Kern River Cogeneration Company | Box 80478, Bakersfield, CA 93380 • (661) 615-4630

Neil E. Burgess, Executive Director

July 11, 2011

KR-10185

Mr. Chris Marxen
Compliance Office Manager
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Re: Kern River Cogeneration Company (82-AFC-2C)
Petition For Insignificant Amendment

Dear Mr. Marxen:

This petition is being submitted to request the operation of the combustion gas turbine units at Kern River Cogeneration Company in an extended startup mode. The petition requests a new category and 12 hour duration of start up with the same permitted emission limits as the normal two hour startup period. The 12 hour startup period is used to tune the units, typically following a combustion hardware replacement.

This petition is consistent with a similar petition submitted to the San Joaquin Valley Air Pollution Control District (SJVAPCD). Appendix A of the attached petition includes the complete copy of the SJVAPCD application.

The petition requires the modification of applicable conditions of certification, however, the proposed changes pose no potential for adverse environmental impacts due to the request to not increase the permitted daily emission limits.

If you have any questions, please contact Daniel Beck at (661) 615-4660.

N E Burgess

CLE:ah

Attachments

1.0 OVERVIEW

Kern River Cogeneration Company (KRCC) received original approval (82-AFC-2C) 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 enhanced Dry Low NOx (DLN1+) 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 (Units 3 and 4) in simple cycle mode and removal of a requirement to meet explicit cogeneration efficiency criteria was approved by the CEC on April 9, 2004. An additional post-certification petition to extend flexibility for Units 1 and 2 to also operate in either simple cycle or cogeneration mode was approved as an insignificant change on January 20, 2006. Another additional post-certification petition to approve the installation of DLN1+ combustors was approved on May 21, 2008.

This petition is being submitted to request that KRCC be permitted to operate all four of the combustion gas turbine units in an extended start-up period for the purpose of conducting tuning of the units following removal and replacement of combustion hardware. KRCC submitted an application on April 13, 2011 to the San Joaquin Valley Air Pollution Control District (SJVAPCD) for the same request of an extended start-up to conduct tuning of the gas turbine units. This petition is consistent with the attached application submittal to the SJVAPCD (see Appendix A). The petition requests the addition, elimination or modification of applicable conditions of certification. The proposed changes pose no potential for adverse environmental impacts, due to the request to not increase the permitted daily emission limits.

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 ¼ of the total steam and electricity output. Each CT is equipped with enhanced Dry Low NOx (DLN1+) combustor technology capable of meeting the current SJVAPCD Rule 4703 NOx limit for gas turbines of 3 ppmvd at 15% O2, and a CO emissions limit of 25 ppmvd at 15% O2.

The proposed change involves the need for tuning of the units following removal and replacement of combustion hardware. As like in kind combustion hardware is installed during routine replacement, there will be slight changes in the tolerances of the assembly that will result in a change to the emissions profile. This emissions profile variation requires the unit to undergo dynamic performance testing and corresponding operating optimization set point adjustments of the combustion system, referred to as tuning. The tuning of the unit is conducted to achieve the optimum emissions profile and ensure the safety and parts longevity of the unit. The period of time required for tuning a unit is 12 hours. These tuning periods are required after the completion of a maintenance outage, however additional tuning may be required depending upon the results of the initial post-outage tuning period. Tuning may also be recommended as a repair option if emissions performance begins to decline.

As the turbines are currently permitted, tuning will exceed the units' emissions limits during normal operation. To date, KRCC has petitioned the APCD hearing board for variances to tune the units. However, KRCC was informed by the APCD compliance staff that they would like to reduce the number of variances granted by the District. Following discussions with

APCD staff, KRCC has submitted an application to the APCD for a modification of each unit's Permit to Operate (PTO) to eliminate the need for further variance petitioning. This petition to the CEC requests the same permitted tuning operations requested of the APCD.

Each turbine has daily emission limits of: PM 10 - 120.0 lb/day, SOx (as SO2) – 21.6 lb/day, NOx (as NO2) – 552.8 lb/day, VOC – 288.0 lb/day, and CO – 1056.0 lb/day. These limits will not be changed as a result of this application.

KRCC requests a new operating parameter: Tuning start-up

KRCC is requesting a permit modification that will allow existing start-up emission limits throughout an extended start-up period defined as a tuning start-up. After a 12 hour tuning start-up, the unit is set to normal base load operations and meets 3 hour average permitted emission limits.

A tuning start-up will last 12 hours -

- Will result in no daily emissions limit changes
- Will result in no start-up NOx and CO emissions limit changes
- Tuning start-up transitional operation period duration allowed per SJVAPCD Rule 4703, Section 5.3.3

The 12 hour duration tuning start-up period being proposed is allowed per SJVAPCD Rule 4703, Section 5.3.3.

As such, the following modifications are proposed, with new language shown **double-underlined and bolded**, and deleted language shown in ~~strikethrough~~:

AQ-17

a. Startup or ~~planned~~ shutdown of a CTG shall not exceed a time period of two (2) continuous hours**, except tuning startup periods as defined here in**.
b. For all CTG's the following emission limits shall apply during times of startup**,** ~~or~~ shutdown **or tuning startup** and shall be averaged over the time period specified below:

NO_2	140 lbm/hr (2-hr average) not to exceed ~~3360~~ **552.8** lb/day
CO	200 lbm/hr (1-hr average), 140 lbm/hr (2-hr average) not to exceed ~~3360~~ **1056** lb/day

Dynamic performance testing and corresponding operating optimization set point adjustments of the combustion system of the CGT shall be defined as a tuning start-up used to tune the CGT combustion system to meet permitted emission limits. A tuning start-up period shall not exceed a time period of 12 consecutive hours per occurrence.

AQ-18

Pollutant emissions from each combustion turbine shall not exceed the following limits except during times of startup, ~~or~~ shutdown **or tuning startup periods** as defined in Condition AQ-17 or transitional periods as defined here in:

Gas Fired Case:	
Particulates	-5.0 lbm/hr as PM10
	-120.0 lbm/day as PM10
Sulfur Compounds	-0.9 lbm/hr as SOx (as SO_2)
	-21.6 lb/day as SOx (as SO_2)
	-0.6 lbm/hr as SO_4
Hydrocarbons	-12.0 lbm/hr (Non-methane)
	-288.0 lbm/day
Carbon Monoxide	-1056 lbm/day and
	-25 ppmv at 15% O_2
	-44.0 lbm/hr/ 3-hour rolling average

After April 30, 2008, the emissions of oxides of nitrogen from each combustion turbine shall not exceed the following limits ~~(these limits are to supersede the NOx emission limits shown above)~~:

Oxides of Nitrogen	-552.8 lbm/day and
	-12.4 lbm/hr as NO2 and 3 ppmv at 15% O2 calculated on a 3 hour rolling average.

Protocol: For nitrogen dioxide, the Kern River Cogeneration Company (KRCC) shall identify the following for each day of operation, except during times of start up, ~~or~~ shutdown **or tuning startup**, as defined in Condition AQ-17:

(1) the daily maximum hourly mass emission rate (lbs/hr),
(2) the daily maximum rolling 3-hour average mass emission rate (lbs/hr) and
(3) the total daily mass emissions (lbs/day).

For carbon monoxide, KRCC shall identify the total daily mass emissions (lbs/day) for each day of operation, except during times of start up, ~~or~~ shutdown, **or tuning startup,** as defined in Condition AQ-17.

For particulate matter (PM10), sulfur compounds (SO_2 and SO_4) and non-methane hydrocarbons, KRCC shall determine through the initial source test, the fuel based emission factors (lbs/mmBtu) for each pollutant. Using these factors, KRCC shall determine the maximum allowable fuel input rate (mmBtu/hr) that would comply with

the above stated emission limits (lbs/hr) (i.e., emission limit / emission factor = fuel input rate). KRCC shall then compare these fuel input rates (as determined above) with the actual daily maximum fuel input rate (mmBtu/hr) for each day of operation, except during times of start up**,** ~~or~~ shutdown, **or tuning startup,** as defined in Condition AQ-17.

KRCC shall submit all excess emission reports and break down reports to demonstrate compliance with all concentration limits.

A transitional period is defined as a primary re-ignition period which must meet the following three conditions:

- Shall not exceed one hour
- NOx emissions shall not exceed 15 ppmvd @ 15% O2 during that hour and
- CO emissions shall not exceed 25 ppmvd @ 15% O2.

Verification: KRCC shall submit quarterly emission reports with all the information identified in the above protocol to the CEC compliance project manager.

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

The modifications are necessary in order to allow KRCC to tune the unit following replacement of combustion hardware, without needing a variance.

(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

The modification is not based on information that was known to the petitioner at the time of the certification. The DLN1+ combustor is a recent GE technology that was not available at the time of the original approved decision, and the tuning requirements of the DLN1+ technology were not known at that time.

(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. The tuning of the DLN1+ combustion technology does not undermine

the basis for the original CEC approval, due to the tuning operations not exceeding the daily permitted emission limits, which are currently lower than what was approved in the original decision.

(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 is being performed by the SJVAPCD. The proposed change will not increase allowable daily or annual emissions from the facility. Based on the above, the proposed change will not have any significant adverse air quality impact. 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, pending SJVAPCD analysis and approval.

(G) A discussion of how the modification affects the public

The proposed revisions will not change the effect on the public since the current daily permitted emission limits will not be exceeded.

(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:

	Physical Address	Mailing Address
Chevron	1546 China Grade Loop	P.O. Box 1392

Bakersfield, CA 93308 Bakersfield, CA 93302

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

The proposed revisions will not change the effect on the public since the current daily permitted emission limits will not be exceeded.

3.0 SCHEDULE

The SJVAPCD has received the application with 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 conduct tuning operations in accordance with the anticipated SJVAPCD approved permits.

4.0 PETITION CONTACTS

Questions regarding this petition should be directed to:

Daniel Beck
HES Supervisor
Kern River Cogeneration Company
P.O. Box 81438
Bakersfield, CA 93380
Phone: (661) 615-4660
Fax: (661) 615-4610
Email: dlbeck@sycamore.com

5.0 SUMMARY

This minor amendment will require changes to existing conditions of certification, but will have no significant environmental impacts.

Expedited processing of this petition is respectfully requested.

APPENDIX A

APPLICATION SUBMITTED TO THE SJVAPCD

Kern River Cogeneration Company | Box 80478, Bakersfield, CA 93380 • (661) 615-4630

Neil E. Burgess, Executive Director

HAND DELIVERED

April 13, 2011

KR-10132

Mr. Leonard Scandura
San Joaquin Valley APCD
34946 Flyover Court
Bakersfield, CA 93308

Re: **Permit Modification Applications: S-88**

Dear Mr. Scandura:

Kern River Cogeneration Company (KRCC) is applying to modify the permits of the four combustion gas turbine units. Please find attached a check for $284.00 and applications for each turbine unit. A check for $76.00 and a Certificate of Conformity review request is also included with this application.

KRCC operates four GE combustion gas turbines that use a combustion hardware technology (DLN1+) capable of meeting 3 ppm NOx and 25 ppm CO permitted limits. As like in kind combustion hardware is installed during routine replacement, there will be slight changes in the tolerances of the assembly that will result in a change to the emissions profile. This emissions profile variation requires the unit to undergo dynamic performance testing and corresponding operating optimization set point adjustments of the combustion system, referred to as tuning. The period of time required for tuning a unit is approximately 12 hours.

To date, KRCC has petitioned the APCD hearing board for variances to tune the units. However, KRCC was informed by the APCD compliance staff that they would like to reduce the number of variances granted by the District. Following discussions with APCD staff, KRCC is applying for a modification of each unit's Permit to Operate (PTO) to eliminate the need for further variance petitioning. As such, KRCC is proposing a new operating parameter (tuning start-up) that will allow for the required performance testing following parts replacement.

Please contact Cory Eagar at (661) 615-4681 or Daniel Beck at (661) 615-4660 if you have any questions.

CLE:yh

Attachments

xc: D. Jordan – EPA (w/attachments)
R. Fletcher – CARB (w/attachments)

San Joaquin Valley Air Pollution Control District

www.valleyair.org

Permit Application For:

[ ] AUTHORITY TO CONSTRUCT (ATC) - New Emission Unit
[X] AUTHORITY TO CONSTRUCT (ATC) - Modification Of Emission Unit With Valid PTO/Valid ATC
[ ] AUTHORITY TO CONSTRUCT (ATC) - Renewal of Valid Authority to Construct
[ ] PERMIT TO OPERATE (PTO) - Existing Emission Unit Now Requiring a Permit to Operate

1. PERMIT TO BE ISSUED TO: Kern River Cogeneration Company

2. MAILING ADDRESS: P.O. Box 80478
STREET/P.O. BOX: _____
CITY: Bakersfield STATE: CA ZIP CODE: 9-DIGIT 93380

3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED:
STREET: SW China Grade Loop CITY: Bakersfield
_____/4 SECTION 32 TOWNSHIP 28S RANGE 28E

WITHIN 1,000 FT OF A SCHOOL? [ ] YES [X] NO

S.I.C. CODE(S) OF FACILITY (*If known*): 4931

4. GENERAL NATURE OF BUSINESS: Power and steam generation

INSTALL DATE: 1984

5. TITLE V PERMIT HOLDERS ONLY: Do you request a COC (EPA Review) prior to receiving your ATC (*If yes, please complete and attach a Compliance Certification form (TVFORM-009)*)? [X] YES [ ] NO

6. DESCRIPTION OF EQUIPMENT OR MODIFICATION FOR WHICH APPLICATION IS MADE (include Permit #'s if known, and use additional sheets if necessary)

Modification of Kern River Cogeneration Company Combustion Gas Turbine Unit #1 (S-88-1-17) PTO to allow tuning of the unit during tuning start-up periods with higher than normal emissions, eliminating the need to obtain a variance.

7. PERMIT REVIEW PERIOD: Do you request a three- or ten-day period to review the draft Authority to Construct permit? Please note that checking "YES" will delay issuance of your final permit by a corresponding number of working days. See instructions for more information on this review process.
[ ] 3-day review
[X] 10-day review
[ ] No review requested

8. HAVE YOU EVER APPLIED FOR AN ATC OR PTO IN THE PAST? [X] YES [ ] NO
If yes, ATC/PTO #:_____

9. IS THIS APPLICATION FOR THE CONSTRUCTION OF A NEW FACILITY? [ ] YES [X] NO
(If "Yes" is checked, please complete the CEQA Information form)

10. IS THIS APPLICATION SUBMITTED AS THE RESULT OF EITHER A NOTICE OF VIOLATION OR A NOTICE TO COMPLY? [ ] YES [X] NO
If yes, NOV/NTC #:_____

Optional Section

11. DO YOU WANT TO RECEIVE INFORMATION ABOUT EITHER OF THE FOLLOWING VOLUNTARY PROGRAMS?

[ ] "HEALTHY AIR LIVING (HAL) BUSINESS PARTNER"

[ ] "INSPECT"

12. TYPE OR PRINT NAME OF APPLICANT: Neil E. Burgess

TITLE OF APPLICANT: Executive Director

13. SIGNATURE OF APPLICANT: Neil E. Burgess DATE: 4/13/11

PHONE #: (661) 615-4660
FAX #: (661) 615-4610
E-MAIL: dlbeck@sycamore.com

FOR APCD USE ONLY:

DATE STAMP:

FILING FEE RECEIVED: $_____ CHECK #:_____

DATE PAID: _____

PROJECT #: _____ FACILITY ID:_____

San Joaquin Valley Air Pollution Control District

www.valleyair.org

Permit Application For:

[ ] AUTHORITY TO CONSTRUCT (ATC) - New Emission Unit
[X] AUTHORITY TO CONSTRUCT (ATC) - Modification Of Emission Unit With Valid PTO/Valid ATC
[ ] AUTHORITY TO CONSTRUCT (ATC) - Renewal of Valid Authority to Construct
[ ] PERMIT TO OPERATE (PTO) - Existing Emission Unit Now Requiring a Permit to Operate

1. PERMIT TO BE ISSUED TO: Kern River Cogeneration Company

2. MAILING ADDRESS: P.O. Box 80478
STREET/P.O. BOX: _____
CITY: Bakersfield STATE: CA ZIP CODE: 9-DIGIT 93380

3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED:
STREET: SW China Grade Loop CITY: Bakersfield
_____/4 SECTION 32 TOWNSHIP 28S RANGE 28E

WITHIN 1,000 FT OF A SCHOOL? [ ] YES [X] NO

S.I.C. CODE(S) OF FACILITY (*If known*): 4931

4. GENERAL NATURE OF BUSINESS: Power and steam generation

INSTALL DATE: 1984

5. TITLE V PERMIT HOLDERS ONLY: Do you request a COC (EPA Review) prior to receiving your ATC (*If yes, please complete and attach a Compliance Certification form (TVFORM-009)*? [X] YES [ ] NO

6. DESCRIPTION OF EQUIPMENT OR MODIFICATION FOR WHICH APPLICATION IS MADE (include Permit #'s if known, and use additional sheets if necessary)

Modification of Kern River Cogeneration Company Combustion Gas Turbine Unit #2 (S-88-2-17) PTO to allow tuning of the unit during tuning start-up periods with higher than normal emissions, eliminating the need to obtain a variance.

7. PERMIT REVIEW PERIOD: Do you request a three- or ten-day period to review the draft Authority to Construct permit? Please note that checking "YES" will delay issuance of your final permit by a corresponding number of working days. See instructions for more information on this review process.
[ ] 3-day review
[X] 10-day review
[ ] No review requested

8. HAVE YOU EVER APPLIED FOR AN ATC OR PTO IN THE PAST? [X] YES [ ] NO
If yes, ATC/PTO #:_____

9. IS THIS APPLICATION FOR THE CONSTRUCTION OF A NEW FACILITY? [ ] YES [X] NO
(If "Yes" is checked, please complete the CEQA Information form)

10. IS THIS APPLICATION SUBMITTED AS THE RESULT OF EITHER A NOTICE OF VIOLATION OR A NOTICE TO COMPLY? [ ] YES [X] NO
If yes, NOV/NTC #:_____

Optional Section

11. DO YOU WANT TO RECEIVE INFORMATION ABOUT EITHER OF THE FOLLOWING VOLUNTARY PROGRAMS?

[ ] "HEALTHY AIR LIVING (HAL) BUSINESS PARTNER"

[ ] "INSPECT"

12. TYPE OR PRINT NAME OF APPLICANT: Neil E. Burgess

TITLE OF APPLICANT: Executive Director

13. SIGNATURE OF APPLICANT: N. E. Burgess DATE: 4/13/11

PHONE #: (661) 615-4660
FAX #: (661) 615-4610
E-MAIL: dlbeck@sycamore.com

FOR APCD USE ONLY:

DATE STAMP:

FILING FEE RECEIVED: $_____ CHECK #:_____

DATE PAID: _____

PROJECT #: _____ FACILITY ID:_____

San Joaquin Valley Air Pollution Control District

www.valleyair.org

Permit Application For:

[ ] AUTHORITY TO CONSTRUCT (ATC) - New Emission Unit
[X] AUTHORITY TO CONSTRUCT (ATC) - Modification Of Emission Unit With Valid PTO/Valid ATC
[ ] AUTHORITY TO CONSTRUCT (ATC) - Renewal of Valid Authority to Construct
[ ] PERMIT TO OPERATE (PTO) - Existing Emission Unit Now Requiring a Permit to Operate

1. PERMIT TO BE ISSUED TO: Kern River Cogeneration Company

2. MAILING ADDRESS: P.O. Box 80478
STREET/P.O. BOX: _____
CITY Bakersfield STATE: CA ZIP CODE: 9-DIGIT 93380

3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED:
STREET: SW China Grade Loop CITY: Bakersfield
_____/4 SECTION 32 TOWNSHIP 28S RANGE 28E

WITHIN 1,000 FT OF A SCHOOL? [ ] YES [X] NO

S.I.C. CODE(S) OF FACILITY (*If known*): 4931

4. GENERAL NATURE OF BUSINESS: Power and steam generation

INSTALL DATE: 1984

5. TITLE V PERMIT HOLDERS ONLY: Do you request a COC (EPA Review) prior to receiving your ATC (*If yes, please complete and attach a Compliance Certification form (TVFORM-009)*? [X] YES [ ] NO

6. DESCRIPTION OF EQUIPMENT OR MODIFICATION FOR WHICH APPLICATION IS MADE (include Permit #'s if known, and use additional sheets if necessary)

Modification of Kern River Cogeneration Company Combustion Gas Turbine Unit #3 (S-88-3-17) PTO to allow tuning of the unit during tuning start-up periods with higher than normal emissions, eliminating the need to obtain a variance.

7. PERMIT REVIEW PERIOD: Do you request a three- or ten-day period to review the draft Authority to Construct permit? Please note that checking "YES" will delay issuance of your final permit by a corresponding number of working days. See instructions for more information on this review process.
[ ] 3-day review
[X] 10-day review
[ ] No review requested

8. HAVE YOU EVER APPLIED FOR AN ATC OR PTO IN THE PAST? [X] YES [ ] NO
If yes, ATC/PTO #:_____

9. IS THIS APPLICATION FOR THE CONSTRUCTION OF A NEW FACILITY? [ ] YES [X] NO
(If "Yes" is checked, please complete the CEQA Information form)

10. IS THIS APPLICATION SUBMITTED AS THE RESULT OF EITHER A NOTICE OF VIOLATION OR A NOTICE TO COMPLY? [ ] YES [X] NO
If yes, NOV/NTC #:_____

Optional Section

11. DO YOU WANT TO RECEIVE INFORMATION ABOUT EITHER OF THE FOLLOWING VOLUNTARY PROGRAMS?

[ ] "HEALTHY AIR LIVING (HAL) BUSINESS PARTNER"

[ ] "INSPECT"

12. TYPE OR PRINT NAME OF APPLICANT: Neil E. Burgess

TITLE OF APPLICANT: Executive Director

13. SIGNATURE OF APPLICANT: Neil E. Burgess DATE: 4/13/11

PHONE #: (661) 615-4660
FAX #: (661) 615-4610
E-MAIL: dlbeck@sycamore.com

FOR APCD USE ONLY:

DATE STAMP:

FILING FEE RECEIVED: $_____ CHECK #:_____

DATE PAID: _____

PROJECT #: _____ FACILITY ID:_____

San Joaquin Valley Air Pollution Control District

www.valleyair.org

Permit Application For:

[ ] AUTHORITY TO CONSTRUCT (ATC) - New Emission Unit
[X] AUTHORITY TO CONSTRUCT (ATC) - Modification Of Emission Unit With Valid PTO/Valid ATC
[ ] AUTHORITY TO CONSTRUCT (ATC) - Renewal of Valid Authority to Construct
[ ] PERMIT TO OPERATE (PTO) - Existing Emission Unit Now Requiring a Permit to Operate

1. PERMIT TO BE ISSUED TO: Kern River Cogeneration Company

2. MAILING ADDRESS: P.O. Box 80478
STREET/P.O. BOX: _____
CITY: Bakersfield STATE: CA ZIP CODE: 9-DIGIT 93380

3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED:
STREET: SW China Grade Loop CITY: Bakersfield
_____/4 SECTION 32 TOWNSHIP 28S RANGE 28E

WITHIN 1,000 FT OF A SCHOOL? [ ] YES [X] NO

S.I.C. CODE(S) OF FACILITY (*If known*): 4931

4. GENERAL NATURE OF BUSINESS: Power and steam generation

INSTALL DATE: 1984

5. TITLE V PERMIT HOLDERS ONLY: Do you request a COC (EPA Review) prior to receiving your ATC (*If yes, please complete and attach a Compliance Certification form (TVFORM-009)*? [X] YES [ ] NO

6. DESCRIPTION OF EQUIPMENT OR MODIFICATION FOR WHICH APPLICATION IS MADE (include Permit #'s if known, and use additional sheets if necessary)

Modification of Kern River Cogeneration Company Combustion Gas Turbine Unit #4 (S-88-4-19) PTO to allow tuning of the unit during tuning start-up periods with higher than normal emissions, eliminating the need to obtain a variance.

7. PERMIT REVIEW PERIOD: Do you request a three- or ten-day period to review the draft Authority to Construct permit? Please note that checking "YES" will delay issuance of your final permit by a corresponding number of working days. See instructions for more information on this review process.
[ ] 3-day review
[X] 10-day review
[ ] No review requested

8. HAVE YOU EVER APPLIED FOR AN ATC OR PTO IN THE PAST? [X] YES [ ] NO
If yes, ATC/PTO #:_____

9. IS THIS APPLICATION FOR THE CONSTRUCTION OF A NEW FACILITY? [ ] YES [X] NO
(If "Yes" is checked, please complete the CEQA Information form)

10. IS THIS APPLICATION SUBMITTED AS THE RESULT OF EITHER A NOTICE OF VIOLATION OR A NOTICE TO COMPLY? [ ] YES [X] NO
If yes, NOV/NTC #:_____

Optional Section

11. DO YOU WANT TO RECEIVE INFORMATION ABOUT EITHER OF THE FOLLOWING VOLUNTARY PROGRAMS?

[ ] "HEALTHY AIR LIVING (HAL) BUSINESS PARTNER"

[ ] "INSPECT"

12. TYPE OR PRINT NAME OF APPLICANT: Neil E. Burgess

TITLE OF APPLICANT: Executive Director

13. SIGNATURE OF APPLICANT: N. E. Burgess DATE: 4/13/11

PHONE #: (661) 615-4660
FAX #: (661) 615-4610
E-MAIL: dlbeck@sycamore.com

FOR APCD USE ONLY:

DATE STAMP:

FILING FEE RECEIVED: $_____ CHECK #:_____

DATE PAID: _____

PROJECT #: _____ FACILITY ID:_____

Kern River Cogeneration Company (S-88)

Permit Modification Application

Background

Kern River Cogeneration Company (KRCC) operates four GE combustion gas turbines that use a combustion hardware technology (DLN1+) capable of meeting 3 ppm NOx and 25 ppm CO permitted limits. As like in kind combustion hardware is installed during routine replacement, there will be slight changes in the tolerances of the assembly that will result in a change to the emissions profile. This emissions profile variation requires the unit to undergo dynamic performance testing and corresponding operating optimization set point adjustments of the combustion system, referred to as tuning. The tuning of the unit is conducted to achieve the optimum emissions profile and ensure the safety and parts longevity of the unit. The period of time required for tuning a unit is approximately 12 hours. These tuning periods are required after the completion of a maintenance outage, however additional tuning may be required depending upon the results of the initial post-outage tuning period. Tuning may also be recommended as a repair option if emissions performance begins to decline.

As the turbines are currently permitted, tuning will exceed the units' emissions limits during normal operation. To date, KRCC has petitioned the APCD hearing board for variances to tune the units. However, KRCC was informed by the APCD compliance staff that they would like to reduce the number of variances granted by the District. Following discussions with APCD staff, KRCC is applying for a modification of each unit's Permit to Operate (PTO) to eliminate the need for further variance petitioning.

BACT and Offsets

Each turbine has daily emission limits of: PM 10 - 120.0 lb/day, SOx (as SO2) – 21.6 lb/day, NOx (as NO2) – 552.8 lb/day, VOC – 288.0 lb/day, and CO – 1056.0 lb/day. These limits will not be changed as a result of this application. As such, this request will be exempt from the requirements of BACT and offsets.

Proposed Modification

KRCC requests a new operating parameter: Tuning start-up

KRCC is requesting a permit modification that will allow existing start-up emission limits throughout an extended start-up period defined as a tuning start-up. After a 12 hour tuning start-up, the unit is set to normal base load operations and meets 3 hour average permitted emission limits.

A tuning start-up will last 12 hours -

- Will result in no daily emissions limit changes
- Will result in no start-up NOx and CO emissions limit changes
- Tuning start-up transitional operation period duration allowed per District Rule 4703, Section 5.3.3

The 12 hour duration tuning start-up period being proposed is allowed per District Rule 4703, Section 5.3.3, and justified as per the following sub-sections:

5.3.3.1 The maximum allowable duration of a transitional operation period will be determined by the APCO, ARB, and EPA.

- This application requests this approval.

5.3.3.2.1 A clear identification of the control technologies utilized

- KRCC gas combustion turbines use GE DLN1+ technology capable of meeting 3 ppm NOx and 25 ppm CO permitted limits (see Attachment 1 for more information).

5.3.3.2.2 A description of what physical conditions prevail during the period that prevent the controls from being effective

- As like in kind combustion hardware is installed during routine replacement, there will be slight changes in the tolerances of the assembly that will result in a change to the emissions profile. This emissions profile variation requires the unit to undergo dynamic performance testing and corresponding operating optimization set point adjustments of the combustion system, referred to as tuning. The tuning of the unit is conducted to achieve the optimum emissions profile and ensure the safety and parts longevity of the unit.

- A detailed description of the physical conditions that prevail during the tuning start-up period is included in Attachment 1 - GE Description of Tuning Process.

5.3.3.2.3 A reasonably precise estimate as to when the physical conditions will have reached a state that allows for the effective control of emissions

- The manufacturer's Technical Information Letter states that the scope of work (tuning start-up period) is 12 hours (see Attachment 2).

5.3.3.2.4 A detailed list of activities to be performed during the period and a reasonable explanation for the length of time needed to complete each activity

- A detailed description of activities to be performed during the tuning start-up period is included in Attachment 1 - GE Description of Tuning Process.

5.3.3.2.5 A description of the material process flow rates and system operating parameters, etc.

- A detailed description of the material process flow rates and system operating parameters during the tuning start-up period is included in Attachment 1 - GE Description of Tuning Process.

5.3.3.2.6 The basis for the requested additional duration.

- The manufacturer's Technical Information Letter states that the scope of work (tuning start-up period) is 12 hours (see Attachment 2).
- KRCC was informed by the APCD compliance staff that they would like to reduce the number of variances granted by the District. Following discussions with APCD staff, KRCC is applying for a modification of each unit's Permit to Operate (PTO) to eliminate the need for further variance petitioning.

Proposed Permit Conditions

A table of proposed permit conditions for each permit unit is found in Attachment 3 and contains the proposed changes to the PTO with the condition number. Proposed changes of the language in the condition are shown with strikethrough markings for deleted language and underlines for added language. A Compliance Certification Form has also been included as Attachment 4. The current corresponding permits are found in Attachment 5.

Attachment 1

GE Description of Tuning Process

DLN1+: Overview of the Tuning Process

Dry-Low NOx Combustion Background

In general, industrial gas-turbine Dry-Low NOx (DLN) combustion systems require individual tuning in order to meet their contractual emissions, operability, reliability & durability standards.

The tuning process exists to configure the overall turbine airflow and fueling levels, as well as the detailed staging of fuel within the combustion system. The result is an algorithm that is capable of maintaining emissions compliance and turbine performance over the relevant load and ambient ranges of operation. Many Dry-Low NOx combustion systems are capable of generating pressure instabilities large enough to severely damage combustion system components as well as downstream turbine hardware. It is a critical requirement of the tuning process to establish a fueling algorithm capable of avoiding this type of durability issue.

GE Energy strongly recommends routine tuning for its entire product line of Dry-Low NOx combustion systems. Although many tuning methods and algorithms exist, most utilize the unit-specific measurements of pollutant emission, and combustion dynamic pressure amplitudes. Note that the tuning process is tailored to suit the various needs and constraints of each specific product. In general, advancements in combustion & controls technology that allow for overall performance and flexibility improvements often result in the need for a more rigorous tuning process. The frequency of tuning also varies by product and can be affected by regional ambient ranges. The need for tuning typically results from a hardware change or modification. GE Energy strongly recommends DLN tuning after any turbine hardware is replaced, repaired, or upgraded. Hardware changes outside the scope of the combustion system can have large impacts on combustion system boundary conditions and cannot be ignored. Outside of hardware activity, the next most common reason to initiate a DLN tune is the observance of an unacceptable or deteriorating performance parameter. This could be anything from emissions reliability problems, to the loss of turbine output, or even an excessive combustion instability measurement.

Detailed Tuning Description: 7EA Phase 4 DLN1+

A large fraction of GE's domestic E-Class Heavy Duty Gas Turbine fleet (7E/EA, 6B) is equipped with DLN1 or DLN1+ combustion systems. These Dry-Low NOx systems require tuning in order to maintain their emissions and durability capabilities. Within this class of turbine product, significantly different tuning processes and algorithms are employed. The remainder of this document is dedicated to the tuning process details of the Phase 4 7E/EA DLN1+ combustion system. This system is GE's lowest NOx capable product currently in commercial operation.

The first criterion for DLN tuning is a stable operating condition. This simple criterion imposes an immediate delay to the tuning process. After start-up, a frame turbine enters a period of large thermal transients. Significant quantities of thermal energy are extracted from the hot section and conduct into the large thermal masses of the turbine rotor structure. This unsteady flow of heat (or "heat soak") causes inaccuracies with turbine exhaust temperature control resulting in unstable fuel/air conditions within the combustion system. DLN Tuning cannot progress beyond a rudimentary level until the machine has run under fired conditions. Emissions levels during this period should not exceed 25ppmvd NOx and 75ppmvd CO once full load is achieved.

When the unit has achieved thermal stability at full load, the tuning process moves into an initial combustion boundary-mapping phase. The combustion system's lean-limit is tested at two conditions that differ slightly in overall fueling levels. This combustion "lean-limit" can be either of two physical boundaries: Flame-Out, or Combustion Pressure Instability. Limits on pressure instabilities (or "Combustion Dynamics") are specific to frequency ranges, and therefore modes of excitation. It is critical that the location of these boundaries is known precisely and furthermore that the associated emissions levels are also measured accurately. In order to achieve this, the boundary mapping exercise must step toward the lean-limit in small increments, while moving slow enough to capture emissions data. Cumulative NOx emission during this period is primarily driven by flame-out events. When a DLN1+ system experiences a flame-out, the combustion process is recovered by reverting to a non-premixed combustion mode. NOx emission in this mode can exceed 100ppmvd, however the cumulative average NOx emission during this testing should not exceed 20ppmvd. Likewise, average CO Emission should not exceed 50ppmvd.

Next the focus turns to achieving entitlement CO emission. A significant factor in achieving low CO emission is controlling chamber-to-chamber variation. To achieve a uniform CO profile, GE utilizes ten fuel trim valves, one located at each combustion chamber, and all associated with one of the turbine fueling circuits. In order to determine the appropriate fuel trim profile, knowledge of the turbine chamber-to-chamber CO distribution is needed. This information is acquired via a perturbation test. In this process, each chamber is successively given an identical fuel (or temperature) perturbation. The impact of this perturbation on CO emission is measured in the turbine exhaust stack. Given the same size perturbation, each chamber will have a differing impact on total turbine CO emission. From this data set, a map of chamber-level CO emission can be generated. Next a series of trim valve positions are produced analytically and are used to step the CO profile toward an optimum (uniform) level. Emissions data is recorded, as the trim valves are stepped toward their targets. The point at which lowest turbine CO emission is achieved is identified and the valves are locked in position. NOx emission during this phase of tuning generally does not exceed 7ppmvd, while average CO emission levels remain below 35ppmvd.

Once the fuel trim valves are locked in position, a more rigorous combustion system lean-boundary mapping is performed. This process includes mapping the combustion lean-limits at seven or more fueling conditions. As was the case in the early boundary mapping, this process must make incremental step changes in a manner that allows for accurate emissions data to be obtained and results in a boundary map with good resolution. This information is used to set a series of control settings and schedules that will be used to negotiate the wide variety of conditions that the combustion system will encounter during its operational profile. Again, average NOx levels during this period are dominated by the number of flame-out events experienced. Even so, the average NOx concentration over this period should not exceed 50ppmvd. Average CO emission should also remain below 50ppmvd.

With data collection complete, the process now enters its final phase of DLN tuning. This is the implementation phase; data collected in previous sections is used to define a final set of control settings. The first set of code updates implements the fuel staging details that will be used in conjunction with emission models to hold compliance as well as maintain operating margin to the physical combustion lean boundaries. Until this point in the process, the tuning process has been driven in a highly manual mode, where the tuning personnel have direct control over almost every turbine parameter. At this point, decision-making is handed over to the system models and control algorithms. This hand-off is initially made at an elevated NOx level to

ensure no boundaries are inadvertently exceeded. Once the hand-off is complete, live feedback of emissions measurement is enabled. This data is used in an automated manner to calibrate the control system's emissions models. With accurate emissions models and the right fuel staging definition, the system is ready for ultra-low NOx operation. The NOx set-points are now moved to their final values and the control system settles into compliant operation. Average NOx levels over this period should not exceed 5ppmvd, while CO concentrations should not exceed 25ppm. This concludes the tuning process; total elapsed time is generally 12 hours.

Attachment 2

DLN1+ Manufacturer's Tuning Requirements

Technical Information Letter

GE
Energy

ENERGY SERVICES ENGINEERING
PRODUCT SERVICE

TIL 1770
14 JANUARY 2011
Compliance Category - **M**
Timing Code - **3**

TECHNICAL INFORMATION LETTER

6B, 7E/EA AND 9E DLN1/1+ TUNING REQUIREMENTS

APPLICATION
This TIL applies to frames 6B, 7E/EA and 9E with DLN1/1+ combustion systems.

PURPOSE
This TIL is being issued to inform the DLN1 and DLN1+ fleet of circumstances under which retuning is recommended to help ensure reliable unit operation and help optimize emissions.

Compliance Category

O - Optional	Identifies changes that may be beneficial to some, but not necessarily all, operators. Accomplishment is at customer's discretion.
M - Maintenance	Identifies industry/GE guidelines or best practices for reliable equipment operation.
C - Compliance Required	Identifies the need for action to correct a condition that, if left uncorrected, may result in reduced equipment reliability or efficiency. Compliance may be required within a specific operating time.
A - Alert	Failure to comply with the TIL could result in equipment damage or facility damage. Compliance is mandated within a specific operating time.
S - Safety	Failure to comply with this TIL could result in personal injury. Compliance is mandated within a specific operating time.

Timing Code

1	Prior to Unit Startup / Prior to Continued Operation (forced outage condition)
2	At First Opportunity (next shutdown)
3	Prior to Operation of Affected System
4	At First Exposure of Component
5	At Scheduled Component Part Repair or Replacement
6	Next Scheduled Outage
7	Optional

© 2010 General Electric Company
The proprietary information published in this Technical Information Letter is offered to you by GE in consideration of its ongoing sales and service relationship with your organization. However, since the operation of your plant involves many factors not within our knowledge, and since operation of the plant is in your control and ultimate responsibility for its continuing successful operation rests with you, GE specifically disclaims any responsibility for liability based on claims for damage of any type, i.e. direct, consequential or special that may be alleged to have been incurred as result of applying this information regardless of whether it is claimed that GE is strictly liable, in breach of contract, in breach of warranty, negligent, or is in other respects responsible for any alleged injury or damage sustained by your organization as a result of applying this information.
This Technical Information Letter contains proprietary information of the General Electric Company, USA and is furnished to its customer solely to assist that customer in the installation, testing, operation and/or maintenance of the equipment described. This document shall not be reproduced or distributed in whole or in part nor shall its contents be disclosed to any third party without the written approval of GE Energy Services Engineering. All rights reserved.

BACKGROUND DISCUSSION

Tuning is a process that is performed to improve the functionality of the combustion system, help ensure safe unit operation, and help optimize emissions across an ambient temperature and humidity range. Tuning includes split checks to find the optimum splits for low emissions, as well as adjusting control constants to optimize power. Tuning also helps address issues such as dynamics and primary re-ignitions (PRIs).

Experience indicates that operation of these units is highly sensitive to the fuel air ratio. Whenever there may have been a change in the fuel air ratio there is a need to check the operability of the unit, which can be accomplished by the tuning process.

The following events may cause a change in the fuel air ratio:

1. Hot Gas Path (HGP) upgrade
2. When any combustion hardware is removed and reinstalled or replaced
3. After all scheduled maintenance and outages such as CI, HGPI and Major

The events mentioned above are not all-inclusive, and other likely situations will be reviewed by engineering on a case-by-case basis though the PAC system.

RECOMMENDATIONS

GE recommends that all units undergo a scheduled retune process after any of the following events, not restricted to just these events:

1. When there is a HGP upgrade
2. When any combustion hardware is removed and reinstalled or replaced
3. After all scheduled maintenance and outages such as CI, HGPI and Major
4. When there is a change in fuel gas composition (Example: Changing gas supplier)
5. When any hardware is added or removed that affect operating conditions of the combustion system, such as addition of inlet bleed heat (IBH), evaporative cooler, compressor air extraction, etc.

PLANNING INFORMATION

Compliance

- Compliance Category: **M**
- Timing Code: **3**

Manpower Skills

The tuning process requires a trained controls TA on site with necessary emissions monitoring device and combustion dynamics monitoring system (if applicable).

Parts

NA

Special Tooling

NA

Reference Documents

NA

Previous Modifications

NA

© 2010 General Electric Company

This Technical Information Letter contains proprietary information of the General Electric Company, USA and is furnished to its customer solely to assist that customer in the installation, testing, operation and/or maintenance of the equipment described. This document shall not be reproduced or distributed in whole or in part nor shall its contents be disclosed to any third party without the written approval of GE Energy Services Engineering. All rights reserved.

Scope of Work
Approximately 12 hrs

Contact your local GE Service Manager or Contract Performance Manager for assistance or for additional information.

Contact your local GE Service Manager or Contract Performance Manager in order to update GE unit record sheets for changes incurred by this TIL.

NOTE: *If you would like to receive future TILs by email, contact your local GE Service Manager or Contract Performance Manager for assistance.*

© 2010 General Electric Company
This Technical Information Letter contains proprietary information of the General Electric Company, USA and is furnished to its customer solely to assist that customer in the installation, testing, operation and/or maintenance of the equipment described. This document shall not be reproduced or distributed in whole or in part nor shall its contents be disclosed to any third party without the written approval of GE Energy Services Engineering. All rights reserved.

TIL COMPLIANCE RECORD

Compliance with this TIL must be entered in local records. GE requests that the customer notify GE upon compliance of this TIL.

Complete the following *TIL Compliance Record* and FAX it to:

TIL Compliance
FAX: (678) 844-3451
Toll free FAX: 1-888-896-TILS (1-888-896-8457)

TIL COMPLIANCE RECORD	For Internal Records Only # _____
Site Name:	Customer Name:
Customer Contact Information	**GE Contact Information**
Contact Name:	Contact Name:
Address:	Address:
Email:	Email:
Phone:	Phone:
FAX:	FAX:
Turbine Serial Number(s):	

INSTALLED EQUIPMENT	TIL Completed Date: _____
	100% TIL Completed: _____
Description:	

Unit Numbers:	Part Description:	Part Number	MLI Number

Comments:

NOTE: *If there are any redlined drawings that pertain to this TIL implementation, please FAX the drawings along with this TIL Compliance Record.*

FAX this form to: **TIL Compliance**
FAX: (678) 844-3451
Toll free FAX: 1-888-896-TILS (1-888-896-8457)

© 2010 General Electric Company

This Technical Information Letter contains proprietary information of the General Electric Company, USA and is furnished to its customer solely to assist that customer in the installation, testing, operation and/or maintenance of the equipment described. This document shall not be reproduced or distributed in whole or in part nor shall its contents be disclosed to any third party without the written approval of GE Energy Services Engineering. All rights reserved.

Attachment 3

Proposed Permit Conditions

KRCC Unit #1

PTO S-88-1-17 Proposed Modifications

Condition #	Proposed PTO Condition
2	Except during periods exempted in Rule 4703, Section 5.3.1, operator shall not exceed a NOx emission rate of 3 ppmvd @ 15% O2, under load conditions, excluding thermal stabilization, ~~and~~ reduced load ~~periods~~ and tuning start-up periods.
12	Records shall be maintained and shall contain: the following: the occurrence and duration of any start-up, shutdown, tuning start-up, 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.
40	During start-up, ~~and~~ shutdown, and tuning start-up periods, 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.
New proposed condition	Dynamic performance testing and corresponding operating optimization set point adjustments of the combustion system of the CGT shall be defined as a tuning start-up used to tune the CGT combustion system to meet the emission limits of this permit and District Rule 4703. A tuning start-up period shall not exceed a time period of 12 consecutive hours per occurrence.

KRCC Unit #2

PTO S-88-2-17 Proposed Modifications

Condition #	Proposed PTO Condition
2	Except during periods exempted in Rule 4703, Section 5.3.1, operator shall not exceed a NOx emission rate of 3 ppmvd @ 15% O2, under load conditions, excluding thermal stabilization, ~~and~~ reduced load ~~periods~~ and tuning start-up periods.
12	Records shall be maintained and shall contain: the following: the occurrence and duration of any start-up, shutdown, tuning start-up, 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.
40	During start-up, ~~and~~ shutdown, and tuning start-up periods, 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.
New proposed condition	Dynamic performance testing and corresponding operating optimization set point adjustments of the combustion system of the CGT shall be defined as a tuning start-up used to tune the CGT combustion system to meet the emission limits of this permit and District Rule 4703. A tuning start-up period shall not exceed a time period of 12 consecutive hours per occurrence.

KRCC Unit #3

PTO S-88-3-17 Proposed Modifications

Condition #	Proposed PTO Condition
2	Except during periods exempted in Rule 4703, Section 5.3.1, operator shall not exceed a NOx emission rate of 3 ppmvd @ 15% O2, under load conditions, excluding thermal stabilization, ~~and~~ reduced load ~~periods~~ and tuning start-up periods.
12	Records shall be maintained and shall contain: the following: the occurrence and duration of any start-up, shutdown, tuning start-up, 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.
40	During start-up, ~~and~~ shutdown, and tuning start-up periods, 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.
New proposed condition	Dynamic performance testing and corresponding operating optimization set point adjustments of the combustion system of the CGT shall be defined as a tuning start-up used to tune the CGT combustion system to meet the emission limits of this permit and District Rule 4703. A tuning start-up period shall not exceed a time period of 12 consecutive hours per occurrence.

KRCC Unit #4

PTO S-88-4-19 Proposed Modifications

Condition #	Proposed PTO Condition
2	Except during periods exempted in Rule 4703, Section 5.3.1, operator shall not exceed a NOx emission rate of 3 ppmvd @ 15% O2, under load conditions, excluding thermal stabilization, ~~and~~ reduced load ~~periods~~ and tuning start-up periods.
12	Records shall be maintained and shall contain: the following: the occurrence and duration of any start-up, shutdown, tuning start-up, 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.
40	During start-up, ~~and~~ shutdown, and tuning start-up periods, 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.
New proposed condition	Dynamic performance testing and corresponding operating optimization set point adjustments of the combustion system of the CGT shall be defined as a tuning start-up used to tune the CGT combustion system to meet the emission limits of this permit and District Rule 4703. A tuning start-up period shall not exceed a time period of 12 consecutive hours per occurrence.

Attachment 4

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
[X] MINOR PERMIT MODIFICATION
[ ] ADMINISTRATIVE AMENDMENT

COMPANY NAME: Kern River Cogeneration Company	FACILITY ID: S-88
1. Type of Organization:[ ] Corporation [ ] Sole Ownership [ ] Government [X] Partnership [ ] Utility	
2. Owner's Name: Chevron Global Power Co./Edison Mission Operations & Maintenance, Inc.	
3. Agent to the Owner: Neil E. Burgess, Executive Director	

II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial **all** circles for confirmation):

NEB Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).

NEB Based on information and belief formed after reasonable inquiry, theequipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.

NEB Corrected information will be provided to the District when I become aware that incorrector incomplete information has been submitted.

NEB 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 forgoing is correct and true:

N E Burgess — 4/13/4

Signature of Responsible Official — Date

Neil E. Burgess

Name of Responsible Official (please print)

Executive Director

Title of Responsible Official (please print)

Attachment 5

Current PTO's

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-88-1-17 **EXPIRATION DATE:** 08/31/2014

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. Combustion turbine generator (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
2. Except during periods exempted in Rule 4703, Section 5.3.1, operator shall not exceed a NOx emission rate of 3 ppmvd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods [40 CFR 60.332(a)(1) & 60.332 (a)(2) and District Rule 4703, 5.1.2] Federally Enforceable Through Title V Permit
3. 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
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
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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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. [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. [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 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

18. 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

19. 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

20. 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

21. The NOx and CO2 CEMS shall meet the requirements in 40CFR60, Appendix B Performance Specifications 2 and 3 and Appendix F Procedure 1. [40 CFR 60.334(b)(1) and District Rules 1080, 6.3, 6.5, 6.6, & 7.2, and 4703, 6.2.3]

22. 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

23. 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

24. The APCO shall be notified no later than one hour 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

25. 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

26. 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

27. The CGT combustors shall be a dry low NOx design capable of achieving 3 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 85-09, X.B] Federally Enforceable Through Title V Permit

28. 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

29. 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

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

31. 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]

32. 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

33. 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

34. 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]

35. 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

36. 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

37. 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

38. 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) - 552.8 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

39. Except during periods exempted in Rule 4703, Section 5.3.1, emission rates from CTG shall not exceed any of the following: NOx (as NO2) - 3 ppmvd @ 15% O2, 12.4 lb/hr on a 3-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

40. 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]

41. 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

42. 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

43. 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

44. 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

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 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

47. 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

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 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

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

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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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 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

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. 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

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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

67. 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

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-88-2-17 **EXPIRATION DATE:** 08/31/2014

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 #2)

PERMIT UNIT REQUIREMENTS

1. Combustion turbine generator (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
2. Except during periods exempted in Rule 4703, Section 5.3.1, operator shall not exceed a NOx emission rate of 3 ppmvd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods [40 CFR 60.332(a)(1) & 60.332 (a)(2) and District Rule 4703, 5.1.2] Federally Enforceable Through Title V Permit
3. 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
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
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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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. [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. [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 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

18. 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

19. 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

20. 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

21. The NOx and CO2 CEMS shall meet the requirements in 40CFR60, Appendix B Performance Specifications 2 and 3 and Appendix F Procedure 1. [40 CFR 60.334(b)(1) and District Rules 1080, 6.3, 6.5, 6.6, & 7.2, and 4703, 6.2.3]

22. 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

23. 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

24. The APCO shall be notified no later than one hour 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

25. 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

26. 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

27. The CGT combustors shall be a dry low NOx design capable of achieving 3 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 85-09, X.B] Federally Enforceable Through Title V Permit

28. 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

29. 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

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

31. 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]

32. 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

33. 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

34. 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]

35. 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

36. 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

37. 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

38. 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) - 552.8 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

39. Except during periods exempted in Rule 4703, Section 5.3.1, emission rates from CTG shall not exceed any of the following: NOx (as NO2) - 3 ppmvd @ 15% O2, 12.4 lb/hr on a 3-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

40. 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]

41. 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

42. 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

43. 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

44. 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

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 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

47. 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

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 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

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

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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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 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

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. 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

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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

67. 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

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-88-3-17 **EXPIRATION DATE:** 08/31/2014

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 #3)

PERMIT UNIT REQUIREMENTS

1. Combustion turbine generator (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
2. Except during periods exempted in Rule 4703, Section 5.3.1, operator shall not exceed a NOx emission rate of 3 ppmvd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods [40 CFR 60.332(a)(1) & 60.332 (a)(2) and District Rule 4703, 5.1.2] Federally Enforceable Through Title V Permit
3. 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
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
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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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. [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. [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 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

18. 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

19. 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

20. 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

21. The NOx and CO2 CEMS shall meet the requirements in 40CFR60, Appendix B Performance Specifications 2 and 3 and Appendix F Procedure 1. [40 CFR 60.334(b)(1) and District Rules 1080, 6.3, 6.5, 6.6, & 7.2, and 4703, 6.2.3]

22. 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

23. 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

24. The APCO shall be notified no later than one hour 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

25. 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

26. 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

27. The CGT combustors shall be a dry low NOx design capable of achieving 3 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 85-09, X.B] Federally Enforceable Through Title V Permit

28. 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

29. 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

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

31. 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]

32. 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

33. 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

34. 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]

35. 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

36. 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

37. 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

38. 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) - 552.8 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

39. Except during periods exempted in Rule 4703, Section 5.3.1, emission rates from CTG shall not exceed any of the following: NOx (as NO2) - 3 ppmvd @ 15% O2, 12.4 lb/hr on a 3-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

40. 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]

41. 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

42. 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

43. 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

44. 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

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 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

47. 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

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 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

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

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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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 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

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. 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

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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

67. 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

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-88-4-19 **EXPIRATION DATE:** 08/31/2014

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. Combustion turbine generator (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
2. Except during periods exempted in Rule 4703, Section 5.3.1, operator shall not exceed a NOx emission rate of 3 ppmvd @ 15% O2, under load conditions, excluding thermal stabilization and reduced load periods [40 CFR 60.332(a)(1) & 60.332 (a)(2) and District Rule 4703, 5.1.2] Federally Enforceable Through Title V Permit
3. 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
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
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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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. [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. [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 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

18. 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

19. 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

20. 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

21. The NOx and CO2 CEMS shall meet the requirements in 40CFR60, Appendix B Performance Specifications 2 and 3 and Appendix F Procedure 1. [40 CFR 60.334(b)(1) and District Rules 1080, 6.3, 6.5, 6.6, & 7.2, and 4703, 6.2.3]

22. 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

23. 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

24. The APCO shall be notified no later than one hour 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

25. 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

26. 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

27. The CGT combustors shall be a dry low NOx design capable of achieving 3 ppm or lower at 15% O2. [District Rule 4703 and PSD SJ 85-09, X.B] Federally Enforceable Through Title V Permit

28. 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

29. 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

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

31. 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]

32. 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

33. 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

34. 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]

35. 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

36. 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

37. 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

38. 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) - 552.8 lb/day, VOC - 288.0 lb/day, or CO - 1056.0 lb/day. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

39. Except during periods exempted in Rule 4703, Section 5.3.1, emission rates from CTG shall not exceed any of the following: NOx (as NO2) - 3 ppmvd @ 15% O2, 12.4 lb/hr on a 3-hr avg, or CO - 25 ppmvd @ 15% O2, 44.0 lb/hr on a 3-hr avg. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

40. 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]

41. 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

42. 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

43. 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

44. 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

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 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

47. 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

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 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

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

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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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 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

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. 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

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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

67. 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