb/year, NOx (as NO2) - 335,022 lb/year, VOC - 64,478 lb/year, and CO - 831,008 lb/year. [District NSR Rule and SJ-99-02] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

33. Emission rates from the duct burner shall not exceed any of the following limits: 0.20 lb-NOx/MMBtu (expressed as NO2); 0.20 lb-SOx/MMBtu (expressed as SO2); 0.03 lb-PM/MMBtu. [40 CFR 60.42(a)(1); 40 CFR 60.43(b)(2) and (g); 40 CFR 60.44(a)(1)] Federally Enforceable Through Title V Permit

34. NOx emission rate from the duct burner shall not exceed 1.6 lb/MWh based on a 30-day rolling average. [40 CFR 60.44(d)(1)] Federally Enforceable Through Title V Permit

35. Each one-hour period will commence on the hour. The three-hour average will be compiled from the three most recent one-hour periods. Each one-hour period in a twenty-four-hour average for ammonia slip will commence on the hour. The twenty-four-hour average will be calculated starting and ending at twelve-midnight. [District NSR Rule] Federally Enforceable Through Title V Permit

36. Daily emissions shall be compiled for a twenty-four hour period starting and ending at twelve-midnight. Each calendar month in a twelve-consecutive-month rolling emissions shall commence at the beginning of the first day of the month. The twelve-consecutive-month rolling emissions total to determine compliance with annual emissions shall be compiled from the twelve most recent calendar months. [District NSR Rule] Federally Enforceable Through Title V Permit

37. The monitoring of NOx emissions from the duct burner shall be in accordance with the applicable requirements of 40 CFR Subpart Da. [40 CFR 60.49] Federally Enforceable Through Title V Permit

38. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O2 = ((a-(bxc/1,000,000)) x 1,000,000 / b) x d, where a = ammonia injection rate(lb/hr)/17(lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol), c = change in measured NOx concentration ppmv at 15% O2 across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. Alternatively, permittee may utilize a continuous in-stack ammonia monitor, acceptable to the District, to monitor compliance. At least 60 days prior to using a NH3 CEM, the permittee must submit a monitoring plan for District review and approval [District Rules 2520, 9.3.2 and 4102] Federally Enforceable Through Title V Permit

39. Compliance with the short term emission limits (lb/hr and ppmv @ 15% O2) shall be demonstrated annually by District witnessed in situ sampling of exhaust gas by a qualified independent source test firm at full load conditions as follows - NOx: ppmvd @ 15% O2 and lb/hr, CO: ppmvd @ 15% O2 and lb/hr, VOC: ppmvd @ 15% O2 and lb/hr, PM10: lb/hr, and ammonia: ppmvd @ 15% O2. Sample collection to demonstrate compliance with ammonia emission limit shall be based on three consecutive test runs of thirty minutes each. [District Rule 1081 and SJ-99-02] Federally Enforceable Through Title V Permit

40. Compliance with the startup NOx, CO, and VOC mass emission limits shall be demonstrated for one of the CTGs (S-3523-1, or -2) at least once every five years by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. [District Rule 1081] Federally Enforceable Through Title V Permit

41. Compliance with the emission limit for NOx (lb-NOx/MMBtu) for the duct burner shall be demonstrated per the methods of 40 CFR Subpart Da. [40 CFR 60.48Da (g)(1),(j) and (k)] Federally Enforceable Through Title V Permit

42. Any gas turbine with an intermittently operated auxiliary burner shall demonstrate compliance with the auxiliary burner both on and off. [40 CFR 60 Subpart Da, and District Rule 4703, 6.3.3] Federally Enforceable Through Title V Permit

43. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. Official test results and field data collected by source tests required by conditions on this permit shall be submitted to the District within 60 days of testing. [District Rule 1081] Federally Enforceable Through Title V Permit

44. The following test methods shall be used EPA Methods 1-4, PM10: EPA Method 5 (front half and back half), NOx: EPA Method 7E, CO: EPA Method 10, O2: EPA Method 3, 3A, or 20, VOC: EPA Method 18 or 25, ammonia: BAAQMD ST-1B, and fuel gas sulfur content: ASTM D3246. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. [District Rules 1081, 4001, and 4703 and SJ-99-02] Federally Enforceable Through Title V Permit

45. Procedures and methods for determining emissions from the duct burner shall be in accordance with the applicable requirements of 40 CFR Subpart Da. [40 CFR 60.50] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

46. The permittee shall maintain hourly records of NOx, CO, and ammonia emission concentrations (ppmv @ 15% O2), and hourly, daily, and twelve month rolling average records of NOx and CO emissions. [District NSR Rule] Federally Enforceable Through Title V Permit

47. The permittee shall maintain records of SOx lb/hr, lb/day, and lb/twelve month rolling average emission. SOx emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [40 CFR 60.48(g)(1) and District NSR Rule] Federally Enforceable Through Title V Permit

48. Permittee shall maintain the following records for the CTG: occurrence, duration, and type of any startup, shutdown, or malfunction; emission measurements; total daily and annual hours of operation; and hourly quantity of fuel used. [District NSR Rule and 4703 and SJ-99-02] Federally Enforceable Through Title V Permit

49. Permittee shall maintain the following records for the continuous emissions monitoring system (CEMS): the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, maintenance, adjustments, any period of non-operation of any continuous emissions monitor and emission measurements. [District NSR Rule and District Rule 4703 and 40 CFR 60 60.7(b) and SJ-99-02] Federally Enforceable Through Title V Permit

50. Cylinder gas audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit

51. The permittee shall submit a written report to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred . [District Rule 1080] Federally Enforceable Through Title V Permit

52. The reporting requirements pertaining to the testing and monitoring of the duct burner operation shall be in accordance with the applicable requirements of 40 CFR Subpart Da. [40 CFR 60.51] Federally Enforceable Through Title V Permit

53. All records required to be maintained by this permit shall be maintained for a period of five years and shall be made readily available for District inspection upon request. [District NSR Rule and 2520, 9.4.2] Federally Enforceable Through Title V Permit

54. The owners and operators of each affected source shall have an Acid Rain permit and operate in compliance with all permit requirements. [40 CFR 72] Federally Enforceable Through Title V Permit

55. The owners and operators and, to the extent applicable, designated representative of each affected source and each affected unit at the source shall comply with the monitoring requirements as provided in 40 CFR part 75. [40 CFR 75] Federally Enforceable Through Title V Permit

56. The emissions measurements recorded and reported in accordance with 40 CFR part 75 shall be used to determine compliance by the unit with the Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program. [40 CFR 75] Federally Enforceable Through Title V Permit

57. The owners and operators of each source and each affected unit at the source shall: (i) hold allowances, as of the allowance transfer deadline, in the unit's compliance subaccount (after deductions under 40 CFR 73.34(c)) not less than the total annual emissions of sulfur dioxide for the previous calendar year from the unit; and (ii) comply with the applicable Acid Rain emissions limitations for sulfur dioxide. [40 CFR 72] Federally Enforceable Through Title V Permit

58. Each ton of sulfur dioxide emitted in excess of the Acid Rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Act. [40 CFR 72] Federally Enforceable Through Title V Permit

59. Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program. [40 CFR 72] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

60. An allowance shall not be deducted in order to comply with the requirements under 40 CFR part 73, prior to the calendar year for which the allowance was allocated. [40 CFR 73] Federally Enforceable Through Title V Permit

61. The designated representative of an affected unit that has excess emissions in any calendar year shall submit a proposed offset plan, as required under 40 CFR Part 77. [40 CFR 77] Federally Enforceable Through Title V Permit

62. The owners and operators of an affected unit that has excess emissions in any calendar year shall: (i) pay without demand the penalty required, and pay up on demand the interest on that penalty; and (ii) comply with the terms of an approved offset plan, as required by 40 CFR Part 72. [40 CFR 72] Federally Enforceable Through Title V Permit

63. The owners and operators of the each affected unit at the source shall keep on site the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the Administrator or permitting authority: (i) The certificate of representation for the designated representative for the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site beyond such five-year period until such documents are superceded because of the submission of a new certificate of representation changing the designated representative. [40 CFR 72] Federally Enforceable Through Title V Permit

64. The owners and operators of each affected unit at the source shall keep on site each of the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the Administrator or permitting authority; (ii) All emissions monitoring information, in accordance with 40 CFR part 75; (iii) Copies of all reports, compliance certifications and other submissions and all records made or required under the Acid Rain Program; (iv) Copies of all documents used to complete an Acid Rain permit application and any other submission that demonstrates compliance with the requirements of the Acid Rain Program. [40 CFR 72, 40 CFR 75] Federally Enforceable Through Title V Permit

65. The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR 75 Subpart I. [40 CFR 75] Federally Enforceable Through Title V Permit