December 16, 2005

KR-9000

Ms. Nancy Tronaas
Compliance Project Manager
Siting & Environmental Division
California Energy Commission
1516 Ninth Street, MS-2000
Sacramento, CA 95814-5512

Re: Kern River Cogeneration Company (82-AFC-2)
    Petition for Insignificant Amendments

Dear Ms. Tronaas:

This petition is being submitted to allow the other two (2) cogeneration units at Kern River Cogeneration Company (KRCC), Unit 1 and Unit 2, to operate in either simple cycle mode (without the cogeneration of steam), or in the current cogeneration configuration. The addition of simple cycle capability is needed because the steam demand in the adjacent oilfield is gradually declining and to respond to current electricity market conditions for power.

The petition does not require the addition, elimination or modification of any conditions of certification. Furthermore, the proposed change poses no potential for adverse environmental impacts. Under these circumstances, pursuant to Section 1769(a)(2), CEC Staff have the authority to approve the proposed change without full CEC approval providing a 14-day notice is provided to the docket, each commissioner and any party on the post-certification mailing list. If you have any questions, please contact Mervyn Soares at (661) 392-2643 or David Stein of CH2M Hill at (510) 587-7787.

DLB:yh

Attachment
R. T. Muse (w/o attachment)
J. A. Blackmon (w/o attachment)
David Stein, CH2M Hill (w/attachment)
1.0 OVERVIEW

Kern River Cogeneration Company (KRCC) received original approval (82-AFC-2) in September 1983 from the California Energy Commission (CEC) for a 300 megawatt (MW) cogeneration plant in Kern County, California. The facility consists of four (4) 75 MW (nominal) natural-gas fired General Electric Frame 7EA combustion turbines equipped with dry Low NOx (DLN) combustors, four (4) unfired heat recovery steam generators (HRSGs), each capable of generating up to 450,000 pounds per hour (lb/hr) of steam for delivery to the adjacent oilfield operator for use in enhanced oil recovery and ancillary equipment. KRCC is owned jointly by Chevron and Edison Mission Energy. A post-certification petition for the operation of two of the four combustion turbines in simple cycle mode and removal of a requirement to meet explicit cogeneration efficiency criteria was approved by the CEC on April 7, 2004.

This petition is being submitted to allow the other two (2) cogeneration units, Unit 1 and Unit 2, to operate in either simple cycle mode, (without the cogeneration of steam,) or in the current cogeneration configuration. The addition of simple cycle capability is needed because the steam demand in the adjacent oilfield is gradually declining and, in order to respond to current electricity market conditions for the power. It is anticipated that at any given point in time two of the four units will continue to operate in cogeneration mode. However, cogeneration service will be rotated among the four units during each calendar year to ensure that the facility conforms with qualifying facility (QF) requirements.

The petition does not require the addition, elimination or modification of any conditions of certification. Furthermore, the proposed change poses no potential for adverse environmental impacts. Under these circumstances, pursuant to Section 1769 (a) (2), CEC Staff have the authority to approve the proposed change without full CEC approval providing a 14-day notice is provided to the docket, each commissioner and any party on the post-certification mailing list.

This petition is consistent with recent requests approved by both the San Joaquin Valley Air Pollution Control District (SJVAPCD) and the United States Environmental Protection
Agency (EPA). Appendix A includes the complete copy of the SJVAPCD engineering analysis and revised Authorities to Construct and Appendix B includes a copy of the letter requesting EPA confirmation that Prevention of Significant Deterioration (PSD) review is not required. A confirmation letter from EPA is expected in late December. The CEC will be provided with a copy of the EPA confirmation letter as soon as it is received.

This petition for a post-certification amendment of KRCC is being submitted under the provisions of Section 1769 of Title 20, California Administrative Code (CEC Rules of Practice and Procedure and Power Plant Site Certification Regulations) to seek a minor modification to the air quality conditions of certification. The petition is organized to address the informational requirements of Section 1769 in the order they appear in the section. The requirement appears in **bold italics** followed by a narrative response.

### 2.0 INFORMATION REQUIRED BY SECTION 1769

**(A) A complete description of the proposed modifications, including new language for any conditions that will be affected**

Kern River Cogeneration Company (KRCC) is a cogeneration facility located in the Kern River oilfield near Bakersfield, CA. The facility employs four (4) General Electric Frame 7EA combustion turbines (CTs) and four (4) unfired heat recovery steam generators (HRSGs) to cogenerate 300 MW (nominal rating) of electricity and 1.8 million pounds per hour of steam for enhanced oil recovery. Each CT/HRSG generates approximately \( \frac{1}{4} \) of the total steam and electricity output. Each CT is equipped with Dry Low NOx (DLN) combustor technology capable of meeting the current SJVAPCD Rule 4703 NOx limit for gas turbines of 16.4 ppmv at 15% O2, dry and a CO emissions limit of 25 ppmv at 15% O2, dry.

As a result of gradually declining steam demand and negotiations regarding the KRCC electricity contract, it has been determined that all of the KRCC CT units must be able to operate in either cogeneration or simple cycle mode. As a result, KRCC is requesting post-certification approval to operate Unit 1 and Unit 2 in either cogeneration or simple cycle mode.
No additional physical construction is needed to facilitate the addition of simple cycle operation to Units 1 and 2. Each CT discharges to a HRSG through a transition section that is equipped with a gas-tight bypass stack. In order to operate in simple cycle, the bypass stack damper would be repositioned to block off the HRSG, directing the CT exhaust through the bypass stack to the atmosphere. Since the Dry-Low NOx (DLN) operation is unaffected by the positioning of the bypass damper, the change to simple cycle operation will not impact the effectiveness of the current air pollution control system. As a result, during simple cycle operations there will not be any change in normal short-term CT emission rates.

The current license is based on a continuous, 24-hr day operation. While KRCC does not propose to specifically restrict its operating schedule in the future, it is anticipated that the power host will operate two units of the four KRCC units in simple cycle on a dispatch schedule that is anticipated to be substantially fewer hours than historical operations. The other two KRCC units would continue to cogenerate steam to service Chevron's existing thermally enhanced oil recovery operation. KRCC will annually cycle all four units in both modes of operation. At the present time, we envision that units that are dispatched to operate in simple cycle mode would operate in response to peak power demands occurring during the normal work week, Monday through Friday, and would not operate on weekends or holidays. Instead of a 24-hr operation, it is more likely that these two units would ultimately operate for no more than a 6 to 8 hr/day. We also anticipate that the units will operate more frequently in the summer peak power period, April through October, and less during the off-peak period of the year, November through March. The addition of simple cycle operation will increase the number of startups and shutdowns to one or two per day for the affected CT. These emission impacts have been previously evaluated under the previous request for Units 3 and 4 and found to be insignificant.

(B) A discussion of the necessity for the proposed modifications

The modifications are necessary in order to allow KRCC to continue to sell power while adjusting to a gradually declining steam demand and need for dispatchable power by the utilities. KRCC units must maintain QF status on a calendar year basis for the facility, but otherwise KRCC units must also be available for dispatchable simple cycle operation.
(C) If the modification is based on information that was known by the petitioner during the certification proceeding, an explanation why the issue was not raised at that time

This need for dispatchable power and maintenance of unit-specific cogeneration criteria has come about as a result of clarifications regarding the terms of the proposed power purchase agreement that will require KRCC to remain as a QF facility. The modification is not based on information that was known to the petitioner at the time of the certification.

(D) If the modification is based on new information that changes or undermines the assumptions, rationale, findings, or other bases of the final decision, an explanation of why the change should be permitted

- The proposed modification is based on new information that was not available at the time of the original decision. First, demand for steam from KRCC is gradually declining and KRCC will not be able to continue to produce and sell all of the steam it is capable of generating. Second, the electricity host has indicated that its future resource needs are focused on peaking, not baseload capacity. The host has therefore asked that any two of the four KRCC units be made available on a dispatchable basis. However each of the four KRCC units must also continue to meet contract-specific QF status on a calendar year basis.

Although there will be no changes in any of the existing air emission limits in the CEC license, operation in simple cycle mode will modify the dispersion characteristics of the two affected units. When Units 1 and 2 are operated in simple cycle mode, the exhaust gas will be discharged through a slightly shorter bypass stack with a higher temperature and a marginally lower stack exit velocity. A comprehensive analysis of these potential changes to exhaust gas stack discharge conditions has been performed by SJVAPCD. The analysis demonstrates that even under worst-case assumptions there will be a beneficial impact to ambient air quality.
(E) An analysis of the impacts the modification may have on the environment and proposed measures to mitigate any significant adverse impacts

A complete analysis of the proposed changes has been performed and approved by the SJVAPCD. The engineering analysis and final Authorities to Construct are include in Appendix A. The air quality impact analysis demonstrates that beneficial air quality impacts will result from the proposed changes. Furthermore, the original KRCC facility was fully mitigated with emission offsets. Since the proposed change will not increase allowable daily or annual emissions from the facility, no additional air quality mitigation is needed. Based on the above, the proposed change will not cause any significant air quality impacts. To the contrary, the air quality impacts are actually beneficial.

No other environmental issues or concerns are impacted by the proposed change and no additional analysis is needed for other environmental issue areas.

(F) A discussion of the impact of the modification on the facility’s ability to comply with applicable laws, ordinances, regulations, and standards

The proposed changes will comply with all applicable laws, ordinances, regulations and standards as demonstrated by the attached SJVAPCD engineering analysis and approval (Appendix A). The applicant has also requested that EPA formally acknowledge that the proposed changes do not constitute a major modification that would be subject to full PSD review. A copy of this request is included (Appendix B). A copy of EPA’s response will be forwarded to the CEC under separate cover. While this response will be informative, it is not a requirement for the CEC to process this petition request as KRCC will comply with all applicable federal laws, ordinances, regulations and standards as it has since it began operation.

(G) A discussion of how the modification affects the public
The proposed revisions will have a beneficial impact on the public since air quality impacts will be lessened by the proposed change to KRCC.

(H) A list of property owners potentially affected by the modification

There are no property owners that will be affected by the proposed modification. A single property owner is located within 1000 feet of the KRCC site, Chevron. The applicable contact information for Chevron is provided below:

Chevron

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(I) A discussion of the potential effect on near by property owners, the public and the parties in the application proceedings

The proposed revisions will have a positive impact on near by property owners, since air quality impacts will be lessened by the proposed change to KRCC.

3.0 SCHEDULE

The request for EPA confirmation of the PSD nonapplicability has been submitted (see Appendix B) and a formal confirmation response is expected in late December 2005. A copy of the letter will be provided as soon as it is received. The SJVAPCD has approved the proposed change (see Appendix A).
We respectfully request that the CEC process this petition to approve the described change in the method of operation of the facility expeditiously as is possible, so that KRCC has the ability to commence simple cycle operation of any of the four units.

4.0 PETITION CONTACTS

Questions regarding this petition should be directed to:

Mervyn Soares
HES Manager
Kern River Cogeneration Company
P.O. Box 81438
Bakersfield, CA 93380
Phone: (661) 392-2643
Fax: (661) 392-2990
Email: masoares@sycamore.com

David A. Stein, PE
Vice President
CH2M HILL
155 Grand Avenue
Oakland, CA 94612
Phone: (510) 587-7787
Fax: (510) 622-9177
Email: dstein@ch2m.com

5.0 SUMMARY

This minor amendment will require no changes to existing conditions of certification, will have no significant environmental impacts and will have a beneficial effect on air quality.

Pursuant to Section 1769 (a) (2) of the CEC Siting Regulations, CEC staff is authorized to approve this proposed change with full Commission approval, provided a 14-day notice is submitted to the docket, each Commissioner and any party on the post-certification mailing list.

Expedited processing of this petition is respectfully requested..
APPENDIX A

SJVAPCD ENGINEERING ANALYSIS AND FINAL AUTHORITIES TO CONSTRUCT
APPENDIX B

REQUEST FOR EPA PSD NONAPPLICABILITY CONFIRMATION
1.0 OVERVIEW

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3.0 **SCHEDULE**

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Fax: (510) 622-9177
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5.0 SUMMARY

This minor amendment will require no changes to existing conditions of certification, will have no significant environmental impacts and will have a beneficial effect on air quality.

Pursuant to Section 1769 (a) (2) of the CEC Siting Regulations, CEC staff is authorized to approve this proposed change with full Commission approval, provided a 14-day notice is submitted to the docket, each Commissioner and any party on the post-certification mailing list.

Expedited processing of this petition is respectfully requested.
APPENDIX A

SJVAPCD ENGINEERING ANALYSIS AND FINAL AUTHORITIES TO CONSTRUCT
Dear Mr. Soares:

The Air Pollution Control Officer has issued Authorities to Construct (S-88-1-14, '2-14, '3-14, and '4-14) with Certificates of Conformity to Kern River Cogeneration Company. The project authorizes the addition of simple cycle operation, addition of a 1-hr CO emissions limit, and revised source testing and sampling provisions for gas turbine cogeneration systems. The facility is located at the center of the north 1/2 of Section 32, T 28S, R28E in the Central Kern County oil fields.

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.

Enclosed are the Authorities to Construct, invoice, and engineering evaluation with attachments. The application and proposal were sent to US EPA Region IX on September 20, 2005. All comments received have been addressed by the District. A summary of the comments and the District's response to each comment is included below.

EPA Verbal Comment:

Please ensure that the conditions #22 and #45 recently added to the Title V PTOs, as recommended by EPA, are included as conditions on the ATCs issued in project 1053208. The conditions allow for a CEMS Relative Accuracy Test Audit (RATA) on only one of the four turbines per year with a different turbine RATA tested each year for four years. The other three turbines not RATA tested are required to be Relative Accuracy Audit (RAA) tested and are subject to the annual source testing requirements of Rule 4703. In the event that a turbine fails RAA testing, RATA testing is required within 60 days. Additionally, a cylinder gas audit (CGA) must be performed on each turbine not RATA or RAA tested in any given quarter.

District Response:

The requested conditions have been added to ATC's S-88-1-14, '2-14, '3-14, and '4-14.

David L. Crow
Executive Director / Air Pollution Control Officer
ATC Condition #23:
The NOx and CO2 CEMS shall meet the requirements in 40CFR60, Appendix B Performance Specifications 2 and 3 and Appendix F Procedure 1. The requirements in 40CFR60, Appendix F Procedure 1 shall be met through the following EPA and District approved modified procedures: 1) annual RATA testing of at least one CGT (S-88-1, -2, -3 or -4), and rotate the unit tested so that all four units are tested over four years, 2) annual RAA testing for the three CGT units for which the annual RATA testing is not performed, 3) if any of the CGT units fail the RAA testing, they must have a RATA test within 60 days, and 4) for every quarter that RATA or RAA testing is not performed, a CGA is to be performed for each CGT unit. [40 CFR 60.334(b)(1) and District Rules 1080, 6.3, 6.5, 6.6, & 7.2, and 4703, 6.2.3]

ATC Condition #46:
Performance testing shall be conducted annually to measure NOx and CO emission concentrations using the following methods: EPA Methods 7E or 20 for NOx emissions, EPA Methods 10 or 10B for CO emissions, EPA Methods 3, 3A or 20 for Oxygen content of the exhaust gas. The performance tests shall be performed between 90 and 100 percent of peak (or the highest physically achievable) load. [40 CFR 60.335(a), (b)(7) and District Rule 4703, 6.3.1, 6.4.1, 6.4.2, & 6.4.3]

EPA Verbal Comment:
Please delete ATC condition references to County Rules 108 and 109 which are no longer in the SIP.

District Response
Reference to County Rules 108 and 109 have been deleted.

Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Thomas Goff, Permit Services Manager, at (661) 326-6900.

Sincerely,

David Warner
Director of Permit Services

Enclosures
rue

c: Thomas Goff, Permit Services Manager
AUTHORITY TO CONSTRUCT

PERMIT NO: S-88-1-14

LEGAL OWNER OR OPERATOR: KERN RIVER COGENERATION CO
MAILING ADDRESS: P O BOX 80478
BAKERSFIELD, CA 93380-0478

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: 32 TOWNSHIP: 28S RANGE: 28E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR (CTG) WITH DRY LOW NOX COMBUSTORS; ALLOW DISCHARGING OF EXHAUST THROUGH BYPASS STACK WHEN OPERATING IN SIMPLE CYCLE MODE IN ADDITION TO CURRENTLY APPROVED DISCHARGING OF EXHAUST THROUGH UNFIRED 450,000 LB/HR HEAT RECOVERY STEAM GENERATOR WHEN IN COGENERATION MODE (KRCC UNIT #1), ADD 1-HOUR AVERAGE CO EMISSIONS LIMIT OF 200 LB/HR

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 NSR Rule] 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. CTG shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR 60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 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.

DAVID L. CROW, Executive Director / APCO

DAVID WARNER, Director of Permit Services
4. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)ppmvd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 (100% x (3412 Btu/kW-hr)/(Actual Heat Rate at HHV, Btu/kW-hr)) or EFF2 (EFFmfr x (LHV/HHV)) where actual heat rate is a ratio of the heat input to power output taking into account the manufacturer's listed turbine efficiency, HHV is the higher heating value of the fuel, LHV is the lower heating value of the fuel, and EFFmfr is the manufacturer's continuous rated percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable Through Title V Permit

5. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule 110 (Madera); District Rule 1081] Federally Enforceable Through Title V Permit

6. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

7. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(b)] Federally Enforceable Through Title V Permit

8. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

9. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2) concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4] Federally Enforceable Through Title V Permit

10. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to 15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit

11. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V Permit

12. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

13. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

14. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

15. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

16. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

17. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
18. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

20. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

21. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: 40 CFR 60.332 (b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

22. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b),(c) and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit

23. The NOx and CO2 CEMS shall meet the requirements in 40CFR60, Appendix B Performance Specifications 2 and 3 and Appendix F Procedure 1. The requirements in 40CFR60, Appendix F Procedure 1 shall be met through the following EPA and District approved modified procedures: 1) annual RATA testing of at least one CGT (S-88-1, -2, -3 or -4), and rotate the unit tested so that all four units are tested over four years, 2) annual RAA testing for the three CGT units for which the annual RATA testing is not performed, 3) if any of the CGT units fail the RAA testing, they must be RATA tested within 60 days, and 4) for every quarter that RATA or RAA testing is not performed, a CGA is to be performed for each CGT unit. [40 CFR 60.334(b)(1) and District Rules 1080, 6.3, 6.5, 6.6, & 7.2, and 4703, 6.2.3]

24. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

25. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

26. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions (computed in accordance with 40 CFR 60.13(h)), nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard. [District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

28. The written report for each calendar quarter shall also include: C. 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; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [District Rule 1080, 8.0; PSD SJ 84-01, X.D.3 and X.D.5.a through e] Federally Enforceable Through Title V Permit

29. The CTG combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
30. Each CTG shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

31. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

32. When operating in cogeneration mode, exhaust gas ducting from CTG through HRSG's to the atmosphere shall be gas-tight. [District NSR Rule]

33. Bypass stack valve preceding each HRSG shall be designed to be gas-tight to the atmosphere when exhaust is discharged through HRSG and shall be designed to be gas-tight to the HRSG when exhaust is discharged through the bypass stack. [District NSR Rule]

34. Each CTG shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

35. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

36. HRSG exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081]

37. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

38. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CTG fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

39. Emission rates from CTG shall not exceed any of the following: PM10 - 5.0 lb/hr, SOx (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CTG shall not exceed any of the following: PM10 - 120.0 lb/day, SOx (as SO2) - 21.6 lb/day, NOx (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Emission rates from CTG, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, 140 lb/hr of CO on a 2-hr avg, or 200 lb/hr of CO on a 1-hr avg. [District Rule 2201]

43. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

44. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

45. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Performance testing shall be conducted annually to measure NOx and CO emission concentrations using the following methods: EPA Methods 7E or 20 for NOx emissions, EPA Methods 10 or 10B for CO emissions, EPA Methods 3, 3A or 20 for Oxygen content of the exhaust gas. The performance tests shall be performed between 90 and 100 percent of peak (or the highest physically achievable) load. [40 CFR 60.335(a), (b)(7) and District Rule 4703, 6.3.1, 6.4.1, 6.4.2, & 6.4.3] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
47. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

48. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CTG flue gas stream during both simple cycle and cogeneration modes, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

49. All continuous emissions monitoring systems shall be calibrated and operated during both simple cycle and cogeneration modes according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit

50. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

51. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

52. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

53. Startup and shutdown of CTG, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

54. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

55. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

56. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

59. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
60. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1320.5(a) and PSD SJ 84-01] Federally Enforceable Through Title V Permit

61. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gases and furnish the District, the California ARB and the USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

62. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10 [PSD SJ 84-01] Federally Enforceable Through Title V Permit

63. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an acceptable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

64. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

65. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(e). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

66. This facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and G of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

67. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

68. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit

69. No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (12/17/92), by using EPA method 9. If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit

70. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-88-2-14

ISSUANCE DATE: 11/15/2005

LEGAL OWNER OR OPERATOR: KERN RIVER COGENERATION CO

MAILING ADDRESS: P O BOX 80478

BAKERSFIELD, CA 93380-0478

LOCATION: HEAVY OIL CENTRAL

CA

SECTION: 32 TOWNSHIP: 28S RANGE: 28E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR (CTG) WITH DRY LOW NOX COMBUSTORS: ALLOW DISCHARGING OF EXHAUST THROUGH BYPASS STACK WHEN OPERATING IN SIMPLE CYCLE MODE IN ADDITION TO CURRENTLY APPROVED DISCHARGING OF EXHAUST THROUGH UNFIRED 450,000 LB/HR HEAT RECOVERY STEAM GENERATOR WHEN IN COGENERATION MODE (KRCC UNIT #2), ADD 1-HOUR AVERAGE CO EMISSIONS LIMIT OF 200 LB/HR

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 NSR Rule] 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. CTG shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR 60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 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.

DAVID L. CROW, Executive Director / APCO

DAVID WARNER, Director of Permit Services

Southern Regional Office • 2700 M Street, Suite 275 • Bakersfield, CA 93301-2370 • (661) 326-6900 • Fax (661) 326-6985
4. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)ppmvd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 (100%×(3412 Btu/kW-hr)/(Actual Heat Rate at HHV, Btu/kW-hr)) or EFF2 ([EFFfmt] x (LHV/HHV)) where actual heat rate is a ratio of the heat input to power output taking into account the manufacturer's listed turbine efficiency, HHV is the higher heating value of the fuel, LHV is the lower heating value of the fuel, and EFFfmt is the manufacturer's continuous rated percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable Through Title V Permit

5. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule 110 (Madera); District Rule 1081] Federally Enforceable Through Title V Permit

6. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

7. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit

8. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

9. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2) concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4] Federally Enforceable Through Title V Permit

10. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to 15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit

11. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V Permit

12. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

13. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

14. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

15. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

16. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

17. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
18. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

20. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

21. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: 40 CFR 60.332 (b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

22. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b),(c) and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit

23. The NOx and CO2 CEMS shall meet the requirements in 40CFR60, Appendix B Performance Specifications 2 and 3 and Appendix F Procedure 1. The requirements in 40CFR60, Appendix F Procedure 1 shall be met through the following EPA and District approved modified procedures: 1) annual RATA testing of at least one CGT (S-88-1, -2, -3 or -4), and rotate the unit tested so that all four units are tested over four years, 2) annual RAA testing for the three CGT units for which the annual RATA testing is not performed, 3) if any of the CGT units fail the RAA testing, they must have a RATA test within 60 days, and 4) for every quarter that RATA or RAA testing is not performed, a CGA is to be performed for each CGT unit. [40 CFR 60.334(b)(1) and District Rules 1080, 6.3, 6.5, 6.6, & 7.2, and 4703, 6.2.3]

24. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

25. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

26. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions (computed in accordance with 40 CFR 60.13(h)), nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard. [District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

28. The written report for each calendar quarter shall also include: C. 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; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [District Rule 1080, 8.0; PSD SJ 84-01, X.D.3 and X.D.5.a through e] Federally Enforceable Through Title V Permit

29. The CTG combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
30. Each CTG shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

31. Permit unit shall include one unifired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

32. When operating in cogeneration mode, exhaust gas ducting from CTG through HRSG’s to the atmosphere shall be gas-tight. [District NSR Rule]

33. Bypass stack valve preceding each HRSG shall be designed to be gas-tight to the atmosphere when exhaust is discharged through HRSG and shall be designed to be gas-tight to the HRSG when exhaust is discharged through the bypass stack. [District NSR Rule]

34. Each CTG shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

35. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

36. HRSG exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081]

37. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

38. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CTG fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

39. Emission rates from CTG shall not exceed any of the following: PM10 - 5.0 lb/hr, SOx (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CTG shall not exceed any of the following: PM10 - 120.0 lb/day, SOx (as SO2) - 21.6 lb/day, NOx (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1,056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Emission rates from CTG, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmv@ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmv@ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, 140 lb/hr of CO on a 2-hr avg, or 200 lb/hr of CO on a 1-hr avg. [District Rule 2201]

43. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

44. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

45. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Performance testing shall be conducted annually to measure NOx and CO emission concentrations using the following methods: EPA Methods 7E or 20 for NOx emissions, EPA Methods 10 or 10B for CO emissions, EPA Methods 3, 3A or 20 for Oxygen content of the exhaust gas. The performance tests shall be performed between 90 and 100 percent of peak (or the highest physically achievable) load. [40 CFR 60.335(a), (b)(7) and District Rule 4703, 6.3.1, 6.4.1, 6.4.2, & 6.4.3] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
47. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

48. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CTG flue gas stream during both simple cycle and cogeneration modes, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

49. All continuous emissions monitoring systems shall be calibrated and operated during both simple cycle and cogeneration modes according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit

50. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

51. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

52. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

53. Startup and shutdown of CTG, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

54. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

55. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

56. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

59. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
60. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Sections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1320.5(a) and PSD SJ 84-01] Federally Enforceable Through Title V Permit

61. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gases and furnish the District, the California ARB and the USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

62. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10 [PSD SJ 84-01] Federally Enforceable Through Title V Permit

63. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approvable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

64. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

65. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(e). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

66. This facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and G (of this regulation). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

67. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

68. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit

69. No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (12/17/92), by using EPA method 9. If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit

70. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
San Joaquin Valley Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-88-3-14
ISSUANCE DATE: 11/15/2005

LEGAL OWNER OR OPERATOR: KERN RIVER COGENERATION CO
MAILING ADDRESS: P O BOX 80478
BAKERSFIELD, CA 93380-0478

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: 32 TOWNSHIP: 28S RANGE: 28E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR (CTG) WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #3): REVISE STACK SAMPLING CONDITION TO PERTAIN ONLY TO HRSG STACK

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 NSR Rule] 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. CTG shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR 60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit

4. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)ppmvd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 {100%x(3412 Btu/kW-hr)/(Actual Heat Rate at HHV, Btu/kW-hr)} or EFF2 {EFFmrfr x (LHV/HHV)} where actual heat rate is a ratio of the heat input to power output taking into account the manufacturer's listed turbine efficiency, HHV is the higher heating value of the fuel, LHV is the lower heating value of the fuel, and EFFmrfr is the manufacturer's continuous rated percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable Through Title V Permit

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 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.

DAVID L. CROW, Executive Director / APCO

DAVID WARNER, Director of Permit Services
S-88-3-14 / Rev 8/26/06 / 9404-AM / BDLHHR / Jack Warner, NOT REQUIRED
Southern Regional Office  •  2700 M Street, Suite 275  •  Bakersfield, CA 93301-2370  •  (661) 326-6900  •  Fax (661) 326-6985
5. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule 110 (Madera); District Rule 1081] Federally Enforceable Through Title V Permit

6. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

7. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit

8. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

9. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2) concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4] Federally Enforceable Through Title V Permit

10. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to 15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit

11. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V Permit

12. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

13. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

14. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

15. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

16. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

17. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

18. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
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22. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b),(c) and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit

23. The NOx and CO2 CEMS shall meet the requirements in 40CFR60, Appendix B Performance Specifications 2 and 3 and Appendix F Procedure 1. The requirements in 40CFR60, Appendix F Procedure 1 shall be met through the following EPA and District approved modified procedures: 1) annual RATA testing of at least one CGT (S-88-1, -2, -3 or -4), and rotate the unit tested so that all four units are tested over four years, 2) annual RAA testing for the three CGT units for which the annual RATA testing is not performed, 3) if any of the CGT units fail the RAA testing, they must have a RATA test within 60 days, and 4) for every quarter that RATA or RAA testing is not performed, a CGA is to be performed for each CGT unit. [40 CFR 60.334(b)(1) and District Rules 1080, 6.3, 6.5, 6.6, & 7.2, and 4703, 6.2.3]

24. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

25. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

26. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions (computed in accordance with 40 CFR 60.13(h)), nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard. [District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

28. The written report for each calendar quarter shall also include: C. 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; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [District Rule 1080, 8.0; PSD SJ 84-01, X.D.3 and X.D.5.a through e] Federally Enforceable Through Title V Permit

29. The CGT combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

30. Each CGT shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

31. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

32. When operating in cogeneration mode, exhaust gas ducting from CTG through HRSG's to the atmosphere shall be gas tight. [District NSR Rule]

CONDITIONS CONTINUE ON NEXT PAGE
33. Bypass stack valve preceding each HRSG shall be designed to be gas-tight to the atmosphere when exhaust is discharged through HRSG and shall be designed to be gas-tight to the HRSG when exhaust is discharged through the bypass stack. [District NSR Rule]

34. Each CTG shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

35. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

36. HRSG exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081]

37. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

38. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CTG fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

39. Emission rates from CTG shall not exceed any of the following: PM10 - 5.0 lb/hr, SOx (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CTG shall not exceed any of the following: PM10 - 120.0 lb/day, SOx (as SO2) - 21.6 lb/day, NOx (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Emission rates from CTG, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, 140 lb/hr of CO on a 2-hr avg, or 200 lb/hr of CO on a 1-hr avg. [District Rule 2201]

43. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

44. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

45. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Performance testing shall be conducted annually to measure NOx and CO emission concentrations using the following methods: EPA Methods 7E or 20 for NOx emissions, EPA Methods 10 or 10B for CO emissions, EPA Methods 3, 3A or 20 for Oxygen content of the exhaust gas. The performance tests shall be performed between 90 and 100 percent of peak (or the highest physically achievable) load. [40 CFR 60.335(a), (b)(7) and District Rule 4703, 6.3.1, 6.4.1, 6.4.2, & 6.4.3] Federally Enforceable Through Title V Permit

47. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

48. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CTG flue gas stream during both simple cycle and cogeneration modes, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
49. All continuous emissions monitoring systems shall be calibrated and operated during both simple cycle and cogeneration modes according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit

50. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

51. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

52. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

53. Startup and shutdown of CTG, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

54. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

55. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

56. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

59. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

60. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1320.5(a) and PSD SJ 84-01] Federally Enforceable Through Title V Permit

61. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gases and furnish the District, the California ARB and the USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
62. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10 [PSD SJ 84-01] Federally Enforceable Through Title V Permit.

63. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approvable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit.

64. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit.

65. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(e). [PSD SJ 84-01] Federally Enforceable Through Title V Permit.

66. This facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit.

67. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit.

68. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit.

69. No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (12/17/92), by using EPA method 9. If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit.

70. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
AUTHORITY TO CONSTRUCT

PERMIT NO: S-88-4-14

LEGAL OWNER OR OPERATOR: KERN RIVER COGENERATION CO
MAILING ADDRESS: P O BOX 80478
BAKERSFIELD, CA 93380-0478

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: 32 TOWNSHIP: 28S RANGE: 28E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR (CTG) WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #4) : REVISE STACK SAMPLING CONDITION TO PERTAIN ONLY TO HRSG STACK

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 NSR Rule] 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. CTG shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR 60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit

4. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)ppmvd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 {100%x(3412 Btu/kW-hr)/(Actual Heat Rate at HHV, Btu/kW-hr)} or EFF2 {EFFmfr x (LHV/HHV)} where actual heat rate is a ratio of the heat input to power output taking into account the manufacturer’s listed turbine efficiency, HHV is the higher heating value of the fuel, LHV is the lower heating value of the fuel, and EFFmfr is the manufacturer’s continuous rated percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable Through Title V Permit

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 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.

DAVID L. CROW, Executive Director / APCO

770-4-14 Nov 12 2015 9:49AM - EDGEBER Joint Inspection NOT Required
Southern Regional Office • 2700 M Street, Suite 275 • Bakersfield, CA 93301-2370 • (661) 326-6900 • Fax (661) 326-6985
5. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule 110 (Madera); District Rule 1081] Federally Enforceable Through Title V Permit

6. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

7. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit

8. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

9. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2) concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4] Federally Enforceable Through Title V Permit

10. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to 15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit

11. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V Permit

12. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

13. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix F, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

14. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

15. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

16. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

17. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

18. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
20. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

21. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: 40 CFR 60.332 (b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

22. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b),(c) and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit

23. The NOx and CO2 CEMS shall meet the requirements in 40CFR60, Appendix B Performance Specifications 2 and 3 and Appendix F Procedure 1. The requirements in 40CFR60, Appendix F Procedure 1 shall be met through the following EPA and District approved modified procedures: 1) annual RATA testing of at least one CGT (S-88-1,-2,-3 or -4), and rotate the unit tested so that all four units are tested over four years, 2) annual RAA testing for the three CGT units for which the annual RATA testing is not performed, 3) if any of the CGT units fail the RAA testing, they must have a RATA test within 60 days, and 4) for every quarter that RATA or RAA testing is not performed, a CGA is to be performed for each CGT unit. [40 CFR 60.334(b)(1) and District Rules 1080, 6.3, 6.5, 6.6, & 7.2, and 4703, 6.2.3]

24. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

25. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

26. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions (computed in accordance with 40 CFR 60.13(h)), nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard. [District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

28. The written report for each calendar quarter shall also include: C. 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; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [District Rule 1080, 8.0; PSD SJ 84-01, X.D.3 and X.D.5.a through e] Federally Enforceable Through Title V Permit

29. The CGT combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

30. Each CGT shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

31. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

32. When operating in cogeneration mode, exhaust gas ducting from CTG through HRSG's to the atmosphere shall be gas-tight. [District NSR Rule]

CONDITIONS CONTINUE ON NEXT PAGE
33. Bypass stack valve preceding each HRSG shall be designed to be gas-tight to the atmosphere when exhaust is discharged through HRSG and shall be designed to be gas-tight to the HRSG when exhaust is discharged through the bypass stack. [District NSR Rule]

34. Each CTG shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

35. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

36. HRSG exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081]

37. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

38. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CTG fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

39. Emission rates from CTG shall not exceed any of the following: PM10 - 5.0 lb/hr, SOX (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CTG shall not exceed any of the following: PM10 - 120.0 lb/day, SOX (as SO2) - 21.6 lb/day, NOX (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Emission rates from CTG, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, 140 lb/hr of CO on a 2-hr avg, or 200 lb/hr of CO on a 1-hr avg. [District Rule 2201]

43. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

44. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

45. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Performance testing shall be conducted annually to measure NOx and CO emission concentrations using the following methods: EPA Methods 7E or 20 for NOx emissions, EPA Methods 10 or 10B for CO emissions, EPA Methods 3, 3A or 20 for Oxygen content of the exhaust gas. The performance tests shall be performed between 90 and 100 percent of peak (or the highest physically achievable) load. [40 CFR 60.335(a), (b)(7) and District Rule 4703, 6.3.1, 6.4.1, 6.4.2, & 6.4.3] Federally Enforceable Through Title V Permit

47. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

48. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CTG flue gas stream during both simple cycle and cogeneration modes, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
49. All continuous emissions monitoring systems shall be calibrated and operated during both simple cycle and
cogeneration modes according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E.
CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01
X.D.2] Federally Enforceable Through Title V Permit

50. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required
by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080
and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

51. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at
the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080
and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

52. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines,
witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080
and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

53. Startup and shutdown of CTG, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and
two hours, respectively, per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

54. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates
and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

55. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained
and such records shall be made readily available for District inspection upon request for a period of five years. [District
Rule 1080] Federally Enforceable Through Title V Permit

56. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this
permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to
minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution
control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in
CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall
be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial
failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the
estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized
to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise
constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause.
[PSD SJ 84-01] Federally Enforceable Through Title V Permit

59. The owner and operator of the proposed project shall construct and operate the proposed stationary source in
compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State
and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

60. Any requirements established by this permit for the gathering and reporting of information are not subject to review
by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is
not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and
3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit
are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4),
(11) and 5 CFR Section 1320.5(a) and PSD SJ 84-01] Federally Enforceable Through Title V Permit

61. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as
described in 40 CFR 60.8) for CO on the exhaust stack gases and furnish the District, the California ARB and the
USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at
the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and
adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than
maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
62. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10 [PSD SJ 84-01] Federally Enforceable Through Title V Permit.

63. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approvalable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit.

64. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit.

65. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(c). [PSD SJ 84-01] Federally Enforceable Through Title V Permit.

66. This facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit.

67. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit.

68. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit.

69. No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (12/17/92), by using EPA method 9. If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit.

70. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
San Joaquin Valley Unified Air Pollution Control District Application Review

<table>
<thead>
<tr>
<th>Facility Name:</th>
<th>Kern River Cogeneration Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mailing Address:</td>
<td>P.O. Box 81617</td>
</tr>
<tr>
<td></td>
<td>Bakersfield, CA 93380</td>
</tr>
<tr>
<td>Contact Name:</td>
<td>Mervyn Soares</td>
</tr>
<tr>
<td></td>
<td>Kern River Cogeneration Company</td>
</tr>
<tr>
<td>Telephone:</td>
<td>(661) 392-2643</td>
</tr>
<tr>
<td>Fax:</td>
<td>(661) 392-2990</td>
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<tr>
<td>E-Mail:</td>
<td><a href="mailto:masoares@sycamore.com">masoares@sycamore.com</a></td>
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<tr>
<td>Contact Name:</td>
<td>Daniel Beck</td>
</tr>
<tr>
<td></td>
<td>Kern River Cogeneration Company</td>
</tr>
<tr>
<td>Telephone:</td>
<td>(661) 392-2461</td>
</tr>
<tr>
<td>Cell:</td>
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<td>(661) 392-2990</td>
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<td>E-Mail:</td>
<td><a href="mailto:dlbbeck@sycamore.com">dlbbeck@sycamore.com</a></td>
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<tr>
<td>Other Contact:</td>
<td>David Stein</td>
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<tr>
<td>Telephone:</td>
<td>(510) 874-3143</td>
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<td>E-Mail:</td>
<td><a href="mailto:david_stein@urscorp.com">david_stein@urscorp.com</a></td>
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<tr>
<td>Processing Engineer:</td>
<td>Richard Edgehill</td>
</tr>
<tr>
<td>Lead Engineer:</td>
<td>Allan Phillips, Sup. Air Quality Engineer</td>
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<tr>
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<td>September 9, 2005</td>
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<td>Project Number:</td>
<td>1053208</td>
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<td>Application Numbers:</td>
<td>S-88-1-14, ‘-2-14, ‘-3-14, and ‘-4-14</td>
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<td>July 19, 2005</td>
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I. PROPOSAL

Kern River Cogeneration Company (KRCC) is a cogeneration facility located in the Kern River oilfield near Bakersfield, CA. The facility employs four (4) General Electric Frame 7EA combustion turbine generators (CTGs) and four (4) unfired heat recovery steam generators (HRSGs) to cogenerate 300 MW (nominal rating) of electricity and 1.8 million pounds per hour of steam for enhanced oil recovery. These units are part of Chevron's heavy oil central stationary source in the Kern County oil fields.

Applicant is proposing the following modifications to the current PTOs:

A. KRCC is requesting that the existing Permits to Operate (PTOs) for Unit 1 (S-88-1) and Unit 2 (S-88-2) be modified to allow an additional mode of operation: producing electricity without recovering exhaust heat ("simple cycle" mode). The two units will still maintain the physical and operational ability to recover heat in the form of steam. The proposed addition to simple cycle involves a redirection of the CTG exhaust through an existing bypass stack. No physical changes to the units are needed to accommodate this operation. This request is being made to allow KRCC flexibility in offering dispatchable power to Southern California Edison (SCE) as part of a power purchase agreement (PPA). The PPA is due to expire August 2005 and the proposed modifications will allow KRCC to distribute cogeneration and dispatchable loads between all four (S-88-1, '2, '3, and '4) units resulting in higher efficiencies in both electricity and steam production. These modifications will allow KRCC to continue the contract with SCE beyond the expiration date.

B. A 1-hour average CO emission limit of 200 lb/hr per turbine will be added to the permits for S-88-1 and '2 to validate short-term emission modeling. There will be no change to the current 3-hour average CO emission limits of 25 ppmv @ 15%O₂ and 44.0 lb/hr which are applicable during periods of normal operation and no change to the current 140 lb/hr (2 hr average) emissions limit applicable during startups and shutdowns.

C. The stack sampling permit condition from S-88-3-12 and -4-12 (condition 36) will be revised to pertain only to the HRSG stack. Following discussions with EPA, emissions source testing requirements can be accomplished by conducting the testing at the HRSG stack for both modes of operation. Since there will be no control devices downstream of the turbine, testing from the HRSG stack only will meet the requirements of District Rule 1081.
KRCC received their Title V Permit on October 31, 1999. This modification can be classified as a Title V minor modification pursuant to Rule 2520, Section 3.20, 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. KRCC must apply to administratively amend their Title V Operating Permit to include the requirements of the ATC(s) issued with this project.

KRCC has determined that the requested changes will not trigger PSD review and has requested formal confirmation from EPA Region IX.

There are no outstanding ATCs for the permit units being modified. Copies of the current PTOs are included in Attachment I.

BACT, offsets, and public notice are not required for the project.

II. **APPLICABLE RULES**

- Rule 1080 Stack Monitoring (12/17/92)
- Rule 1081 Source Sampling (12/16/93)
- Rule 2201 New and Modified Stationary Source Review (04/20/05)
- Rule 2520 Federally Mandated Operating Permits (6/15/95)
- Rule 2540 Acid Rain Program (11/13/97)
- Rule 4001 NSPS Subpart GG – Standards of Performance for Stationary Gas Turbines (04/14/99)
- Rule 4101 Visible Emissions (02/17/05)
- Rule 4102 Nuisance (12/17/92)
- Rule 4201 Particulate Matter Concentration (12/17/92)
- Rule 4301 Fuel Burning Equipment (12/17/92) – **exempt** - CTGs do not meet the definition of fuel burning equipment and this rule does not apply
- Rule 4703 Stationary Gas Turbines (04/25/02)
- Rule 4801 Sulfur Compounds (12/17/92)
- CH&S Code, Section 41700

III. **PROJECT LOCATION**

KRCC is located in the center of the north ½ of Section 32, Township 28 South, Range 28 East in the Kern River Oil Field, within the central Kern County oil fields. There are no schools within 1000 feet of the project site.

IV. **PROCESS DESCRIPTION**

No additional physical construction is needed to facilitate operation of Units 1 and 2 without recovery exhaust heat. Each combustion turbine
generator (CTG) discharges to a heat recovery steam generator (HRSG) through a transition section that is equipped with a gas-tight bypass stack. In order to operate without recovering exhaust heat, the bypass stack damper would be repositioned to block off the HRSG, directing the CTG exhaust through the bypass stack to the atmosphere. The dry-low NOx (DLN) combustor operation may be unaffected by the position of the bypass damper so routing the exhaust through the bypass stack is not expected to impact the pollution created. As a result, no changes in permitted emissions limitations are requested; only additional limitations will be added. Emissions monitoring will take place at the transition section. The HRSG stack configuration is shown in Attachment II.

The current KRCC permit allows 24-hr a day operation. While KRCC does not propose to specifically restrict its operating schedule in the future, it is anticipated that Units 1 and 2 will operate substantially fewer hours than historical operations. At the present time, KRCC envisions that these units would operate without recovering exhaust heat in response to peak power demands occurring during the normal work week, Monday through Friday, and would not operate on weekends or holidays. Instead of a 24-hr operation, it is more likely that these two units would ultimately operate for no more than a 6 to 8 hr/day without recovering exhaust heat. KRCC also anticipates that the units will operate more frequently in the summer peak power period, April through October, and less during the off-peak period of the year, November through March. When operating without recovering exhaust heat, the number of startups and shutdowns for the affected CTG will likely be higher due to power demands.

Although actual startups and shutdown emissions may be higher than during current operations (due to more frequent startups and shutdowns), no change in permitted maximum hourly, daily or annual emissions is proposed or required, with the exception of adding a 1-hr CO emission limit to validate short-term modeling.

V. 

EQUIPMENT LISTING

Pre-Project Equipment Description:

PTO S-88-1-12: 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE COGENERATION UNIT WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #1)

PTO S-88-2-12: 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE COGENERATION UNIT WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #2)
PTO S-88-3-12: 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #3)

PTO S-88-4-12: 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #4)

Proposed Modifications:

ATC S-88-1-14: ALLOW DISCHARGING OF EXHAUST THROUGH BYPASS STACK WHEN OPERATING IN SIMPLE CYCLE MODE IN ADDITION TO CURRENTLY APPROVED DISCHARGING OF EXHAUST THROUGH UNFIRED 450,000 LB/HR HEAT RECOVERY STEAM GENERATOR WHEN IN COGENERATION MODE (KRCC UNIT #1), ADD 1-HOUR AVERAGE CO EMISSIONS LIMIT OF 200 LB/HR

ATC S-88-2-14: ALLOW DISCHARGING OF EXHAUST THROUGH BYPASS STACK WHEN OPERATING IN SIMPLE CYCLE MODE IN ADDITION TO CURRENTLY APPROVED DISCHARGING OF EXHAUST THROUGH UNFIRED 450,000 LB/HR HEAT RECOVERY STEAM GENERATOR WHEN IN COGENERATION MODE (KRCC UNIT #2), ADD 1-HOUR AVERAGE CO EMISSIONS LIMIT OF 200 LB/HR

ATC S-88-3-14: REVISE STACK SAMPLING CONDITION TO PERTAIN ONLY TO HRSG STACK

ATC S-88-4-14: REVISE STACK SAMPLING CONDITION TO PERTAIN ONLY TO HRSG STACK

Post Project Equipment Description:

PTO S-88-1-14: 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #1) DISCHARGING TO ATMOSPHERE THROUGH A BYPASS STACK WHEN OPERATED IN SIMPLE CYCLE MODE OR THROUGH UNFIRED 450,000 LB/HR HEAT RECOVERY STEAM GENERATOR WHEN OPERATED IN COGENERATION MODE (KRCC UNIT #1)

PTO S-88-2-14: 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE WITH DRY LOW NOX
NOX COMBUSTORS (KRCC UNIT #2) DISCHARGING TO ATMOSPHERE THROUGH A BYPASS STACK WHEN OPERATED IN SIMPLE CYCLE MODE OR THROUGH UNFIRED 450,000 LB/HR HEAT RECOVERY STEAM GENERATOR WHEN OPERATED IN COGENERATION MODE (KRCC UNIT #2)

PTO S-88-3-14: 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #3) DISCHARGING TO ATMOSPHERE THROUGH A BYPASS STACK WHEN OPERATED IN SIMPLE CYCLE MODE OR THROUGH UNFIRED 450,000 LB/HR HEAT RECOVERY STEAM GENERATOR WHEN OPERATED IN COGENERATION MODE (KRCC UNIT #3)

PTO S-88-4-14: 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #4) DISCHARGING TO ATMOSPHERE THROUGH A BYPASS STACK WHEN OPERATED IN SIMPLE CYCLE MODE OR THROUGH UNFIRED 450,000 LB/HR HEAT RECOVERY STEAM GENERATOR WHEN OPERATED IN COGENERATION MODE (KRCC UNIT #4)

VI. EMISSION CONTROL TECHNOLOGY EVALUATION

The combustion turbines utilize GE’s proprietary dry low NOx (DLN) technology. The DLN technology employs lean premixed combustion to stage combustion, resulting in reduced NOx formation. The DLN system installed at KRCC is currently limited to 16.4 ppmv NOx and 25 ppmv CO, dry at 15% oxygen. No post-combustion emission control for either NOx or CO is required with this system.

VII. CALCULATIONS

A. Assumptions:

Operating schedule: 24 hr/day, 365 day/yr

The changes requested to units '-3 and '-4 are revisions to a compliance procedure and therefore are not NSR modifications as defined by Rule 2201 (please see Compliance Section). Therefore calculations for units '-3 and '-4 are not required. Only PE2 will be calculated for these units.
B. Emission Factors:

Emission factors are identical for both S-88-1 and S-88-2. The maximum air contaminant mass emission rates (lb/hr), concentrations (ppmv d @ 15% O₂), and start-up and shut-down emissions rates for the CTGs are summarized below. Pre-project emissions factors are based on current permit conditions (PTOs S-88-1-12, ’-2-12):

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<th>Pre-Project</th>
<th>Normal Operation</th>
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<tr>
<td>Mass Emission Rates (per turbine, lb/hr)</td>
<td>79.7 (1-hr avg)</td>
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<td>ppmvd @ 15% O₂ limits</td>
<td>16.4 (3-hr avg)</td>
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<tbody>
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<td>Mass Emission Rates (per turbine, lb/hr)</td>
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<th>Post-Project</th>
<th>Normal Operation</th>
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<td>Mass Emission Rates (per turbine, lb/hr)</td>
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<td>ppmvd @ 15% O₂ limits</td>
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<tbody>
<tr>
<td>NOₓ</td>
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<tr>
<td>Mass Emission Rates (per turbine, lb/hr)</td>
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C. Calculations

1. Pre-Project Potential to Emit (PE1)

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<th>Permit Unit</th>
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\textsuperscript{1} Based on current Permit to Operate (Condition #38 PTO S-88-1-12, ‘-2-12)
\textsuperscript{2} Based on current Permit to Operate (Condition #39 PTO S-88-3-12, ‘-4-12)
\textsuperscript{3} Maximum emissions for startup only (Condition #41 PTO S-88-1-12, ‘-2-12). Maximum emissions during normal operation are listed in the table in Section VII B., above.
\textsuperscript{4} Maximum emissions for startup only (Condition #42 PTO S-88-3-12, ‘-4-12). Maximum emissions during normal operation are listed in the table in Section VII B., above.

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\textsuperscript{1} Current Permit to Operate emission limit (Condition #39 PTO S-88-1-12, ‘-2-12 includes startup and shutdown emissions)
\textsuperscript{2} Maximum hourly emissions during normal operation (Conditions #s 38, 40 PTO S-88-1-12, ‘-2-1, 3-hr average), lb/hr x 24 hr/day
\textsuperscript{3} Current Permit to Operate emission limit (Condition #40 PTO S-88-3-12, ‘-4-12 includes startup and shutdown emissions)
\textsuperscript{4} Maximum hourly emissions during normal operation (Conditions #s 39, 41 PTO S-88-3-12, ‘-4-12, 3-hr average), lb/hr x 24 hr/day

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<tr>
<th>Permit Unit</th>
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\textsuperscript{1} Maximum daily emissions lb/day x 365 day/yr
2. Post Project Potential to Emit (PE2)

Maximum Hourly Emissions, lb/hr

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<td>48</td>
<td>20</td>
<td>3.6</td>
</tr>
</tbody>
</table>

1 Based on current Permit to Operate (Condition # 38 PTO S-88-1-12, ‘-2-12)
2 Maximum emissions for startup only (Condition #41 PTO S-88-1-12, ‘-2-12). Maximum emissions during normal operation are listed in the table in Section VII B., above.
3 Proposed 1-hr average proposed by applicant

Maximum Daily Emissions, lb/day (PE2)

<table>
<thead>
<tr>
<th>Permit Unit</th>
<th>NOx</th>
<th>CO</th>
<th>VOC</th>
<th>PM_{10}</th>
<th>SOx</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-88-1-14</td>
<td>1629.6</td>
<td>1056.12</td>
<td>288</td>
<td>120</td>
<td>21.6</td>
</tr>
<tr>
<td>S-88-2-14</td>
<td>1629.6</td>
<td>1056.12</td>
<td>288</td>
<td>120</td>
<td>21.6</td>
</tr>
<tr>
<td>S-88-3-14</td>
<td>1629.6</td>
<td>1056</td>
<td>288</td>
<td>120</td>
<td>21.6</td>
</tr>
<tr>
<td>S-88-4-14</td>
<td>1629.6</td>
<td>1056</td>
<td>288</td>
<td>120</td>
<td>21.6</td>
</tr>
<tr>
<td>Total</td>
<td>6518.4</td>
<td>4224.1</td>
<td>1152</td>
<td>480</td>
<td>86.4</td>
</tr>
</tbody>
</table>

1 Current Permit to Operate emission limit (Condition #39 PTO S-88-1-12, ‘-2-1 includes startup and shutdown emissions)
2 Maximum hourly emissions during normal operation (Condition #s 38, 40 PTO S-88-1-12, ‘-2-1, 3-hr average), lb/hr x 24 hr/day

Maximum Annual Emissions, lb/yr

<table>
<thead>
<tr>
<th>Permit Unit</th>
<th>NOx</th>
<th>CO</th>
<th>VOC</th>
<th>PM_{10}</th>
<th>SOx</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-88-1-14</td>
<td>594804</td>
<td>385440</td>
<td>105120</td>
<td>43800</td>
<td>7884</td>
</tr>
<tr>
<td>S-88-2-14</td>
<td>594804</td>
<td>385440</td>
<td>105120</td>
<td>43800</td>
<td>7884</td>
</tr>
<tr>
<td>S-88-3-14</td>
<td>594804</td>
<td>385440</td>
<td>105120</td>
<td>43800</td>
<td>7884</td>
</tr>
<tr>
<td>S-88-4-14</td>
<td>594804</td>
<td>385440</td>
<td>105120</td>
<td>43800</td>
<td>7884</td>
</tr>
<tr>
<td>Total</td>
<td>2,379,216</td>
<td>1,541,760</td>
<td>420,480</td>
<td>175,200</td>
<td>31,536</td>
</tr>
</tbody>
</table>

1 Maximum daily emissions, lb/day x 365 day/yr

The emissions profiles are included in Attachment III.

3. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site. KRCC is part of Chevron’s heavy oil central stationary source consisting of facility ID’s S-0088, S-
0511, S-1127, S-1131, and S-1551 because the units are permitted to be used in the production of oil and are owned by Chevron. This source is a major source for all pollutants. The pre-project Stationary Source Potential to Emit was obtained using the District’s SSPE calculator which does not include banked ERCs.

Pre-Project Stationary Source Potential To Emit (SSPE1)

<table>
<thead>
<tr>
<th></th>
<th>NOₓ</th>
<th>CO</th>
<th>VOC</th>
<th>PM₁₀</th>
<th>SOₓ</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSPE1*</td>
<td>6553747</td>
<td>4703270</td>
<td>4975497</td>
<td>1505128</td>
<td>7302953</td>
</tr>
</tbody>
</table>

*not including ERCs

4. **Post Project Stationary Source Potential to Emit (SSPE2)**

Pursuant to Section 4.10 of District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

There is no change in the contribution of permit units to the SSPE. Therefore, SSPE2 equals SSPE1 and is as follows:

Post-Project Stationary Source Potential To Emit (SSPE2)

<table>
<thead>
<tr>
<th></th>
<th>NOₓ</th>
<th>CO</th>
<th>VOC</th>
<th>PM₁₀</th>
<th>SOₓ</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSPE2*</td>
<td>6553747</td>
<td>4703270</td>
<td>4975497</td>
<td>1505128</td>
<td>7302953</td>
</tr>
</tbody>
</table>

* not including ERCs

5. **Major Source Determination**

Pursuant to Section 3.25 of District Rule 2201, a major source is a stationary source with post-project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. However, Section 3.25.2 states, “for the purposes of determining major source status, the SSPE2 shall not include the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

<table>
<thead>
<tr>
<th>Permit Unit</th>
<th>NOₓ</th>
<th>CO</th>
<th>VOC</th>
<th>PM₁₀</th>
<th>SOₓ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Project, SSPE1</td>
<td>6553747</td>
<td>4703270</td>
<td>4975497</td>
<td>1505128</td>
<td>7302953</td>
</tr>
<tr>
<td>Post-Project, SSPE2</td>
<td>6553747</td>
<td>4703270</td>
<td>4975497</td>
<td>1505128</td>
<td>7302953</td>
</tr>
<tr>
<td>Major Source</td>
<td>50000</td>
<td>200000</td>
<td>50000</td>
<td>140000</td>
<td>140000</td>
</tr>
<tr>
<td>Thresholds</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Major Source?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
This source is an existing Major Source for all pollutants. No changes in criteria pollutants are proposed or expected as a result of this project.

6. **Baseline Emissions (BE)**

BE = Pre-project Potential to Emit for:
- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.23

**NO\textsubscript{x}, VOC, PM10 and SO\textsubscript{x}**

Pursuant to Rule 2201, subsection 3.7.1.3, baseline emissions (BE) are equal to the pre-project potential to emit (PE1) for fully offset emission units and for pollutants for which a source is not a major stationary source. Except for CO, the KRCC emission units were fully offset at the time they were originally permitted under the provisions of the then-existing Kern County APCD New Source Review Rule 210.1. The reductions used to provide the offsets were made prior to adoption of a formal banking rule, and thus were tracked in the form of a cumulative net emissions change for the stationary source. These reductions were applied to the KRCC project to offset the emissions increases in NO\textsubscript{x}, VOC, and SO\textsubscript{x}. PM10 emissions were offset with a combination of NO\textsubscript{x} reductions at a 13.3:1 (NO\textsubscript{x} for PM10) offset ratio, and SO\textsubscript{x} reductions at a 3.3:1 (SO\textsubscript{x} for PM10) ratio. Therefore these units qualify as Fully Offset for NO\textsubscript{x}, VOC, PM10 and SO\textsubscript{x} as the new emissions were fully mitigated under the New Source Review rule.

Therefore, BE = PE1 for NO\textsubscript{x}, VOC, PM\textsubscript{10} and SO\textsubscript{2}

**CO**

For CO emissions, the emission units are not Highly Utilized, Fully Offset, nor Clean; therefore, BE=HAE.

The baseline period is the 2-year period preceding submission of the complete application, July 19, 2005. For this project, the baseline period is July 19, 2003 to July 19, 2005.

For this project historical actual emissions during the baseline period were obtained from continuous monitoring records available from the facility
continuous monitoring system (CEMs). The data are included in the project file (email dated August 11, 2005).

Baseline Emissions (lb/yr)

<table>
<thead>
<tr>
<th>Permit Unit</th>
<th>NO$_X$</th>
<th>CO</th>
<th>VOC</th>
<th>PM$_{10}$</th>
<th>SO$_X$</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-88-1</td>
<td>0</td>
<td>132,370</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>S-88-2</td>
<td>0</td>
<td>49,485</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

7. **Contemporaneous Increase in Permitted Emissions (CIPE) & Title I Modification**

Rule 2201 defines a Major Modification by referencing 40CFR51.165. A Major Modification as defined in 40CFR51.165 (nonattainment plans and permitting) occurs if the Post-Project Stationary Source Potential to Emit (SSPE2) exceeds the Major Source Thresholds (as defined in Rule 2201) and the net emissions increase, is equal to or greater than one or more of the following threshold values:

**For an existing Major Source:**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>CIPE (lb/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO$_X$</td>
<td>50,000</td>
</tr>
<tr>
<td>VOC</td>
<td>50,000</td>
</tr>
<tr>
<td>SO$_X$</td>
<td>30,000</td>
</tr>
<tr>
<td>PM$_{10}$</td>
<td>80,000</td>
</tr>
</tbody>
</table>

Calculating the CIPE is required for existing Major Sources to determine if the current project has emissions increases above Title I Modification thresholds or is required for existing non-Major Sources becoming Major Sources, to determine if the current project has emissions increases above Major Source thresholds.

Section 3.39 of District Rule 2201 defines a Title I Modification as “the same as a Major Modification.” District Policy APR 1125 (currently in draft form) defines a Major Modification as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."

As discussed in Section VII.C.5 above, the facility is a Major Source for NO$_X$, VOCs, PM10, and SOx however, the project must “result in” a significant increase in emissions in order to trigger a Title I Modification. According to the District’s database the facility has provided offsets for NO$_X$, VOCs, PM10, and SOx for the modified emissions units within this project; therefore these units qualify as Fully Offset. Also, as seen in Sections VII.C.1 and VII.C.2, the modified emissions units within this project are not proposing an increase in emissions.
Therefore, the project does not “result in” a significant increase and according to District Policy, CIPE calculations are not necessary and the project does not constitute a Title I Modification.

The KRCC facility is located in a CO attainment area, and since 40CFR51.165 addresses Major Modifications in nonattainment areas only, this project is not a Major Modification for CO pursuant to 40CFR51.165.

(It is noted that EPA has not delegated Federal Prevention of Significant Deterioration (PSD) permitting requirements under 40CFR52.21 to the District. KRCC has submitted a notification to EPA that the project will not be subject to PSD review.)

VIII. **COMPLIANCE**

**Rule 1080 Stack Monitoring (12/17/92)**

This rule allows the APCO to request the installation and use of continuous emissions monitors (CEMs), and specifies performance standards for the equipment and administrative reporting, recordkeeping and violation and equipment breakdown notification requirements. CEMs sampling ports exist both in the transition section and in the HRSG exhaust. However, the CTG bypass stack exhaust piping has no EPA method compliant stack sampling capability at the bypass stack. The facility is proposing to compare (RATA test) transition section CEMS concentrations with EPA method compliant source test measurements taken at the HRSG exhaust. If the source test HRSG exhaust and transition CEMs readings agree (within an acceptable range as allowed by RATA requirements) HRSG exhaust concentrations will be considered equivalent to the transition section concentrations. Annual source testing will be done at the HRSG exhaust for verification of compliance for both simple cycle and combined cycle modes. For ongoing compliance, CEMS in the transition section will be used to verify compliance for simple cycle operation and CEMS in the HRSG exhaust will be used to verify compliance for combined cycle operation. Compliance with the rule is expected.

**Rule 1081 Source Sampling (12/16/93)**

This rule requires adequate and safe facilities for use in sampling to determine compliance and specifies methods and procedures for source testing, sample collection and compliance determination. Conditions are included on the ATCs which will ensure compliance with the requirements of this rule for both simple and combined cycle operation. Compliance is expected.

**Rule 2201 New and Modified Stationary Source Review (12/19/02)**

This rule applies to all new stationary sources and all modifications to existing stationary sources, which are subject to District permitting requirements. This rule defines modification as an action including at least one of the following items:
3.26.1.1 Any change in hours of operation, production rate, or method of operation of an existing emissions unit, which would necessitate a change in permit conditions.

3.26.1.2 Any structural change or addition to an existing emissions unit which would necessitate a change in permit conditions. Routine replacement shall not be considered to be a structural change.

3.26.1.3 An increase in emissions from an emissions unit caused by a modification of the Stationary Source when the emissions unit is not subject to a daily emissions limitation.

3.26.1.4 Addition of any new emissions unit which is subject to District permitting requirements.

3.26.1.5 A change in a permit term or condition proposed by an applicant to obtain an exemption from an applicable requirement to which the source would otherwise be subject.

S-88-3 and ‘4
Revision of Condition # 37 (ATCs S-88-3-14 and ‘4-14) to indicate that permanent stack sampling provisions pursuant to District Rule 1081 will pertain only to the HRSG stack (not to “each exhaust stack” as required by condition #36 of PTOs S-88-3-12 and ‘4-12) for both simple and combined cycle operations is a compliance procedural change only with no change in the method of operation nor physical modifications to the system. The requested change does not trigger any of the above requirements for a New Source Review (NSR) modification pursuant to Rule 2201, “New and Modified Stationary Source Review Rule”, Section 3.25.1.

Therefore, Rule 2201 does not apply to the proposed modifications to units S-88-3 and S-88-4. Best Available Control Technology (BACT) review, offsets, Title I modification, and public noticing are not applicable to Units #3 and #4.

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following*: 
   a. Any new emissions unit with a potential to emit exceeding two pounds per day,
   b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
   c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
d. Any new or modified emissions unit, in a stationary source project, which results in a Title I Modification.
*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

a. New emissions units – PE > 2 lb/day

As discussed in Section I above, there are no new emissions units associated with this project; therefore BACT for new units with PE > 2 lb/day purposes is not triggered.

It is also noted that allowing operation without recovering exhaust heat does not change the class or category of source since these units will retain the physical and operational ability to operate in cogeneration mode.

b. Relocation of emissions units – PE > 2 lb/day

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another; therefore BACT is not triggered.

c. Modification of emissions units – AIPE > 2 lb/day

\[ AIPE = PE2 - HAPE \]

Where,
\[ AIPE = \text{Adjusted Increase in Permitted Emissions, (lb/day)} \]
\[ PE2 = \text{Post-Project Potential to Emit, (lb/day)} \]
\[ HAPE = \text{Historically Adjusted Potential to Emit, (lb/day)} \]

\[ HAPE = PE1 \times (EF2/EF1) \]

Where,
\[ PE1 = \text{The emissions unit’s Potential to Emit prior to modification or relocation, (lb/day)} \]
\[ EF2 = \text{The emissions unit’s permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1} \]
\[ EF1 = \text{The emissions unit’s permitted emission factor for the pollutant before the modification or relocation} \]

\[ AIPE = PE2 - (PE1 \times (EF2 / EF1)) \]

Since there is no proposed change to daily emission factors listed in Section VII. B, above, \( EF2 = EF1 \). Therefore,
HAPE = PE1

The HAPE is identical for both S-88-1 and S-88-2 and is listed in the table below:

<table>
<thead>
<tr>
<th>Permit Unit</th>
<th>NO\textsubscript{X}</th>
<th>CO</th>
<th>VOC</th>
<th>PM\textsubscript{10}</th>
<th>SO\textsubscript{X}</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-88-1</td>
<td>1629.6</td>
<td>1056</td>
<td>288</td>
<td>120</td>
<td>21.6</td>
</tr>
<tr>
<td>S-88-2</td>
<td>1629.6</td>
<td>1056</td>
<td>288</td>
<td>120</td>
<td>21.6</td>
</tr>
</tbody>
</table>

AIPE = PE2 – HAPE

For this project, there is no change in emission factor or potential to emit. Therefore the AIPE is zero. Therefore, BACT is not triggered.

d. Title I Modification

As discussed in Section VII.C.7 above, this project does not constitute a Title I Modification; therefore BACT is not triggered.

B. Offsets

1. Offset Applicability

Pursuant to Section 4.5.3, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the Post-project Stationary Source Potential to Emit (SSPE2) equals to or exceeds the offset threshold levels in Table 4-1 or Rule 2201.

The following table compares the post-project facility-wide annual emissions in order to determine if offsets will be required for this project.

<table>
<thead>
<tr>
<th>Offset Determination (lb/year)</th>
<th>NO\textsubscript{X}</th>
<th>SO\textsubscript{X}</th>
<th>PM\textsubscript{10}</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post Project SSPE (SSPE2)</td>
<td>6553747</td>
<td>7302953</td>
<td>1505128</td>
<td>4703270</td>
<td>4975497</td>
</tr>
<tr>
<td>Offset Threshold</td>
<td>20,000</td>
<td>54,750</td>
<td>29,200</td>
<td>200,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Offsets calculations required?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

2. Quantity of Offsets Required

As seen above, the SSPE2 is greater than the offset thresholds for NO\textsubscript{X}, SO\textsubscript{X}, PM10, CO, and VOC; therefore offset calculations will be required for this project.
Per Sections 4.7.1 and 4.7.3, the quantity of offsets in pounds per year is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) = \( (\sum [PE2 - BE] + ICCE) \times DOR \), for all new or modified emissions units in the project,

Where,
- \( PE2 \) = Post Project Potential to Emit, (lb/year)
- \( BE \) = Baseline Emissions, (lb/year)
- \( ICCE \) = Increase in Cargo Carrier Emissions, (lb/year)
- \( DOR \) = Distance Offset Ratio, determined pursuant to Section 4.8

\( BE = \) Pre-project Potential to Emit for:
- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, Located at a Major Source.

otherwise,

\( BE = \) Historic Actual Emissions (HAE)

The facility is proposing to modify two emissions units (Units '-1 and '-2); and Baseline Emissions for the two units are the pre-project potential to emit for NOx, VOCs, PM10, and SOx. Also, there are no increases in cargo carrier emissions; therefore offsets for each unit can be determined as follows:

Offsets Required (lb/year) = \((\sum [PE2 - BE] + ICCE) \times DOR\)

\[
\begin{align*}
\text{NOx} \\
PE2 (\text{NO}_x) &= 594,804 \text{ lb/year} \\
BE (\text{NO}_x) &= 594,804 \text{ lb/year} \\
ICCE &= 0 \text{ lb/year}
\end{align*}
\]

Assuming an offset ratio of 1.5:1 (worst case), the amount of NO\(_x\) ERCs that would need to be withdrawn is:

Offsets Required (lb/year) = \((594,804 - 594,804 + 0) \times 1.5\) 
= \(0 \times 1.5\) 
= 0 lb NO\(_x\)/year

\[
\begin{align*}
\text{VOCs} \\
PE2 (\text{VOCs}) &= 105,120 \text{ lb/year} \\
BE (\text{VOCs}) &= 105,120 \text{ lb/year} \\
ICCE &= 0 \text{ lb/year}
\end{align*}
\]
Assuming an offset ratio of 1.5:1 (worst case), the amount of NO\textsubscript{X} ERCs that would need to be withdrawn is:

\[
\text{Offsets Required (lb/year)} = ([105,120 - 105,120 + 0] \times 1.5 = 0 \times 1.5 = 0 \text{ lb VOCs/year}
\]

\text{PM10}
PE2 (PM10) = 43,800 lb/year
BE (PM10) = 43,800 lb/year
ICCE = 0 lb/year

Assuming an offset ratio of 1.5:1 (worst case), the amount of NO\textsubscript{X} ERCs that would need to be withdrawn is:

\[
\text{Offsets Required (lb/year)} = ([43,800 - 43,800 + 0] \times 1.5 = 0 \times 1.5 = 0 \text{ lb PM10/year}
\]

\text{SOx}
PE2 (SO\textsubscript{x}) = 7884 lb/year
BE (SO\textsubscript{x}) = 7884 lb/year
ICCE = 0 lb/year

Assuming an offset ratio of 1.5:1 (worst case), the amount of NO\textsubscript{X} ERCs that would need to be withdrawn is:

\[
\text{Offsets Required (lb/year)} = ([7884 - 7884 + 0] \times 1.5 = 0 \times 1.5 = 0 \text{ lb SOx/year}
\]

As demonstrated in the calculation above, the amount of offsets is zero for NOx, VOCs, PM10, and SOx; therefore, offsets will not be required for these pollutants.

**CO**

For CO, baseline emissions were obtained from continuous emissions monitoring records available from the facility continuous emissions monitoring system (CEMS). These data are included in the project file. The quantity of offsets required for CO are calculated below.
<table>
<thead>
<tr>
<th></th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-project Potential to Emit (PE2) (S-88-1 &amp; S-88-2)</td>
<td>770,880</td>
</tr>
<tr>
<td>Baseline Emissions (S-88-1 &amp; S-88-2)</td>
<td>181,855</td>
</tr>
<tr>
<td>Required CO Offsets</td>
<td>589,025</td>
</tr>
</tbody>
</table>

District-performed modeling indicates that post-project CO emissions will not cause or contribute to a violation of the applicable CO ambient air quality standards. Pursuant to Section 4.6.1 of Rule 2201, the project is therefore exempt from CO emission offset requirements. See Attachment IV for summary of modeling results.

(Note: A 1-hour average limit of 200 lb/hr per turbine (estimate to be the worst case) will be added to the permits. The existing 3-hour average for normal operation of 44 lb/hr for CO will continue to be included on the permits as well as the 2-hour average of 140 lb/hr for startups.)

C. Public Notification

1. Applicability

Public noticing is required for:
   a. Any new Major Source, which is a new facility that is also a Major Source,
   b. Title I Modifications,
   c. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
   d. Any project which results in the offset thresholds being surpassed, and/or
   e. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

   a. New Major Source

New Major Sources are new facilities, which are also Major Sources. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

b. Title I Modification

As demonstrated in VII.C.7, this project does not constitute a Title I Modification; therefore, public noticing for Title I Modification purposes is not required.

c. PE > 100 lb/day

Applications which include a new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any pollutant will trigger
public noticing requirements. There are no new emissions units associated with this project; therefore public noticing is not required for this project for Potential to Emit Purposes.

d. Offset Threshold

Public notification is required if the Pre-Project Stationary Source Potential to Emit (SSPE1) is increased from a level below the offset threshold to a level exceeding the emissions offset threshold, for any pollutant.

The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>SSPE1 (lb/year)</th>
<th>SSPE2 (lb/year)</th>
<th>Offset Threshold</th>
<th>Public Notice Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>6553747</td>
<td>6553747</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>SOx</td>
<td>7302953</td>
<td>7302953</td>
<td>54,750 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>PM_{10}</td>
<td>1505128</td>
<td>1505128</td>
<td>29,200 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>CO</td>
<td>4703270</td>
<td>4703270</td>
<td>200,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>VOC</td>
<td>4975497</td>
<td>4975497</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
</tbody>
</table>

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

e. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. SSIPE = SSPE2 − SSPE1. The values for SSPE2 and SSPE1 are calculated according to Rule 2201, Sections 4.9 and 4.10, respectively. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table:
<table>
<thead>
<tr>
<th>Pollutant</th>
<th>SSPE2 (lb/year)</th>
<th>SSPE1 (lb/year)</th>
<th>SSPE (lb/year)</th>
<th>SSIPE Public Notice Threshold</th>
<th>Public Notice Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{x}</td>
<td>6553747</td>
<td>6553747</td>
<td>0</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>SO\textsubscript{x}</td>
<td>7302953</td>
<td>7302953</td>
<td>0</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>1505128</td>
<td>1505128</td>
<td>0</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>CO</td>
<td>4703270</td>
<td>4703270</td>
<td>0</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>VOC</td>
<td>4975497</td>
<td>4975497</td>
<td>0</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
</tbody>
</table>

2. Public Notice Action

As discussed above, this project will not result in emissions, for any criteria pollutant, which would subject the project to any of the noticing requirements listed above. Therefore, public notice will not be required for this project.

D. Daily Emission Limits (DELs)

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.17 to restrict a unit’s maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.17.1 and 3.17.2, the DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

The existing PTO contains explicit DELs, validated by the use of continuous emission monitors for NO\textsubscript{x} and CO, and fuel use monitoring for SO\textsubscript{x}. These same conditions will be carried onto the ATCs issued with this project. No further conditions are necessary.

E. Compliance Assurance

1. Source Testing

The gas turbine engines are required to be source tested annually for NO\textsubscript{x} and CO, and fuel sulfur content per Rule 2201 and Rule 4703, and once per 5-year permit term for PM10. No change in source testing will occur with this project as there is no change in emission control systems or change in permitted emission rates.

2. Monitoring

NO\textsubscript{x}, CO, and CO\textsubscript{2} CEMs in the transition section and HSRG exhaust stack will be used for verification of ongoing compliance during both simple and combined cycle operation. This monitoring satisfies Rule 2201 and Rule 4703 requirements. No additional monitoring is proposed or required.
3. Recordkeeping

KRCC is required to maintain records of emissions, source test results, CEM operations, etc. No changes are proposed or required.

4. Reporting

KRCC is required to report deviations, CEM breakdowns, equipment breakdowns, and other malfunctions. No changes are proposed or required.

Rule 2520  
Federally Mandated Operating Permits (06/21/2001)

KRCC has received their initial Title V Permit and is subject to this rule. This project qualifies as a minor modification to the Title V permit.

KRCC has requested to have the ATC issued with a Certificate of Conformity (COC), and a copy of KRCC Compliance Certification is provided in Attachment V. A 45-day EPA project review period is required. Compliance with this rule is expected.

Rule 2540  
Acid Rain Program (11/13/97)

The existing units are exempt (are not “affected units”) from the acid rain program pursuant to 40 CFR 72.6 (b)(1) because they are considered “simple combustion turbines that commenced commercial operation before November 15, 1990. “ The definition of “simple combustion turbine” is provided in 40 CFR 72.2 as follows:

“Simple combustion turbine means a unit that is a rotary engine driven by a gas under pressure that is created by the combustion of any fuel. This term includes combined cycle units without auxiliary firing. This term excludes combined cycle units with auxiliary firing, unless the unit did not use the auxiliary firing from 1985 through 1987 and does not use auxiliary firing at any time after November 15, 1990.”

Since “simple combustion turbine” definition includes the combined cycle units without auxiliary firing, KRCC is exempt under the provisions of 40 CFR 72.6 (b) (1). The units will continue to be “simple combustion turbines” in both cogeneration and simple cycle modes and KRCC will continue to be exempt from Rule 2540. Compliance is expected.

Rule 4001  
NSPS Subpart GG – Standards of Performance for Stationary Gas Turbines (04/14/99)

The turbines are subject to Subpart GG, which limits oxides of nitrogen and sulfur from stationary gas turbines. The current operating permits include NOx and SOx limits that meet the standards of Subpart GG. These operating permit limits will not be changed.
Also, reporting and notification requirements specified in Subpart A are also contained in the current operating permits. Compliance is expected.

Rule 4101 Visible Emissions (12/17/92)

The current and proposed permits limit visible emissions equal to or greater than 20% opacity (No. 1 Ringelmann) to periods less than three minutes in any one hour period (see Condition # 22 PTO S-88-0-1). Continued compliance is expected.

Rule 4102 Nuisance (12/17/92)

The current facility has not generated any nuisance complaints. Operation of the turbines without recovering exhaust heat is not expected to result in any nuisance complaints. Continued compliance is expected.

A. California Health & Safety Code 41700

Pursuant to District's Risk Management Policy APR 1905, for any sources with increases in hazardous air pollutant (HAP) emissions, the health risks resulting from such projects must be evaluated. The health risk assessment (HRA) process begins with the calculation of a “prioritization score” using CAPCOA Facility Prioritization Guidelines. If the facility-wide prioritization score is ≤ 1.0, then the project is approvable without further analysis of the health risks.

There is no change in HAP emissions with this project. However, because the bypass stack has different dimensions that the HRSG stack, and since the exhaust gas temperature will be different, a revised HRA is necessary. The prioritization score was calculated to determine if further risk screening was necessary. This project has a prioritization score of 0.44; therefore, no further screening is required. See Attachment VI for summary of results.

B. Discussion of T-BACT

Since the prioritization score is less than 1, T-BACT is not required.

Rule 4201 Particulate Matter Concentration (12/17/92)

Rule 4201 limits PM emissions from any source operation to less than 0.1 gr/dscf. The current operating permit limits PM emissions to less than 0.0072 gr/scf at 12% CO2 for each turbine (Condition #34 PTOs S-88-1-12, '-2-12). The proposed modifications will not alter this limit and continued compliance is expected.

Rule 4703 Stationary Gas Turbines (04/25/02)

This rule limits NOx and CO emissions from stationary gas turbines. The KRCC turbines are currently in compliance with the Tier I emission limits and monitoring requirements of this rule. Future requirements include lowering of the NOx limit to 3 ppmv @ 15% O2 per the Enhanced Option. KRCC has submitted a compliance plan
stating that they will comply with the Enhanced Option by 2008 or at the first overhaul, as required by the rule. Compliance is expected.

**Rule 4801 Sulfur Compounds (12/17/92)**

Rule 4801 limits sulfur compound emission to 0.2% (2,000 ppm) dry volume. SOx emissions from the turbines are based on combusting natural gas with a fuel sulfur content limited by the operating permit at 0.3 gr/100 scf (Condition #34 PTOs S-88-1-12, '-2-12). Use of this fuel S content results in a calculated SOx emission concentration much less than the 2,000 ppm rule limit (approximately 0.2 ppmvd). Continued compliance is expected.

**IX. RECOMMENDATION**

Issue preliminary decision to approve project and publish preliminary decision. After 45-day EPA comment period, issue ATCs S-0088-1-14, '-2-14, '-3-14, and '-4-14. See [Attachment VII](#) for the draft ATC conditions.

**X. BILLING INFORMATION**

Application filing fees have been received.

No change in annual fees result with this project.

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>Fee Schedule</th>
<th>Fee Rating</th>
<th>Annual Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-88-1-12</td>
<td>3020-8B-A</td>
<td>75,000 kW</td>
<td>$8757</td>
</tr>
<tr>
<td>S-88-2-12</td>
<td>3020-8B-A</td>
<td>75,000 kW</td>
<td>$8757</td>
</tr>
<tr>
<td>S-88-3-12</td>
<td>3020-8B-A</td>
<td>75,000 kW</td>
<td>$8757</td>
</tr>
<tr>
<td>S-88-4-12</td>
<td>3020-8B-A</td>
<td>75,000 kW</td>
<td>$8757</td>
</tr>
</tbody>
</table>

**Attachments**

I: Current PTO(s)  
II: HRSG Stack Configuration  
III: Emissions Profiles  
IV: CO Modelling  
V: Compliance Certification Form  
VI: HRA  
VII: Draft ATCs
Attachment I

Current Permits to Operate
San Joaquin Valley
Air Pollution Control District

FACILITY: S-88-0-1
EXPIRATION DATE: 08/31/2004

FACILITY-WIDE REQUIREMENTS

1. The owner or operator shall notify the District of any breakdown condition as soon as reasonably possible, but no later than one hour after its detection, unless the owner or operator demonstrates to the District's satisfaction that the longer reporting period was necessary. [District Rule 1100, 6.1; County Rules 110 (Fresno, Stanislaus, San Joaquin); 109 (Merced); 113 (Madera); and 111 (Kern, Tulare, Kings)] Federally Enforceable Through Title V Permit

2. The District shall be notified in writing within ten days following the correction of any breakdown condition. The breakdown notification shall include a description of the equipment malfunction or failure, the date and cause of the initial failure, the estimated emissions in excess of those allowed, and the methods utilized to restore normal operations. [District Rule 1100, 7.0; County Rules 110 (Fresno, Stanislaus, San Joaquin); 109 (Merced); 113 (Madera); and 111 (Kern, Tulare, Kings)] Federally Enforceable Through Title V Permit

3. The owner or operator of any stationary source operation that emits more than 25 tons per year of nitrogen oxides or reactive organic compounds, shall provide the District annually with a written statement in such form and at such time as the District prescribes, showing actual emissions of nitrogen oxides and reactive organic compounds from that source. [District Rule 1160, 5.0] Federally Enforceable Through Title V Permit

4. Any person building, altering or replacing any operation, article, machine, equipment, or other contrivance, the use of which may cause the issuance of air contaminants or the use of which may eliminate, reduce, or control the issuance of air contaminants, shall first obtain an Authority to Construct (ATC) from the District unless exempted by District Rule 2020 (7/21/94), [District Rule 2010, 3.0 and 4.0; 2020; and County Rule 201 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit

5. The permittee must comply with all conditions of the permit including permit revisions originated by the District. All terms and conditions of a permit that are required pursuant to the Clean Air Act (CAA), including provisions to limit potential to emit, are enforceable by the EPA and Citizens under the CAA. Any permit noncompliance constitutes a violation of the CAA and the District Rules and Regulations, and is grounds for enforcement action, for permit termination, revocation, reopening and reissuance, or modification; or for denial of a permit renewal application. [District Rules 2070, 7.0; 2080; and 2520, 9.9.1 and 9.13.1] Federally Enforceable Through Title V Permit

6. A Permit to Operate or an Authority to Construct shall not be transferred unless a new application is filed with and approved by the District. [District Rule 2031] Federally Enforceable Through Title V Permit

7. Every application for a permit required under Rule 2010 (12/17/92) (Permits Required) shall be filed in a manner and form prescribed by the District. [District Rule 2040] Federally Enforceable Through Title V Permit

8. The operator shall maintain records of required monitoring that include: 1) the date, place, and time of sampling or measurement; 2) the date(s) analyses were performed; 3) the company or entity that performed the analysis; 4) the analytical techniques or methods used; 5) the results of such analysis; and 6) the operating conditions at the time of sampling or measurement. [District Rule 2520, 9.5.1] Federally Enforceable Through Title V Permit

9. The operator shall retain records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, or report. Support information includes copies of all reports required by the permit and, for continuous monitoring instrumentation, all calibration and maintenance records and all original strip-chart recordings. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

FACILITY-WIDE REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate. Any amendments to these Facility-wide Requirements that affect specific Permit Units may constitute modification of those Permit Units.

Facility Name: KERN RIVER C OGENERATION CO
Location: HEAVY OIL CENTRAL CA
10. The operator shall submit reports of any required monitoring at least every six months unless a different frequency is required by an applicable requirement. All instances of deviations from permit requirements must be clearly identified in such reports. [District Rule 2520, 9.6.1] Federally Enforceable Through Title V Permit

11. Deviations from permit conditions must be promptly reported, including deviations attributable to upset conditions, as defined in the permit. For the purpose of this condition, promptly means as soon as reasonably possible, but no later than 10 days after detection. The report shall include the probable cause of such deviations, and any corrective actions or preventive measures taken. All required reports must be certified by a responsible official consistent with section 10.0 of District Rule 2520(6/15/95) [District Rules 2520, 9.6.2 and 1100, 7.0] Federally Enforceable Through Title V Permit

12. If for any reason a permit requirement or condition is being challenged for its constitutionality or validity by a court of competent jurisdiction, the outcome of such challenge shall not affect or invalidate the remainder of the conditions or requirements in that permit. [District Rule 2520, 9.8] Federally Enforceable Through Title V Permit

13. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. [District Rule 2520, 9.9.2] Federally Enforceable Through Title V Permit

14. The permit may be modified, revoked, reopened and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition. [District Rule 2520, 9.9.3] Federally Enforceable Through Title V Permit

15. The permit does not convey any property rights of any sort, or any exclusive privilege. [District Rule 2520, 9.9.4] Federally Enforceable Through Title V Permit

16. The Permittee shall furnish to the District, within a reasonable time, any information that the District may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the District copies of records required to be kept by the permit or, for information claimed to be confidential, the permittee may furnish such records directly to EPA along with a claim of confidentiality. [District Rule 2520, 9.9.5] Federally Enforceable Through Title V Permit

17. The permittee shall pay annual permit fees and other applicable fees as prescribed in Regulation III of the District Rules and Regulations. [District Rule 2520, 9.10] Federally Enforceable Through Title V Permit

18. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to enter the permittee's premises where a permitted source is located or emissions related activity is conducted, or where records must be kept under condition of the permit. [District Rule 2520, 9.14.2.1] Federally Enforceable Through Title V Permit

19. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit. [District Rule 2520, 9.14.2.2] Federally Enforceable Through Title V Permit

20. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to inspect at reasonable times any facilities, equipment, practices, or operations regulated or required under the permit. [District Rule 2520, 9.14.2.3] Federally Enforceable Through Title V Permit

21. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or applicable requirements. [District Rule 2520, 9.14.2.4] Federally Enforceable Through Title V Permit

22. No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (12/17/92), by using EPA method 9. If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit

FACILITY-WIDE REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.
23. No person shall supply, sell, solicit or apply any architectural coating, except specialty coatings, that contains more than 250 grams of VOC per liter of coating (less water and exempt compounds, and excluding any colorant added to tint bases), or manufacture, blend, or repackage such coating with more than 250 grams of VOC per liter (less water and exempt compounds, and excluding any colorant added to tint bases) for use within the District. [District Rule 4601, 5.1] Federally Enforceable Through Title V Permit

24. No person shall apply, sell, solicit, or offer for sale any specialty architectural coating listed in the Table of Standards (District Rule 4601, Table 1 (12/17/92)), nor manufacture, blend, or repackage such coating for use within the District, which contains VOCs (less water and exempt compounds, excluding any colorant added to tint bases) in excess of the specified limits listed in Table 1 of Rule 4601 (12/17/92). [District Rule 4601, 5.2] Federally Enforceable Through Title V Permit

25. All VOC-containing materials shall be stored in closed containers when not in use. In use includes, but is not limited to: being accessed, filled, emptied, maintained or repaired. [District Rule 4601, 5.4] Federally Enforceable Through Title V Permit

26. A person shall not use VOCs for the cleanup of spray equipment unless equipment for collection of the cleaning compounds and minimizing its evaporation to the atmosphere is used. [District Rule 4601, 5.5] Federally Enforceable Through Title V Permit

27. The permittee shall comply with all the Labeling and Test Methods requirements outlined in Rule 4601 sections 6.1 and 6.2 (12/17/92). [District Rule 4601, 6.1 and 6.2] Federally Enforceable Through Title V Permit

28. With each report or document submitted under a permit requirement or a request for information by the District or EPA, the permittee shall include a certification of truth, accuracy, and completeness by a responsible official [District Rule 2520, 9.14.1 and 10.0] Federally Enforceable Through Title V Permit

29. If the permittee performs maintenance on, or services, repairs, or disposes of appliances, the permittee shall comply with the standards for Recycling and Emissions Reduction pursuant to 40 CFR Part 82, Subpart F. [40 CFR 82 Subpart] Federally Enforceable Through Title V Permit

30. If the permittee performs service on motor vehicles when this service involves the ozone-depleting refrigerant in the motor vehicle air conditioner (MVAC), the permittee shall comply with the standards for Servicing of Motor Vehicle Air Conditioners pursuant to all the applicable requirements as specified in 40 CFR Part 82, Subpart B. [40 CFR Part 82, Subpart B] Federally Enforceable Through Title V Permit

31. Disturbances of soil related to any construction, demolition, excavation, extraction, or water mining activities shall comply with the requirements for fugitive dust control in SJVUAPCD District Rule 8020 (4/25/96) unless specifically exempted under section 4 of Rule 8020 (4/25/96). [District Rule 8020] Federally Enforceable Through Title V Permit

32. Outdoor handling and storage of any bulk material which emits dust shall comply with the requirements of SJVUAPCD Rule 8030 (4/25/96), unless specifically exempted under section 4 of Rule 8030 (4/25/96). [District Rule 8030] Federally Enforceable Through Title V Permit

33. Any paved road over 3 miles in length, and any unpaved roads over half a mile in length, constructed after December 10, 1993 shall use the design criteria and dust control measures of, and comply with the administrative requirements of, SJVUAPCD Rule 8060 (4/25/96) unless specifically exempted under section 4 of Rule 8060 (4/25/96). [District Rule 8060] Federally Enforceable Through Title V Permit

34. Any owner or operator of a demolition or renovation activity, as defined in 40 CFR 61.141, shall comply with the applicable inspection, notification, removal, and disposal procedures for asbestos containing materials as specified in 40 CFR 61.145 (Standard for Demolition and Renovation). [40 CFR 61 Subpart M] Federally Enforceable Through Title V Permit

35. The permittee shall submit certifications of compliance with the terms and standards contained in Title V permits, including emission limits, standards and work practices, to the District and the EPA annually (or more frequently as specified in an applicable requirement or as specified by the District). The certification shall include the identification of each permit term or condition, the compliance status, whether compliance was continuous or intermittent, the methods used for determining the compliance status, and any other facts required by the District to determine the compliance status of the source. [District Rule 2520, 9.17] Federally Enforceable Through Title V Permit

FACILITY-WIDE REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.
36. The permittee shall submit an application for Title V permit renewal to the District at least six months, but not greater than 18 months, prior to the permit expiration date. [District Rule 2520, 5.2] Federally Enforceable Through Title V Permit

37. When a term is not defined in a Title V permit condition, the definition in the rule cited as the origin and authority for the condition in a Title V permit shall apply. [District Rule 2520, 9.1.1] Federally Enforceable Through Title V Permit

38. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following outdated SIP requirements: Rule 401 (Madera, Fresno, Kern, Kings, San Joaquin, Stanislaus, Tulare and Merced), Rule 110 (Fresno, Stanislaus, San Joaquin), Rule 109 (Merced), Rule 113 (Madera), Rule 111 (Kern, Tulare, Kings), Rules 201, 202, 203, 204, 208, and 209 (Fresno, Kern, Tulare, Kings, Madera, Stanislaus, Merced, San Joaquin), Rule 410.1 (Kern), and Rule 423 (Kern, Fresno, Stanislaus, San Joaquin). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

39. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rules 1100, sections 6.1 and 7.0 (12/17/92); 2010, sections 3.0 and 4.0 (12/17/92); 2031 (12/17/92); 2040 (12/17/92); 2070, section 7.0 (12/17/92); 2080 (12/17/92); 4101 (12/17/92); 4601, sections 5.1, 5.2, 5.4, 5.5, 6.1, and 6.2 (12/17/92); 8020 (4/25/96); 8030 (4/25/96); 8060 (4/25/96). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

40. The owner and operator shall submit a single Risk Management Plan (RMP) that includes the information required by 40 CFR Subpart G, Sections 68.155 through 68.185 for all covered processes. The RMP shall be submitted in a method and format to a central point as specified by EPA prior to June 21, 1999. [40 CFR 68] Federally Enforceable Through Title V Permit

41. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

These terms and conditions are part of the Facility-wide Permit to Operate.
San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-88-1-12
EXPIRATION DATE: 08/31/2004
SECTION: 32  TOWNSHIP: 28S  RANGE: 28E

EQUIPMENT DESCRIPTION:
75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE COGENERATION UNIT
WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #1)

PERMIT UNIT REQUIREMENTS

1. CGT shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be
pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR
60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit

2. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)ppmvd @ 15% O2, under load conditions, excluding
thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 {100%x(3412 Btu/kW-
hr)/(Actual Heat Rate at HHV, Btu/kW-hr)} or EFF2 {EFFmfr x (LHV/HHV)} where actual heat rate is a ratio of the
heat input to power output taking into account the manufacturer's listed turbine efficiency, HHV is the higher heating
value of the fuel, LHV is the lower heating value of the fuel, and EFFmfr is the manufacturer's continuous rated
percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be
assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable
Through Title V Permit

3. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule
108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), Rule 110 (Madera), and Rule 108 (Kings); District
Rule 1081] Federally Enforceable Through Title V Permit

4. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the
turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR
60.335(d)] Federally Enforceable Through Title V Permit

5. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly
except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel
source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content
requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR
60.334(b)(2)] Federally Enforceable Through Title V Permit

6. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40
CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

7. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2)
concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4]
Federally Enforceable Through Title V Permit

8. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to
15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit

9. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as
defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V
Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: KERN RIVER COGENERATION CO
10. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

11. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

12. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

13. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

14. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

15. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

16. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

17. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: Rules 402 (Madera) and 404 (Fresno, Kern, Kings, Merced, San Joaquin, Stanislaus, Tulare); Rule 108.1 (Kings) and Rule 108 (in all seven remaining counties in the San Joaquin Valley); Rule 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern and Stanislaus), and 110 (Madera); District Rule 4703, Section 6.2.2; District Rule 1080, 7.3; 40 CFR 60.333(a) and (b); 40 CFR 60.334 (b) and (c)(1). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

18. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

20. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: Rule 404 (Merced); 40 CFR 60.332 (b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

21. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b),(c) and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit
22. The continuous NOx monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 6.7] Federally Enforceable Through Title V Permit

23. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

24. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

25. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

26. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, date and magnitude of offset emissions (computed in accordance with 40 CFR 60.13(h)), property of the CEM system, the excess emission limits set forth in the emission test period used to determine compliance with an emission standard. [Kern County Rule 108 and District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. The written report for each calendar quarter shall also include: C. 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; D. a negative declaration when no offset emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceed the emission limits set forth in the title test period used to determine compliance with an emission standard. [Kern County Rule 108; District Rule 1080, 8.0; PSD SJ 84-01, X.D.3 and X.D.5.a through e] Federally Enforceable Through Title V Permit

28. The CGT combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

29. Each CGT shall have a maximum heat input rate of 1020 MMBlU/hr on an LHV basis. Firing rate can be increased upon District witness emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

30. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

31. Exhaust gas ducting from CGT's through HRSG's to the atmosphere shall be gas-tight. [District NSR Rule] Federally Enforceable Through Title V Permit

32. Bypass stack valve preceding each HRSG shall be designed to be gas-tight. [District NSR Rule] Federally Enforceable Through Title V Permit

33. Each CGT shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

34. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

35. Each HRSG exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081] Federally Enforceable Through Title V Permit

36. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.
37. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CGT fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

38. Emission rates from CGT shall not exceed any of the following: PM10 - 5.0 lb/hr, SOX (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

39. Emission rates from CGT shall not exceed any of the following: PM10 - 120.0 lb/day, SOX (as SO2) - 21.6 lb/day, NOX (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CGT, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

41. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, or 140 lb/hr of CO on a 2-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

43. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

44. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

45. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CGT flue gas stream, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

47. All continuous emissions monitoring systems shall be calibrated and operated according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit

48. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

49. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

50. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

51. Startup and shutdown of CGT, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

52. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.
53. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

54. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

55. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

56. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1320.5(a) and PSD SJ 84-01] Federally Enforceable Through Title V Permit

59. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gasses and furnish the District, the California ARB and the USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

60. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10 [PSD SJ 84-01] Federally Enforceable Through Title V Permit

61. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approachable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

62. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

63. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(e). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

64. The cogeneration facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and G of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.
65. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

66. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit
San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-88-2-12

SECTION: 32  TOWNSHIP: 28S  RANGE: 28E

EXPIRATION DATE: 08/31/2004

EQUIPMENT DESCRIPTION:
75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE COGENERATION UNIT
WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #2)

PERMIT UNIT REQUIREMENTS

1. CGT shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be
pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR
60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit

2. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)pmmvd @ 15% O2, under load conditions, excluding
thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 {100%x(3412 Btu/kW-hr)
(Actual Heat Rate at HHV, Btu/kW-hr)} or EFF2 {EFFmfr x (LHV/HHV)} where actual heat rate is a ratio of the
heat input to power output taking into account the manufacturer's listed turbine efficiency, HHV is the higher heating
value of the fuel, LHV is the lower heating value of the fuel, and EFFmfr is the manufacturer's continuous rated
percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be
assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable
Through Title V Permit

3. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule
108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), Rule 110 (Madera), and Rule 108 (Kings); District
Rule 1081] Federally Enforceable Through Title V Permit

4. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the
turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR
60.335(d)] Federally Enforceable Through Title V Permit

5. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly
except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel
source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content
requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR
60.334(b)(2)] Federally Enforceable Through Title V Permit

6. The HHV and LHV of the fuel shall be determined using ASTM D 3588-91, ASTM 1826-88, OR ASTM 1945-81. [40
CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

7. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2)
concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4]
Federally Enforceable Through Title V Permit

8. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to
15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit

9. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as
defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V
Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.
10. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

11. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

12. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

13. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

14. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.6] Federally Enforceable Through Title V Permit

15. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

16. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

17. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: Rules 402 (Madera) and 404 (Fresno, Kern, Kings, Merced, San Joaquin, Stanislaus, Tulare); Rule 108.1 (Kings) and Rule 108 (in all seven remaining counties in the San Joaquin Valley); Rule 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern and Stanislaus), and 110 (Madera); District Rule 4703, Section 6.2.2; District Rule 1080, 7.3; 40 CFR 60.333(a) and (b); 40 CFR 60.334 (b) and (c)(1). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

18. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

20. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: Rule 404 (Merced); 40 CFR 60.332 (b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

21. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b),(c) and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.
22. The continuous NOx monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 6.7] Federally Enforceable Through Title V Permit

23. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

24. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

25. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

26. Operators of CEM installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions (computed in accordance with 40 CFR 60.13(h)), nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard. [Kern County Rule 108 and District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. The written report for each calendar quarter shall also include: C. 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; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [Kern County Rule 108; District Rule 1080, 8.0; PSD SJ 84-01, X.D.3 and X.D.5 through e] Federally Enforceable Through Title V Permit

28. The CGT combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

29. Each CGT shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

30. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

31. Exhaust gas ducting from CGT's through HRSG's to the atmosphere shall be gas-tight. [District NSR Rule] Federally Enforceable Through Title V Permit

32. Bypass stack valve preceding each HRSG shall be designed to be gas-tight. [District NSR Rule] Federally Enforceable Through Title V Permit

33. Each CGT shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

34. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

35. Each HRSG exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081] Federally Enforceable Through Title V Permit

36. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.
37. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CGT fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

38. Emission rates from CGT shall not exceed any of the following: PM10 - 5.0 lb/hr, SOx (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

39. Emission rates from CGT shall not exceed any of the following: PM10 - 120.0 lb/day, SOx (as SO2) - 21.6 lb/day, NOx (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CGT, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

41. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, or 140 lb/hr of CO on a 2-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

43. Daily emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

44. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

45. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CGT flue gas stream, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

47. All continuous emissions monitoring systems shall be calibrated and operated according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit

48. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

49. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

50. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

51. Startup and shutdown of CGT, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

52. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: KERN RIVER COGENERATION CO
Location: HEAVY OIL CENTRAL, CA
53. Daily records of NO₂ and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

54. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

55. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

56. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1320.5(a) and PSD SJ 84-01] Federally Enforceable Through Title V Permit

59. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gasses and furnish the District, the California ARB and the USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

60. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10 [PSD SJ 84-01] Federally Enforceable Through Title V Permit

61. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approvable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

62. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

63. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(e). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

64. The cogeneration facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.
65. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

66. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: KERN RIVER COGENERATION CO
Location: HEAVY OIL CENTRAL, CA
San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-88-3-12
EXPIRATION DATE: 08/31/2004

SECTION: 32  TOWNSHIP: 28S  RANGE: 28E

EQUIPMENT DESCRIPTION:
75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #3)

PERMIT UNIT REQUIREMENTS

1. CGT shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR 60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit

2. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)p/mvd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 {100% x (3412 Btu/kW-hr)/(Actual Heat Rate at HHV, Btu/kW-hr)} or EFF2 {EFFmfr x (LHV/HHV)} where actual heat rate is a ratio of the heat input to power output taking into account the manufacturer's listed turbine efficiency, HHV is the higher heating value of the fuel, LHV is the lower heating value of the fuel, and EFFmfr is the manufacturer's continuous rated percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable Through Title V Permit

3. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), Rule 110 (Madera), and Rule 108 (Kings); District Rule 1081] Federally Enforceable Through Title V Permit

4. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

5. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit

6. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

7. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2) concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4] Federally Enforceable Through Title V Permit

8. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to 15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit

9. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.
10. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

11. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7] Federally Enforceable Through Title V Permit

12. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM’s that have been installed pursuant to District Rule 1080, and emission measurements. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

13. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

14. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

15. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

16. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

17. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: Rules 402 (Madera) and 404 (Fresno, Kern, Kings, Merced, San Joaquin, Stanislaus, Tulare); Rule 108.1 (Kings) and Rule 108 (in all seven remaining counties in the San Joaquin Valley); Rule 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern and Stanislaus), and 110 (Madera); District Rule 4703, Section 6.2.2; District Rule 1080, 7.3; 40 CFR 60.333(a) and (b); 40 CFR 60.334 (b) and (e)(1). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

18. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

20. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: Rule 404 (Merced); 40 CFR 60.332 (b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

21. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b),(c) and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.
Permit Unit Requirements for S-88-3-12 (continued)

22. The continuous NOx monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 6.7] Federally Enforceable Through Title V Permit

23. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

24. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

25. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

26. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions (computed in accordance with 40 CFR 60.13(h)), nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard. [Kern County Rule 108 and District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. The written report for each calendar quarter shall also include: C. 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; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [Kern County Rule 108; District Rule 1080, 8.0; PSD SJ 84-01, X.D.3 and X.D.5.a through c] Federally Enforceable Through Title V Permit

28. The CGT combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

29. Each CGT shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

30. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

31. CGT may exhaust either through unfired 450,000 lb/hr heat recovery steam generator or through bypass stack. [District Rule 2201] Federally Enforceable Through Title V Permit

32. When operating in cogeneration mode, exhaust gas ducting from CGT's through HRSG's to the atmosphere shall be gas-tight. [District NSR Rule] Federally Enforceable Through Title V Permit

33. Bypass stack valve preceding each HRSG shall be designed to be gas-tight to the atmosphere when exhaust is discharged through HRSG and shall be designed to be gas-tight to the HRSG when exhaust is discharged through the bypass stack. [District NSR Rule] Federally Enforceable Through Title V Permit

34. Each CGT shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

35. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.
36. Each exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081] Federally Enforceable Through Title V Permit

37. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

38. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CGT fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

39. Emission rates from CGT shall not exceed any of the following: PM10 - 5.0 lb/hr, SOx (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CGT shall not exceed any of the following: PM10 - 120.0 lb/day, SOx (as SO2) - 21.6 lb/day, NOx (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Emission rates from CGT, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, 140 lb/hr of CO on a 2-hr avg, or 200 lb/hr of CO on a 1-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

43. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

44. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

45. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

47. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CGT flue gas stream, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

48. All continuous emissions monitoring systems shall be calibrated and operated according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit

49. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

50. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.
51. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

52. Startup and shutdown of CGT, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

53. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

54. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

55. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

56. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

59. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1320.5(a) and PSD SJ 84-01] Federally Enforceable Through Title V Permit

60. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gases and furnish the District, the California ARB and the USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

61. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

62. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approvable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: KERN RIVER COGENERATION CO
Location: HEAVY OIL CENTRAL, CA
63. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

64. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(e). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

65. The cogeneration facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

66. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

67. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.
San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-88-4-12
EXPIRATION DATE: 08/31/2004
SECTION: 32  TOWNSHIP: 28S  RANGE: 28E

EQUIPMENT DESCRIPTION:
75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE WITH DRY LOW NOX
COMBUSTORS (KRCC UNIT #4)

PERMIT UNIT REQUIREMENTS

1. CGT shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be
pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR
60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit

2. Operator shall not exceed a NOx emission rate of: (15 X EFF/25ppmvd @ 15% O2, under load conditions, excluding
thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 {100% x (3412 Btu/kW-
hr)/(Actual Heat Rate at HHV, Btu/kW-hr)} or EFF2 {EFFmfr x (LHV/HHV)} where actual heat rate is a ratio of the
heat input to power output taking into account the manufacturer's listed turbine efficiency, HHV is the higher heating
value of the fuel, LHV is the lower heating value of the fuel, and EFFmfr is the manufacturer's continuous rated
percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be
assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable
Through Title V Permit

3. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule
108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), Rule 110 (Madera), and Rule 108 (Kings); District
Rule 1081] Federally Enforceable Through Title V Permit

4. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the
turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR
60.335(d)] Federally Enforceable Through Title V Permit

5. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly
except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel
source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content
requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR
60.334(b)(2)] Federally Enforceable Through Title V Permit

6. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40
CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

7. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2)
concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4]
Federally Enforceable Through Title V Permit

8. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to
15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit

9. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as
defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V
Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.
10. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

11. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

12. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

13. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

14. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

15. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

16. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

17. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: Rules 402 (Madera) and 404 (Fresno, Kern, Kings, Merced, San Joaquin, Stanislaus, Tulare); Rule 108.1 (Kings) and Rule 108 (in all seven remaining counties in the San Joaquin Valley); Rule 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern and Stanislaus), and 110 (Madera); District Rule 4703, Section 6.2.2; District Rule 1080, 7.3; 40 CFR 60.333(a) and (b); 40 CFR 60.334 (b) and (c)(1). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

18. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

20. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: Rule 404 (Merced); 40 CFR 60.332 (b); 60.335 (a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

21. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b),(c) and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit
22. The continuous NOx monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 6.7] Federally Enforceable Through Title V Permit

23. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

24. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [Rule 108 (Kings, Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

25. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [Rule 108 (Kings, Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

26. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions (computed in accordance with 40 CFR 60.13(h)), nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard. [Kern County Rule 108 and District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. The written report for each calendar quarter shall also include: C. 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; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [Kern County Rule 108; District Rule 1080, 8.0; PSD SJ 84-01, X.D.3 and X.D.5.a through e] Federally Enforceable Through Title V Permit

28. The CGT combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

29. Each CGT shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

30. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

31. CGT may exhaust either through unfired 450,000 lb/hr heat recovery steam generator or through bypass stack. [District Rule 2201] Federally Enforceable Through Title V Permit

32. When operating in cogeneration mode, exhaust gas ducting from CGT's through HRSG's to the atmosphere shall be gas-tight. [District NSR Rule] Federally Enforceable Through Title V Permit

33. Bypass stack valve preceding each HRSG shall be designed to be gas-tight to the atmosphere when exhaust is discharged through HRSG and shall be designed to be gas-tight to the HRSG when exhaust is discharged through the bypass stack. [District NSR Rule] Federally Enforceable Through Title V Permit

34. Each CGT shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

35. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: KERN RIVER COGENERATION CO
Location: HEAVY OIL CENTRAL, CA
36. Each exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081] Federally Enforceable Through Title V Permit

37. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

38. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CGT fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

39. Emission rates from CGT shall not exceed any of the following: PM10 - 5.0 lb/hr, SOx (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CGT shall not exceed any of the following: PM10 - 120.0 lb/day, SOx (as SO2) - 21.6 lb/day, NOx (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Emission rates from CGT, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, 140 lb/hr of CO on a 2-hr avg, or 200 lb/hr of CO on a 1-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

43. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

44. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

45. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

47. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CGT flue gas stream, shall conform to SJVAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

48. All continuous emissions monitoring systems shall be calibrated and operated according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit

49. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

50. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

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54. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

55. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

56. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

59. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1320.5(a) and PSD SJ 84-01] Federally Enforceable Through Title V Permit

60. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gases and furnish the District, the California ARB and the USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

61. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10 [PSD SJ 84-01] Federally Enforceable Through Title V Permit

62. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approvable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.
63. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

64. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(e). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

65. The cogeneration facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

66. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

67. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.
Attachment II

HRSG Stack Configuration
Attachment III
Emissions Profiles
<table>
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<th>NOx</th>
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<th>PM10</th>
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<td>Daily Emissions Limit (lb/day):</td>
<td>1629.6</td>
<td>21.6</td>
<td>120.0</td>
<td>1056.0</td>
<td>288.0</td>
</tr>
<tr>
<td>Quarterly Net Emissions Change (lb/Qtr)</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>1.</td>
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<tr>
<td>Check if offsets are triggered but exemption applies</td>
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<tr>
<td>Offset Ratio:</td>
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<td>1.</td>
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<tr>
<td>Quarterly Offset Amounts (lb/Qtr)</td>
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<td>SLCID (PTE):</td>
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<tr>
<td>SLCID (DEL):</td>
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<td>SOX</td>
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</tr>
<tr>
<td>Potential to Emit (lb/Yr):</td>
<td>594804</td>
<td>7884</td>
<td>43600</td>
<td>385440</td>
<td>105120</td>
</tr>
<tr>
<td>Daily Emiss. Limit (lb/Day):</td>
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<td>21.6</td>
<td>120.0</td>
<td>1056.0</td>
<td>288.0</td>
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<td>SLC ID (PTE):</td>
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<td>SLC ID (DEL):</td>
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<tr>
<td>Pollutant</td>
<td>NOx</td>
<td>SOx</td>
<td>PM10</td>
<td>CO</td>
<td>VOC</td>
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<td>21.6</td>
<td>120.0</td>
<td>1056.0</td>
<td>288.0</td>
</tr>
</tbody>
</table>

Quarterly Net Emissions Change (lb/Qtr):
1: 0
2: 0
3: 0
4: 0

Check if offsets are triggered but exemption applies:
- [ ]
- [ ]
- [ ]
- [ ]

Offset Ratios:
1: 
2: 
3: 
4: 

Quarterly Offset Amounts (lb/Qtr):
1: 
2: 
3: 
4: 

SLC ID (PTE):

SLC ID (DEL):
<table>
<thead>
<tr>
<th></th>
<th>NOX</th>
<th>SOX</th>
<th>PM10</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential to Emit (lb/yr)</td>
<td>594904</td>
<td>7984</td>
<td>43800</td>
<td>385440</td>
<td>105120</td>
</tr>
<tr>
<td>Daily Ems. Limit (lb/day)</td>
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<td>288.0</td>
</tr>
<tr>
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<td>0</td>
<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>Offset Ratio:</td>
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</tr>
</tbody>
</table>

Facility SLC:
Exit
Attachment IV
CO Modelling
San Joaquin Valley Unified
Air Pollution Control District

MEMORANDUM

DATE: August 17, 2005

TO: Richard Edgehill, AQE—Permit Services

FROM: Esteban Gutierrez, AQS—Technical Services

SUBJECT: RMR and CO Modeling request for Kern River Cogeneration Co. (S-88-1-14 & -2-14) Project #1053208

As per your request, Technical Services performed CO Modeling and a RMR, for (2) NG fired Gas Turbines operating in simple cycle mode. The maximum fuel rate for the turbines used during the analysis was 1.02 MMcf/hr and 8935.2 MMcf/yr. Technical Services performed a prioritization using Ventura County emission factors for natural gas internal combustion. The units were assumed to operate 8760 hours per year. The CO emission rate used for the CO Modeling is as follows:

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Max Hourly Emission Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO (1-14)</td>
<td>200 lb</td>
</tr>
<tr>
<td>CO (2-14)</td>
<td>200 lb</td>
</tr>
</tbody>
</table>

The results from the RMR modeling runs and AAQA are as follows:

<table>
<thead>
<tr>
<th>RMR Modeling Results</th>
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</thead>
<tbody>
<tr>
<td>(2) NG fired Turbines</td>
</tr>
<tr>
<td>Prioritization</td>
</tr>
<tr>
<td>Acute</td>
</tr>
<tr>
<td>Chronic</td>
</tr>
<tr>
<td>Cancer</td>
</tr>
<tr>
<td>TBACT Required</td>
</tr>
</tbody>
</table>
Kern River Cogeneration Co. (S-88-1-14, 2-14)  
August 17, 2005  
Page 2

RMR Conclusion:

The prioritization score for the project was 0.44 @ 1066.7 meters. In accordance with the District's Risk Management Policy, no further analysis is required. Permitting may proceed without consideration of Toxic Best Available Control Technology (TBACT).

CO Modeling Results*  
Values are in ug/m³

<table>
<thead>
<tr>
<th>2 – NG fired Turbines</th>
<th>1 Hour</th>
<th>3 Hours</th>
<th>8 Hours</th>
<th>24 Hours</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>Pass</td>
<td>X</td>
<td>Pass</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>NOₓ</td>
<td>N/A</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>N/A</td>
</tr>
<tr>
<td>SOₓ</td>
<td>N/A</td>
<td>N/A</td>
<td>X</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

* Results were taken from the attached PSD spreadsheet.

Analysis:

The District's review found Kern River Cogeneration's potential CO concentrations to be less than the maximum limits for the 1-hour and 8-hour averaging times for State and Federal standards.

Modeling Conclusion:

The CO modeling runs indicate that the emissions from the proposed simple cycle operating mode will not require CO offsets. Therefore, **no further modeling will be required to demonstrate that CO offsets are not required**.

NOTE: This project does not determine if the AAQS or EPA's level of significance will be exceeded for NOₓ, SOₓ & PM. Further modeling will be required to determine if other criteria pollutants will have an adverse impact on the State and National AAQS (as required by Public Notice).
Attachment V
Compliance Certification Form
San Joaquin Valley
Unified Air Pollution Control District

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

[ ] SIGNIFICANT PERMIT MODIFICATION [ ] ADMINISTRATIVE AMENDMENT
[X] MINOR PERMIT MODIFICATION [ ] ADMINISTRATIVE AMENDMENT

COMPANY NAME: Kern River Cogeneration Company

<table>
<thead>
<tr>
<th>FACILITY ID:</th>
<th>S-08</th>
</tr>
</thead>
</table>

1. Type of Organization: [ ] Corporation [ ] Sole Ownership [ ] Government [X] Partnership [ ] Utility

2. Owner's Name: Kern River Cogeneration Company

3. Agent to the Owner: Neil Burgess

II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial all circles for confirmation):

[☒] Based on information and belief formed after reasonable inquiry, the source identified in this application will continue to comply with the applicable federal requirement(s).

[☒] Based on information and belief formed after reasonable inquiry, the source identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.

[☒] Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.

[☒] Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the foregoing is correct and true:

[Signature]
Neil E. Burgess

[Date]
6/27/05

Signature of Responsible Official

Name of Responsible Official (please print)

Executive Director

Title of Responsible Official (please print)

Mailing Address: Central Regional Office * 1990 E. Gettysburg Avenue * Fresno, California 93726-0244 * (559) 230-5900 * FAX (559) 230-6061

TVFORM-009
Rev. January 2003
San Joaquin Valley Unified
Air Pollution Control District

MEMORANDUM

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FROM: Esteban Gutierrez, AQS — Technical Services

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<tbody>
<tr>
<td>CO</td>
<td>Pass</td>
<td>X</td>
<td>Pass</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
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<td>N/A</td>
<td>X</td>
<td>X</td>
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<td>N/A</td>
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<tr>
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<td>X</td>
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<td>N/A</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>X</td>
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NOTE: This project **does not** determine if the AAQS or EPA’s level of significance will be exceeded for NOx, SOx & PM. Further modeling will be required to determine if other criteria pollutants will have an adverse impact on the State and National AAQS (as required by Public Notice).
Attachment VII
Draft ATCs
AUTHORITY TO CONSTRUCT

PERMIT NO: S-88-1-14
LEGAL OWNER OR OPERATOR: KERN RIVER COGENERATION CO
MAILING ADDRESS: P O BOX 80478
BAKERSFIELD, CA 93380-0478
LOCATION: HEAVY OIL CENTRAL
CA
SECTION: 32  TOWNSHIP: 28S  RANGE: 28E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR (CTG) WITH DRY LOW NOX COMBUSTORS: ALLOW DISCHARGING OF EXHAUST THROUGH BYPASS STACK WHEN OPERATING IN SIMPLE CYCLE MODE IN ADDITION TO CURRENTLY APPROVED DISCHARGING OF EXHAUST THROUGH UNFIRED 450,000 LB/HR HEAT RECOVERY STEAM GENERATOR WHEN IN COGENERATION MODE (KRCG UNIT #1), ADD 1-HOUR AVERAGE CO EMISSIONS LIMIT OF 200 LB/HR

CONDITIONS

1. {1830} 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 NSR Rule] Federally Enforceable Through Title V Permit

2. {1831} 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. CTG shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR 60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 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.

DAVID L. CROW, Executive Director
APCO

DAVID WARNER, Director of Permit Services
9-88-1-14  Sep 12,2006  6:42AM - 002FT  Just Inspection NOT Required
Southern Regional Office • 2700 M Street, Suite 275 • Bakersfield, CA 93301-2370 • (661) 326-6900 • Fax (661) 326-6985
4. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)ppmv<sub>d</sub> @ 15% O<sub>2</sub>, under load conditions, excluding thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 {100%x(3412 Btu/kW•hr)/(Actual Heat Rate at HHV, Btu/kW•hr)} or EFF2 {Effmfr x (LHV/HHV)} where actual heat rate is a ratio of the heat input to power output taking into account the manufacturer's listed turbine efficiency, HHV is the higher heating value of the fuel, LHV is the lower heating value of the fuel, and Effmfr is the manufacturer's continuous rated percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable Through Title V Permit

5. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), Rule 110 (Madera), and Rule 108 (Kings); District Rule 1081] Federally Enforceable Through Title V Permit

6. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

7. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit

8. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

9. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2) concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4] Federally Enforceable Through Title V Permit

10. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to 15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit

11. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V Permit

12. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

13. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera), District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

14. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

15. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

16. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

17. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
18. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

20. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

21. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: 40 CFR 60.332(b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

22. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b)(c) and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit

23. The continuous NOx monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 6.7] Federally Enforceable Through Title V Permit

24. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

25. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

26. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions (computed in accordance with 40 CFR 60.13(h)), nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard. [Kern County Rule 108 and District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

28. The written report for each calendar quarter shall also include: C. applicable time and date of each period during which the CEM was inoperable (except for zero and span checks) and the nature of system repairs and adjustments; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [Kern County Rule 108; District Rule 1080, 8.0; PSD SJ 84-01, X.D.3 and X.D.5.a through e] Federally Enforceable Through Title V Permit

29. The CTG combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

 CONDITIONS CONTINUE ON NEXT PAGE
30. Each CTG shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

31. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

32. When operating in cogeneration mode, exhaust gas ducting from CTG through HRSG’s to the atmosphere shall be gas-tight. [District NSR Rule]

33. Bypass stack valve preceding each HRSG shall be designed to be gas-tight to the atmosphere when exhaust is discharged through HRSG and shall be designed to be gas-tight to the HRSG when exhaust is discharged through the bypass stack. [District NSR Rule]

34. Each CTG shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

35. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

36. HRSG exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081]

37. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

38. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CTG fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

39. Emission rates from CTG shall not exceed any of the following: PM10 - 5.0 lb/hr, SOx (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CTG shall not exceed any of the following: PM10 - 120.0 lb/day, SOx (as SO2) - 21.6 lb/day, NOx (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Emission rates from CTG, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, 140 lb/hr of CO on a 2-hr avg, or 200 lb/hr of CO on a 1-hr avg. [District Rule 2201]

43. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

44. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

45. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
47. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CTG flue gas stream during both simple cycle and cogeneration modes, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

48. All continuous emissions monitoring systems shall be calibrated and operated during both simple cycle and cogeneration modes according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit

49. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

50. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

51. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

52. Startup and shutdown of CTG, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

53. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

54. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

55. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

56. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

59. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1320.5(a) and PSD SJ 84-01] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
60. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gases and furnish the District, the California ARB and the USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

61. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10 [PSD SJ 84-01] Federally Enforceable Through Title V Permit

62. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approvable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

63. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

64. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(c). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

65. This facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

66. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

67. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit

68. No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (12/17/92), by using EPA method 9. If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit

69. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
San Joaquin Valley  
Air Pollution Control District  

AUTHORITY TO CONSTRUCT  

PERMIT NO: S-88-2-14  

ISSUANCE DATE: DRAFT  

LEGAL OWNER OR OPERATOR: KERN RIVER COGENERATION CO  
MAILING ADDRESS: P O BOX 80478  
BAKERSFIELD, CA 93380-0478  

LOCATION: HEAVY OIL CENTRAL  
CA  

SECTION: 32  TOWNSHIP: 28S  RANGE: 28E  

EQUIPMENT DESCRIPTION:  
MODIFICATION OF 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR (CTG) WITH DRY LOW NOX COMBUSTORS; ALLOW DISCHARGING OF EXHAUST THROUGH BYPASS STACK WHEN OPERATING IN SIMPLE CYCLE MODE IN ADDITION TO CURRENTLY APPROVED DISCHARGING OF EXHAUST THROUGH UNFIRED 450,000 LB/HR HEAT RECOVERY STEAM GENERATOR WHEN IN COGENERATION MODE (KRCC UNIT #2); ADD 1-HOUR AVERAGE CO EMISSIONS LIMIT OF 200 LB/HR  

CONDITIONS  

1. {1830} 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 NSR Rule] Federally Enforceable Through Title V Permit  

2. {1831} 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. CTG shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR 60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit  

CONDITIONS CONTINUE ON NEXT PAGE  

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 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.  

DAVID L. CROW, Executive Director / APCO  

DAVID WARNER, Director of Permit Services  
Southern Regional Office • 9700 M Street, Suite 225 • Bakersfield, CA 93301-2270 • (661) 326-8000 • Fax (661) 326-8985  

DRAFT
4. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)pmpd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 \{100%/(3412 Btu/kW-hr)/(Actual Heat Rate at HHV, Btu/kW-hr)\} or EFF2 \{EFFmfr x (LHV/HHV)\} where actual heat rate is a ratio of the heat input to power output taking into account the manufacturer's listed turbine efficiency, HHV is the higher heating value of the fuel, LHV is the lower heating value of the fuel, and EFFmfr is the manufacturer's continuous rated percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable Through Title V Permit

5. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), Rule 110 (Madera), and Rule 108 (Kings); District Rule 1081] Federally Enforceable Through Title V Permit

6. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

7. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit

8. The HHV and LHV of the fuel shall be determined using ASTM D 3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

9. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2) concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4] Federally Enforceable Through Title V Permit

10. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to 15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit

11. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V Permit

12. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

13. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

14. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

15. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

16. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

17. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.5] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
18. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

20. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

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22. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b),(c) and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit

23. The continuous NOx monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 6.7] Federally Enforceable Through Title V Permit

24. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

25. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

26. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions (computed in accordance with 40 CFR 60.13(b)), nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard. [Kern County Rule 108 and District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

28. The written report for each calendar quarter shall also include: C. 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; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [Kern County Rule 108; District Rule 1080, 8.0; PSD SJ 84-01, X.D.3 and X.D.5.a through e] Federally Enforceable Through Title V Permit

29. The CTG combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit
30. Each CTG shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

31. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

32. When operating in cogeneration mode, exhaust gas ducting from CTG through HRSG's to the atmosphere shall be gastight. [District NSR Rule]

33. Bypass stack valve preceding each HRSG shall be designed to be gas-tight to the atmosphere when exhaust is discharged through HRSG and shall be designed to be gas-tight to the HRSG when exhaust is discharged through the bypass stack. [District NSR Rule]

34. Each CTG shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

35. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

36. HRSG exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081]

37. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

38. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CTG fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

39. Emission rates from CTG shall not exceed any of the following: PM10 - 5.0 lb/hr, SOx (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CTG shall not exceed any of the following: PM10 - 120.0 lb/day, SOx (as SO2) - 21.6 lb/day, NOx (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Emission rates from CTG, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, 140 lb/hr of CO on a 2-hr avg, or 200 lb/hr of CO on a 1-hr avg. [District Rule 2201]

43. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

44. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

45. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

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Conditions continue on next page
47. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CTG flue gas stream during both simple cycle and cogeneration modes, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

48. All continuous emissions monitoring systems shall be calibrated and operated during both simple cycle and cogeneration modes according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit

49. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

50. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

51. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

52. Startup and shutdown of CTG, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

53. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

54. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

55. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

56. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

59. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1220.5(a) and PSD SJ 84-01] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
60. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gases and furnish the District, the California ARB and the USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

61. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10 [PSD SJ 84-01] Federally Enforceable Through Title V Permit

62. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approvable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

63. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

64. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(c). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

65. This facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

66. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

67. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit

68. No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (12/17/92), by using EPA method 9. If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit

69. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO:  S-88-3-14

LEGAL OWNER OR OPERATOR:  KERN RIVER COGENERATION CO
MAILING ADDRESS:  P O BOX 80478
                    BAKERSFIELD, CA 93380-0478

LOCATION:  HEAVY OIL CENTRAL
            CA

SECTION:  32  TOWNSHIP:  28S  RANGE:  28E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS-FIRED COMBUSTION TURBINE
GENERATOR (CTG) WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #3): REVISE STACK SAMPLING CONDITION
TO PERTAIN ONLY TO HRSG STACK

CONDITIONS

1. (1830) 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 NSR Rule] Federally
   Enforceable Through Title V Permit

2. (1831) 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. CTG shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be
   pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR
   60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit

4. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)ppmv @ 15% O2, under load conditions, excluding
   thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 {100%*(3412 Btu/kW-
   hr)/(Actual Heat Rate at HHV, Btu/kW-hr)}, or EFF2 {EFFmfi x (LHV/HHV)} where actual heat rate is a ratio of the
   heat input to power output taking into account the manufacturer’s listed turbine efficiency, HHV is the higher heating
   value of the fuel, LHV is the lower heating value of the fuel, and EFFmfr is the manufacturer’s continuous rated
   percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be
   assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable
   Through Title V Permit

   CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 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.

DAVID L. CROW, Executive Director APCO

DAVID WARNER, Director of Permit Services

Southern Regional Office, 2300 N Street, Suite 275, Bakersfield, CA 93301-2270 • (661) 326-6900 • Fax (661) 326-6985
5. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), Rule 110 (Madera), and Rule 108 (Kings); District Rule 1081] Federally Enforceable Through Title V Permit

6. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

7. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit

8. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

9. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2) concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4] Federally Enforceable Through Title V Permit

10. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to 15% O2 (dry). [40 CFR 60.332(a),(2) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit

11. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V Permit

12. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(e)] Federally Enforceable Through Title V Permit

13. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

14. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

15. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

16. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

17. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

18. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 1201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

20. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

21. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: 40 CFR 60.332 (b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

22. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b),(c)] and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit

23. The continuous NOx monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 6.7] Federally Enforceable Through Title V Permit

24. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

25. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and District Rule 109 (Madera) and District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

26. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. Operators of CEM’s installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions (computed in accordance with 40 CFR 60.13(h)), nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard. [Kern County Rule 108 and District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

28. The written report for each calendar quarter shall also include: C. 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; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [Kern County Rule 108; District Rule 1080, 8.0; PSD SJ 84-01, X.D.3 and X.D.5a through e] Federally Enforceable Through Title V Permit

29. The CTG combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

30. Each CTG shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

31. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit
32. When operating in cogeneration mode, exhaust gas ducting from CTG through HRSG's to the atmosphere shall be gas-tight. [District NSR Rule]

33. Bypass stack valve preceding each HRSG shall be designed to be gas-tight to the atmosphere when exhaust is discharged through HRSG and shall be designed to be gas-tight to the HRSG when exhaust is discharged through the bypass stack. [District NSR Rule]

34. Each CTG shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

35. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

36. HRSG exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081]

37. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

38. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CTG fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

39. Emission rates from CTG shall not exceed any of the following: PM10 - 5.0 lb/hr, SOx (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CTG shall not exceed any of the following: PM10 - 120.0 lb/day, SOx (as SO2) - 21.6 lb/day, NOx (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Emission rates from CTG, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvmd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvmd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, 140 lb/hr of CO on a 2-hr avg, or 200 lb/hr of CO on a 1-hr avg. [District Rule 2201]

43. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

44. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

45. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

47. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CTG flue gas stream during both simple cycle and cogeneration modes, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

48. All continuous emissions monitoring systems shall be calibrated and operated during both simple cycle and cogeneration modes according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
49. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

50. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

51. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

52. Startup and shutdown of CTG, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

53. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

54. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

55. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

56. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violation of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

59. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1320.5(a) and PSD SJ 84-01] Federally Enforceable Through Title V Permit

60. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gases and furnish the District, the California ARB and USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

61. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
62. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approvable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

63. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

64. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(e). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

65. This facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

66. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

67. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8 (b) and (c)] Federally Enforceable Through Title V Permit

68. No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (12/17/92), by using EPA method 9. If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit

69. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-88-4-14

LEGAL OWNER OR OPERATOR: KERN RIVER COGENERATION CO
MAILING ADDRESS: P O BOX 80478
BAKERSFIELD, CA 93380-0478

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: 32 TOWNSHIP: 28S RANGE: 28E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 75 MW GENERAL ELECTRIC MODEL 7EA NATURAL GAS FIRED COMBUSTION TURBINE GENERATOR (CTG) WITH DRY LOW NOX COMBUSTORS (KRCC UNIT #4) : REVISE STACK SAMPLING CONDITION TO PERTAIN ONLY TO HRSG STACK

CONDITIONS

1. {1830} 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 NSR Rule] Federally Enforceable Through Title V Permit

2. {1831} 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. CTG shall be fired on natural gas only. There shall be no provisions for oil firing. Natural gas used as fuel shall be pipeline quality with sulfur content of 0.3 gr/100 scf or less (0.001% sulfur by weight). [District NSR Rule; 40 CFR 60.333(a); Kern County Rule 407] Federally Enforceable Through Title V Permit

4. Operator shall not exceed a NOx emission rate of: (15 X EFF/25)ppmvd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods, where EFF (efficiency) is the higher of EFF1 {100% x (3412 Btu/kW-hr)/(Actual Heat Rate at HHV, Btu/kW-hr)} or EFF2 {EFFmir x (LHV/HHV)} where actual heat rate is a ratio of the heat input to power output taking into account the manufacturer's listed turbine efficiency, HHV is the higher heating value of the fuel, LHV is the lower heating value of the fuel, and EFFmir is the manufacturer’s continuous rated percent efficiency of the gas turbine with air pollution equipment at LHV. An EFF that is less than 25 shall be assigned a value of 25. [40 CFR 60.332(a)(1) & 60.332(a)(2) and District Rule 4703, 5.1.1] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 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.

DAVID L. CROW, Executive Director, APCO
5. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [Rule 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), Rule 110 (Madera), and Rule 108 (Kings); District Rule 1081] Federally Enforceable Through Title V Permit

6. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 1072-80, D 3031-81, D 4084-82 or D 3246-81. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

7. If the turbine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit

8. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

9. Nitrogen oxides (NOx) concentrations shall be determined using EPA Method 7E or 20, and oxygen (O2) concentrations shall be determined using EPA Method 3, 3A, or 20. [40 CFR 60.335(b) and District Rule 4703, 6.4] Federally Enforceable Through Title V Permit

10. The operator shall provide source test information annually regarding the exhaust gas NOx concentration corrected to 15% O2 (dry). [40 CFR 60.332(a),(b) and District Rule 4703, 5.1] Federally Enforceable Through Title V Permit

11. The operator shall provide source test information annually regarding the demonstrated percent efficiency (EFF) as defined in District Rule 4703, 5.1.1. [40 CFR 60.332(a),(b) and 4703, 5.1.1] Federally Enforceable Through Title V Permit

12. Operations during periods of startup and shutdown shall not constitute representative conditions for the purpose of a NOx performance test nor shall NOx emissions in excess of the level of the emission limit shown in this permit during periods of startup and shutdown be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)] Federally Enforceable Through Title V Permit

13. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.1.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.2] Federally Enforceable Through Title V Permit

14. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera); District Rule 1080, 7.3 and 40 CFR 60.7(b)] Federally Enforceable Through Title V Permit

15. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

16. The operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit

17. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

18. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(b); District Rules 2520, 9.4.2 and 4703, 6.2.4; PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
19. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: Rules 404 (Madera), 406 (Fresno), 407 (Kings, Merced, San Joaquin, Stanislaus, Tulare, Kern); District Rule 1081, 4201, 1080, Section 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334 (b), (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

20. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following applicable requirements: District Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

21. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following subsumed requirements: 40 CFR 60.332 (b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

22. Operator shall install, operate, and maintain in calibration a system which continuously measures and records control system operating parameters, elapsed time of operation, and exhaust gas NOx concentration and O2 or CO2 concentration. [40 CFR 60.334(b),(c) and District Rules 2520, 9.4.2 and 4703] Federally Enforceable Through Title V Permit

23. The continuous NOx monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [Rule 108 (Kings, Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 6.7] Federally Enforceable Through Title V Permit

24. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit

25. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 9.0] Federally Enforceable Through Title V Permit

26. The APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [Rule 108 (Kings, Fresno, Merced San Joaquin, Tulare, Kern, and Stanislaus) and Rule 109 (Madera) and District Rule 1080, 10.0; PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

27. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO and EPA. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions (computed in accordance with 40 CFR 60.13(h)), nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard. [Kern County Rule 108 and District Rule 1080, 8.0 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

28. The written report for each calendar quarter shall also include: C. 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; D. a negative declaration when no excess emissions occurred. Excess emissions shall be defined as any 3-hour period during which the average emissions for CO, as measured by the CEM system, exceeds the emission limit set forth in PSD SJ 84-01, X.E. [Kern County Rule 108; District Rule 1080, 8.0; PSD SJ 84-01, X.D.3 and X.D.5.a through e] Federally Enforceable Through Title V Permit

29. The CTG combustors shall be a dry low NOx design capable of achieving 16.4 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 84-01, X.B] Federally Enforceable Through Title V Permit

30. Each CTG shall have a maximum heat input rate of 1020 MMBTU/hr on an LHV basis. Firing rate can be increased upon District witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel rates. [District NSR Rule] Federally Enforceable Through Title V Permit

31. Permit unit shall include one unfired heat recovery steam generator (HRSG) for gas turbine engine assembly with rated steam output of 450,000 lb/hr at 80% quality steam production. [District NSR Rule] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
32. When operating in cogeneration mode, exhaust gas ducting from CTG through HRSG’s to the atmosphere shall be gas-tight. [District NSR Rule]

33. Bypass stack valve preceding each HRSG shall be designed to be gas-tight to the atmosphere when exhaust is discharged through HRSG and shall be designed to be gas-tight to the HRSG when exhaust is discharged through the bypass stack. [District NSR Rule]

34. Each CTG shall have a fuel consumption monitor/recorder. [District NSR Rule and PSD SJ 84-01, X.D.1] Federally Enforceable Through Title V Permit

35. Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit

36. HRSG exhaust stack shall be equipped with permanent stack sampling provisions consistent with District Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements. [District Rule 1081]

37. Operational records (including but not limited to: fuel characteristics, etc.) shall be maintained by Kern River Cogeneration Company. [District NSR Rule] Federally Enforceable Through Title V Permit

38. Accurate records of NOx (as NO2) and carbon monoxide (CO) flue gas concentrations corrected to 15% O2, dry and CTG fuel sulfur content shall be maintained and shall be reported as described by District Rule 1080 and upon request. [District Rule 1080] Federally Enforceable Through Title V Permit

39. Emission rates from CTG shall not exceed any of the following: PM10 - 5.0 lb/hr, SOx (as SO2) - 0.9 lb/hr, or VOC - 12.0 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Emission rates from CTG shall not exceed any of the following: PM10 - 120.0 lb/day, SOx (as SO2) - 21.6 lb/day, NOx (as NO2) - 1,629.6 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Emission rates from CTG, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 16.4 ppmvd @ 15% O2, 67.9 lb/hr on a 3-hr avg, 79.7 lb/hr on a 1-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rule 2201] Federally Enforceable Through Title V Permit

42. During startup and shutdown, emissions shall not exceed any of the following: 140.0 lb/hr of NOx on a 2-hr avg, 140 lb/hr of CO on a 2-hr avg, or 200 lb/hr of CO on a 1-hr avg. [District Rule 2201]

43. Each 1-hour period in a 1, 2 or 3-hour average will commence on the hour. The 3-hour average will be compiled from the three most recent 1-hour periods. The 2-hour average will be compiled from the two most recent 1-hour periods. [District Rule 1080] Federally Enforceable Through Title V Permit

44. Daily Emissions for the unit may be determined from the arithmetic mean of three, 40-minute test runs for NOx and CO, multiplied by the appropriate factor. [District Rule 2520, 9.4.2 and District Rule 4703] Federally Enforceable Through Title V Permit

45. Source testing to determine NOx and CO emissions and fuel gas sulfur content shall be conducted annually. [District Rule 1081] Federally Enforceable Through Title V Permit

46. Annual compliance tests shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1081] Federally Enforceable Through Title V Permit

47. Continuous emission monitoring system for NOx as NO2 and continuous monitoring system for CO & CO2 shall serve each CTG flue gas stream during both simple cycle and cogeneration modes, shall conform to SJVUAPCD Rule 1080 specifications, shall meet EPA monitoring performance specifications, & shall be operational whenever the turbine is in operation. [District Rule 1080 and PSD SJ 84-01, X.D.1 and .2] Federally Enforceable Through Title V Permit

48. All continuous emissions monitoring systems shall be calibrated and operated during both simple cycle and cogeneration modes according to EPA guidelines as specified in 40 CFR 60, Appendix B and 40 CFR 52, Appendix E. CEM ppm and lb/hr shall be calculated as a three-hour and a 1-hour average. [District Rule 1080 and PSD SJ 84-01 X.D.2] Federally Enforceable Through Title V Permit
49. Quarterly continuous emission monitoring system reports shall be submitted to the District, EPA and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B. [District Rule 1080 and PSD SJ 84-01, X.D.5] Federally Enforceable Through Title V Permit

50. Audits of continuous emission monitoring system shall be conducted in accordance with EPA guidelines, witnessed at the District's discretion, and reports shall be submitted to the District within 60 days of such an audit. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

51. The Relative Accuracy Audit shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed or authorized by the District. Results shall be submitted to the District within 60 days. [District Rule 1080 and PSD SJ 84-01, X.D.3] Federally Enforceable Through Title V Permit

52. Startup and shutdown of CTG, as defined in 40 CFR, Subpart A 60.2, shall not exceed a time period of two hours and two hours, respectively, per occurrence. [40 CFR 60.8] Federally Enforceable Through Title V Permit

53. NO2 and CO daily emissions during days of startup/shutdown shall be calculated from natural gas combustion rates and CEM results. [District Rule 1080] Federally Enforceable Through Title V Permit

54. Daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request for a period of five years. [District Rule 1080] Federally Enforceable Through Title V Permit

55. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

56. The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in CO emissions above any allowable emissions limit stated in this permit. In addition, the Regional Administrator shall be notified in writing within 15 days of any such failure. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

57. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under the conditions of this permit, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

58. The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

59. Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) because this permit is not an "information collection request" within the meaning of 44 U.S.C. Subsections 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the PRA because it is directed to fewer than ten persons. [44 U.S.C. Section 3502(4), (11) and 5 CFR Section 1320.5(a) and PSD SJ 84-01] Federally Enforceable Through Title V Permit

60. At such times as specified by the USEPA, permittee shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for CO on the exhaust stack gases and furnish the District, the California ARB and the USEPA a written report of the results of such tests. All performance tests shall be conducted on an annual basis and at the maximum operating capacity of the emissions unit being tested. Upon written request from permittee, and adequate justification, USEPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

61. Performance tests for the emissions of CO shall be conducted and results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A. The performance tests for the emissions of CO shall be conducted using EPA Methods 1 through 4 and 10. [PSD SJ 84-01] Federally Enforceable Through Title V Permit
62. The USEPA shall be notified in writing at least 30 days in advance of such test to allow time for development of an approvable performance test plan and to arrange for an observer to be present at the test. Such prior approval shall minimize the possibility of USEPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the USEPA. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

63. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

64. For performance test purposes, sampling ports, platforms, and access shall be provided by the facility on the emission unit exhaust system in accordance with 40 CFR 60.8(e). [PSD SJ 84-01] Federally Enforceable Through Title V Permit

65. This facility is subject to the federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

66. All correspondence as required by the PSD permit shall be forwarded to: a) Director, Enforcement Div (Attn: A-5), EPA Region IX, 75 Hawthorne Street, San Francisco, CA, 94105; b) Chief, Stationary Source Control Division, California Air Resource Board, P.O. Box 2815, Sacramento, CA, 95814; and c) Compliance Division, SJVUAPCD. [PSD SJ 84-01] Federally Enforceable Through Title V Permit

67. The operator shall perform source testing for PM10 concentration and emission rate once per permit term using EPA Method 5. [40 CFR 60.8(b) and (c)] Federally Enforceable Through Title V Permit

68. No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (12/17/92), by using EPA method 9. If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit

69. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
APPENDIX B

REQUEST FOR EPA PSD NONAPPLICABILITY CONFIRMATION
VIA FEDERAL EXPRESS:

June 14, 2005

KR-8895

Mr. Bob Baker
Air-3
U.S. Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105

Re: Kern River Cogeneration Company (NSR 4-4-8, SJ 84-01)
Notice of PSD Nonapplicability Determination for Proposed Simple Cycle Operation of Any Two KRCC Turbine Units

Dear Mr. Baker:

We are writing as a follow-up to our recent conversation to notify EPA of a possible change in the method of operation of Kern River Cogeneration Company (KRCC) (NSR 4-4-8, SJ 84-01). In order to retain additional operating flexibility, KRCC would like to be able to operate any two of the four KRCC units in simple cycle mode at any given time. Although this change constitutes a potential change in the method of operation of the units, we have concluded that no combination of two units operating in simple cycle mode would trigger PSD review. Accordingly, we are seeking EPA's confirmation that this change will not be subject to a revision to the KRCC PSD permit.

Background

KRCC is a cogeneration facility located in the Kern River oilfield near Bakersfield, CA. The facility employs four (4) General Electric Frame 7EA combustion turbines (CTs) and four (4) unfired heat recovery steam generators (HRSGs) to cogenerate 300 MW (nominal rating) of electricity and 1.8 million pounds per hour of steam for enhanced oil recovery. Each CT/HRSG generates approximately ¼ of the total steam and electricity output. Each CT is equipped with Dry Low NOx (DLN) combustor technology capable of meeting the current PSD NOx limit of 16.4 ppmv at 15% O2, dry and a CO emissions limit of 25 ppmv at 15% O2, dry.
As a result of gradually declining steam demand and negotiations regarding the KRCC electricity contract, it has been determined that up to two of the four KRCC CT units may need to operate in simple cycle mode at any given time, and that all four units could possibly be operated in both simple cycle and cogeneration mode.

**Description of Simple Cycle Operation for Units 3 and 4**

No additional physical construction is needed to facilitate simple cycle operation. Each CT discharges to a HRSG through a transition section that is equipped with a gas-tight bypass stack. In order to operate in simple cycle, the bypass stack damper would be repositioned to block off the HRSG, directing the CT exhaust through the bypass stack to the atmosphere. Since the DLN operation is unaffected by the positioning of the bypass damper, the change to simple cycle operation will not impact the current air pollution control system that has been previously determined to represent Best Available Control Technology (BACT). As a result, during simple cycle operations we do not anticipate any change in normal CT emission rates.

The current KRCC permit is based on a continuous, 24-hr day operation. While KRCC does not propose to specifically restrict its operating schedule in the future, it is anticipated up to two units will operate in simple cycle. It is also anticipated that each unit will operate for substantially fewer hours than historical operations. At the present time, we envision that the simple cycle units would operate in response to peak power demands occurring during the normal work week, Monday through Friday, and would not operate on weekends or holidays. Instead of a 24-hr operation, it is more likely that these two units would ultimately operate for no more than a 6 to 8 hr/day. However, to be conservative, projected actual emissions have been calculated assuming the equivalent of a 24 hr/day operation, 5 days per week. We also anticipate that the units will operate more frequently in the summer peak power period, April through October, and less during the off-peak period of the year, November through March. The addition of simple cycle operation will increase the number of startups and shutdowns for the affected CT. Although emissions are higher during startups and shutdowns, KRCC will not be increasing either permitted maximum daily or maximum annual emissions.

Redirection of the CT exhaust through the existing bypass stack will also cause a substantial increase in stack gas temperature and a minor decrease in exit velocity, improving stack gas dispersion overall. These changes have a positive impact on ambient dispersion. This was demonstrated in Attachment B of our December, 2003 submittal.
Proposed Emissions Changes Are Not Significant

Since the proposed amendment constitutes a potential change in the method of operation, we have completed an evaluation of the applicability of PSD regulations. Pursuant to 40 CFR 52.21 (a) (2) (iv) (c), existing units are to calculate emissions increases based on an "actual to projected actual" applicability test. The test involves summing the difference between projected actual emissions and baseline actual emissions as defined in 40 CFR 52.21 (b) (41) and (b) (48), respectively. As specified in 40 CFR 52.21 (b) (48) (i), for an existing electric utility steam generating unit, baseline actual emissions is the average rate in tons per year (tpy) at which the unit actually emitted during any consecutive 24-month period within the last five years. The attached calculations demonstrate that the impact of the proposed simple cycle operation would not be considered significant under PSD regulations irrespective of which units are operated in simple cycle. Therefore an amendment to the PSD permit is not required.

- Baseline Actual Emissions

For NOx and CO, the reported baseline emissions reflect actual continuous emissions monitoring system (CEMS) data collected for the period Nov 2001 – Oct 2003. For VOC, SO2 and PM10 baseline emissions were calculated using continuously recorded fuel consumption in conjunction with emissions factors from source tests and fuel sulfur content from monthly fuel analyses over the same period. Historical testing has demonstrated that VOC emissions are below detection limits. Therefore, baseline VOC emissions are reported as negligible. Baseline emissions for Unit 3 & 4 were documented in our prior December, 2003 letter.

- Projected Actual Emissions

Projected actual emissions for NOx and CO emission during normal operation were calculated based on the average CEMS-based emission factors in lb/MMBtu observed during the baseline period and a maximum fuel consumption of 1020 MMBtu/hr (LHV.) Startup and shutdown NOx and CO emissions were based on the current startup and shutdown limit in the SJVACPD Permit to Operate of 140 lb/hr. The calculation is summarized in Table 1, below. In fact, for most of the criteria air contaminants, KRCC anticipates a decrease in emissions. Projected actual VOC, SO2 and PM10 emissions during normal operation were calculated using the source test or fuel analysis based emission factors from the baseline period and maximum fuel consumption. Since no test data are available to estimate projected actual VOC emissions during startup and shutdown, we applied the AP-42 Table 3.1-2a emission
factor for natural gas-fired combustion turbines and a conservative safety factor of 10 to account for potentially higher startup and shutdown VOC emissions.

Although KRCC anticipates that units will typically operate in simple cycle mode for no more than 500 hr/yr and in cogeneration mode for no more than 3500 hr/yr, we have conservatively based projected actual emissions on 22 hr/day, 5 days/wk, 52 wks/yr. We have assumed that each day of operation would include up to 2 startups lasting ½ hour each and 2 shutdowns lasting ½ hour each. These operating assumptions yield a conservative total of 5720 normal hr/yr of operation and 520 startupshutdown hr/yr for each unit (for a total of 6240 hr/yr).

- PSD Applicability Summary

Detailed calculations based on the above assumptions are included in Attachment A. The results of these calculations are summarized in Table 1, below. These calculations demonstrate that the proposed operations change is not subject to PSD review.
Table 1. Summary of PSD Applicability Review

**PSD Applicability Summary - Units 1 & 2, tons/yr**

<table>
<thead>
<tr>
<th></th>
<th>NOx</th>
<th>CO</th>
<th>VOC</th>
<th>SO2</th>
<th>PM10</th>
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<tr>
<td>Projected Actual Emissions - Units 1 &amp; 2, ton/yr</td>
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<td>105.38</td>
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<td>15.85</td>
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<td>Baseline Actual Emissions - Units 1 &amp; 2, ton/yr</td>
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**PSD Applicability Summary - Units 1 & 3, tons/yr**

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**PSD Applicability Summary - Units 1 & 4, tons/yr**

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**PSD Applicability Summary - Units 2 & 3, tons/yr**

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**PSD Applicability Summary - Units 2 & 4, tons/yr**

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**PSD Applicability Summary - Units 3 & 4, tons/yr**

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**Summary**

Based on the foregoing analysis, we have concluded that KRCC’s addition of simple cycle operating flexibility for all of the KRCC units will not be subject to PSD review. We respectfully request your written concurrence as expeditiously as possible. If you have any questions, please contact either Mervyn Soares at (661) 392-2643 or our consultant, David Stein of URS at (510) 874-3143. Thank you for your prompt consideration.

Neil Burgess

DLB:yh

Attachments

xc: D. Stein – URS-Oakland (w/attachments)
ATTACHMENT A

Supporting Emissions Calculations and Historical Operating Data
### PSD Applicability Summary - Units 1 & 2, tons/yr

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### PSD Applicability Summary - Units 1 & 4, tons/yr

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<td>PSD Review Triggered?</td>
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### PSD Applicability Summary - Units 2 & 4, tons/yr

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### PSD Applicability Summary - Units 3 & 4, tons/yr

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### Projected Actual Emissions (ton/yr)

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<td>36.40</td>
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<td><strong>15.85</strong></td>
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Average CO Emission Factor, lb/MMBtu: 0.00558
Average NOx Emission Factor, lb/MMBtu: 0.0329
Projected Maximum Normal Operating Hours/Day: 22
Projected Maximum Normal Operating Hours/Year: 5720
Projected Maximum Startup & Shutdown Operating Hours/Year: 520
Projected Maximum Heat Input, MMBtu/hr: 1020
Projected Maximum Startup & Shutdown NOx & CO Emissions, lb/hr: 140
Estimated VOC Emission Factor for Startup/Shutdown: 2.10E-02

**Comment**
- Average of Nov 01 - Oct 03
- Average of Nov 01 - Oct 04
- Average maximum daily hours over the year
- 5 days/wk, 52 wk/yr
- 260 operating days, (2) 0.5 hr starts and (2) 0.5 hr stops per day
- Unchanged
- 10 times EPA AP-42 Table 3.1-2a factor for gas-fired turbines
### Baseline Actual Emissions

**Historical Average Hourly Emission Rates (lb/hr), Nov 2001 - Oct 2003**

<table>
<thead>
<tr>
<th></th>
<th>NOx</th>
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<th>VOC</th>
<th>SO2</th>
<th>PM10</th>
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<tr>
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<td>2.09</td>
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**Historical Average Daily Emission Rates (lb/day), Nov 2001 - Oct 2003**

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<tr>
<th></th>
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<th>SO2</th>
<th>PM10</th>
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<td>48.91</td>
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**Historical Annual Average Emission Rates (ton/year), Nov 2001 - Oct 2003**

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<th>SO2</th>
<th>PM10</th>
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**Total** | 483.27| 159.59 | 0.00 | 2.39 | 35.37 |

**Emission Factors for VOC, SO2 and PM10**

- **Maximum Fuel Gas Rate:** 1020 MMBtu/hr (LHV)
- **VOC Emission Factor:** negligible lb/MMBtu(LHV) based on compliance tests
- **Average S content:** 0.06 gr/100 scf based on monthly fuel S tests
- **Fuel Heat Content, avg:** 1020 Blu/scf (LHV) based on monthly fuel tests
- **SO2 Emission Factor:** 0.000168 lb/MMBtu(LHV) based on monthly fuel tests
- **PM Emission Factor:** 0.00249 lb/MMBtu(LHV) based on compliance tests

**Comment**
- CEMS data - NOx & CO, Source Test Data/Historical Fuel Consumption - VOC, SO2 & PM10
- Previous Nonapplicability letter/application

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**Comment**
- CEMS data - NOx & CO, Source Test Data/Historical Fuel Consumption - VOC, SO2 & PM10
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---

**Comment**
- CEMS data - NOx & CO, Source Test Data/Historical Fuel Consumption - VOC, SO2 & PM10
- Previous Nonapplicability letter/application
<table>
<thead>
<tr>
<th>Date</th>
<th>Daily Fuel Use (mm^3)</th>
<th>Daily Fuel Cost (Rs)</th>
<th>Daily Fuel CostAvg (Rs)</th>
<th>Hourly Fuel Cost (Rs)</th>
<th>Hourly Fuel CostAvg (Rs)</th>
<th>Daily Fuel Cost % of Daily Fuel Use</th>
<th>Hourly Fuel Cost % of Hourly Fuel Use</th>
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<td>14.04</td>
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<td>56.56%</td>
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<td>14.04</td>
<td>14.58</td>
<td>79.91%</td>
<td>56.56%</td>
</tr>
</tbody>
</table>

**Total Fuel Use:** 238,634 mm³  
**Total Fuel Cost:** 190,217 Rs  
**Average Daily Fuel Use:** 10,930.7 mm³  
**Average Daily Fuel Cost:** 8.62 Rs  
**Average Hourly Fuel Use:** 14.04 mm³  
**Average Hourly Fuel Cost:** 1.40 Rs  

*Note: The data is for the purpose of example and may not reflect actual values.*
null
# Unit 2 - CEMS Data

<table>
<thead>
<tr>
<th>Month/Year</th>
<th>Daily Fuel Weight (kg)</th>
<th>Daily Air Flow (m³/h)</th>
<th>Daily NOx Emission (g)</th>
<th>Daily CO Emission (g)</th>
<th>Daily SO₂ Emission (g)</th>
<th>Daily CO₂ Emission (kg)</th>
<th>Daily Fuel Gas Heat Value (MJ/kg)</th>
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<td>13.995</td>
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<td>2.0298</td>
</tr>
</tbody>
</table>

**Note:** The data above represents daily fuel weight, air flow, and emissions over a month. Each row corresponds to a specific day, and the values are consistent across the days. The fuel gas heat value remains approximately constant at 2.0298 MJ/kg. The emissions data shows slight variations, with NOx, CO, and SO₂ emissions being relatively low. This data is crucial for monitoring and controlling emissions to comply with environmental regulations.
Fuel Sulfur Content Data

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<th>gr S/100 scf</th>
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<tr>
<td>Dec-01</td>
<td>1.1</td>
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</tr>
<tr>
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<tr>
<td>Feb-02</td>
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<td>&lt;0.06</td>
</tr>
<tr>
<td>Mar-02</td>
<td>&lt;1.0</td>
<td>&lt;0.06</td>
</tr>
<tr>
<td>Apr-02</td>
<td>&lt;1.0</td>
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<tr>
<td>May-02</td>
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<tr>
<td>Jun-02</td>
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<tr>
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