La Paloma
Generating Plant

POB175 (Mail)
1760 W. Skyline Road (Deliveries)
McKittrick, CA 93251

661.762.6000
Fax: 661.762.6041

January 31, 2013

Mary Dyas
Compliance Project Manager
La Paloma Generating Project (Docket No. 98-AFC-2)
California Energy Commission
Energy Facility Siting Division
1516 Ninth Street MS-2000
Sacramento, CA 95814-5512

Subject: Petition for Approval of Proposed Modification
Combustion Turbine Inlet Fogger Project
Energy Commission Docket No. 98-AFC-2

Dear Ms. Dyas,

La Paloma Generating Company, LLC (LPGC) submits the attached petition for Commission approval of the proposed Combustion Turbine Inlet Fogger Project. The purpose of the Project is to improve turbine generator performance and efficiency on hot days when the existing turbines are not capable of achieving their full design capacity. The project will have no signficant effects on the existing facility design, health and safety, or environmental impacts. Furtermore, no changes to Energy Commission Conditions of Certification are required. The San Joaquin Valley Air Pollution Control District has reviewed LPGC's proposed project and has concluded that no changes to existing Permit to Operate conditions are necessary. Project details and Authority to Construct permits are provided in the attached petition.

Please do not hesitate to call Shawn Witherow at 661.762.6055 or Bill Steiner (URS) at 503.948.7222 if there are any questions, need for clarification, or requests for additional information.

Sincerely,

Ronnie Cooper
Plant Manager
La Paloma Generating Plant

cc: w/attachment S. Witherow L. Scandura (SJVAPCD) W. Steiner (URS)
w/o attachment M. Wooten P. Oseguera E. Barndt

File 705.02.05/705.2.27

LA PALOMA GENERATING PLANT
LA PALOMA GENERATING COMPANY, LLC

PETITION FOR A PROPOSED MODIFICATION TO THE CALIFORNIA ENERGY COMMISSION DECISION – DOCKET NO. 98-AFC-2 COMBUSTION TURBINE INLET FOGGER PROJECT

January 28, 2013

Prepared for
La Paloma Generating Company, LLC
1760 W. Skyline Road
McKittrick, CA 93251

For Submittal to
California Energy Commission
Sacramento, California

Prepared by
URS Corporation
111 SW Columbia, Suite 1500
Portland, Oregon 97201-5850

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ATTACHMENT 1 – LPGC's December 5, 2012 ATC Application Package

ATTACHMENT 2 – SJVAPCD's January 9, 2013 Draft ATCs and January 2, 2013 Application Review

ATTACHMENT 3 – Final ATCs issued by SJVAPD on January 24, 2013

INTRODUCTION AND BACKGROUND INFORMATION

La Paloma Generating Company, LLC (LPGC) is filing this petition for a proposed project modification to the La Paloma Generating Plant (LPGP). . The LPGP experiences high ambient air temperature conditions that periodically diminish the net output of our four combined-cycle combustion turbines. This reduces the amounts of electrical energy and capacity that LPGC can

make available to the California Independent System Operator (CAISO) and the electrical grid negatively impacts the economic viability of the LPGP at certain times of the year, but does not increase the design capacity of the LPGP's equipment. As the Energy Commission is aware, the current Commission Decision allows for the use of inlet evaporators to cool the combustion inlet air during ambient temperature days, and for the injection of steam into the combustion turbines to improve efficiency. These systems have a limited ability to achieve the gas turbine generators' design capacity on hot days.

LPGC is proposing to install and utilize inlet foggers to further cool the inlet air on hot days. The purpose of the proposed foggers is to recover lost generating capacity on hot days when the combustion turbines are not able to operate at their full firing rate. By providing additional inlet air cooling and additional mass, beyond what the existing inlet evaporative coolers can provide, the foggers will enable each combined-cycle turbine generator unit to achieve up to 8 megawatts (MW) of additional electrical generating capacity on hot days. The foggers will not operate on cold days (below 57°F). Maximum natural gas firing and generator output will not exceed maximum rated firing rates and generating capacity for the units which occurs on coldest days.

During fogger operation, maximum short term and annual emissions of regulated air pollutants will not exceed current emission limits in the existing Permits to Operate, PSD permit and Commission Decision. Worst-case emissions from the combined-cycle gas turbine generator units will continue to occur on coldest days when the foggers will not operate. Because these units qualify as "Fully Offset Emissions Units" (SJVAPCD Rule 2201, Section 3.20) and the proposed fogger project will not increase potential emissions, no additional offsets are required for the fogger project. Furthermore, maximum permitted emissions have been reviewed in previous worst-case air quality impact modeling for the LPGP; therefore further air quality impact analysis is not necessary. Analyses in LPGC's ATC application package and the SJVAPCD's Application Review also demonstrate that the fogger project will not constitute a "Federal Major Modification" or "SB288 Major Modification" as defined in Rule 2201. Therefore NSR BACT and Prevention of Significant Deterioration (PSD) review are not triggered by the fogger project.

In accordance with Section 1769(a)(2) of the California Energy Commission (Energy Commission) Siting Regulations, the proposed modification does not have the potential to have a significant effect on the environment and will not result in the change or deletion of a condition adopted by the Energy Commission, Docket No. 98-AFC-2, or cause the LPGP to not comply with applicable laws, ordinances, regulations and standards (LORS).

Two drawings prepared by Mee Industries are attached. Drawing 1 shows the proposed inlet air duct manifold layout, and Drawing 2 provides the proposed pump skid P&ID, and ladder logic schematic.

Air Permit Modifications

On December 5, 2012 LPGC submitted Authority to Construct (ATC) applications to the San Joaquin Valley Air Pollution Control District (SJVAPCD) for approval to install inlet foggers on each of the LPGP's four combustion turbine generators. The applications and supporting documentation are provided in Attachment 1 of this petition. Electronic files for the application's spreadsheet calculations will be forwarded to the California Energy Commission (Energy Commission) by email. LPGC's ATC application package provides additional design and operational details about the fogger project along with detailed emission calculations and regulatory applicability analysis. The SJVAPCD accepted the applications as complete on December 17, 2012. On January 9, 2013, the SJVAPCD issued Proposed ATCs (S-3412-1-18, S-3412-2-19, S-3412-3-19, and S-3412-4-14), LPGC's Certificate of Conformity and the District's January 2, 2013 Application Review document for review and approval by U.S. Environmental Protection Agency (EPA) Region IX (provided in Attachment 2 of this petition). On January 24, 2013, the SJVAPCD issued final ATCs (provided in Attachment 3 of this petition) after receiving EPA's approval.

A. DESCRIPTION OF PROPOSED MODIFICATION

SJVAPCD's draft proposed ATCs contain no permit condition changes, and will not alter the conditions in LPGC's existing PTOs when foggers are installed and LPGC applies for PTOs to be issued. Note that ATC Conditions 1 and 2 are temporary and administrative, and will not transfer into LPGC's Permits to Operate (PTOs).

LPGC requests CEC approval to install and operate combustion turbine inlet foggers as described below. Because there are no significant impacts to air quality or any other resource topics, LPGC also does not anticipate the need for any changes to Conditions of Certification in other sections of the Commission Decision.

B. NECESSITY OF PROPOSED MODIFICATION

The requested amendment would assure continued consistency between the Commission Decision and LPGC's air permits, and is necessary to allow increased combustion turbine generator performance and efficiency.

C. INFORMATION KNOWN AT TIME OF CERTIFICATION PROCESS

Information that forms the basis for this proposed modification was not known at the time of the original certification process. LPGC began considering inlet foggers in recent months.

With the requested Energy Commission approval to install combustion turbine inlet foggers, the Plant will be able to take advantage of new technology to improve combustion turbine performance and efficiency during hot days. The propose modification does not alter the design capacity of the combustion turbine generators.

D. IMPACT ANALYSIS OF PROPOSED MODIFICATION

a. Applicable Conditions of Certification

The LPGP will continue to comply with all existing Conditions of Certification after implementation of the proposed Inlet Fogger Project. Therefore, LPGC anticipates that no changes to Conditions of Certification or Verifications are necessary for the project.

b. Impact Analysis

The SJVAPCD's January 2, 2013 Authority to Construct Application Review (see Attachment 2), concluded on pages 19 and 20 that proposed fogger project is not subject to Best Available Control Technology (BACT), and will have a less than significant health impact on sensitive receptors. The District concluded that the issuance of air permits for this project constitutes a ministerial approval. On this basis, the District found that this project is exempt from provisions of the California Environmental Quality Act (CEQA).

1. Air Quality

The project will not increase permitted emission limits. The facility's permitted emissions have previously been fully mitigated through the purchase and retirement of qualified SJVAPCD Emission Reduction Credits (ERCs). The 1.5:1 offset ration required by SJVAPCD rules provides for a net air quality benefit to the air basin. Permitted emissions have also been thoroughly evaluated for air quality impacts in past air permitting and certification analyses by LPGC, SJVAPCD, EPA and the CEC.

No modifications to existing Air Quality conditions in the Commission Decision will be required.

2. Biological Resources

The proposed installation and operation of inlet foggers will have no known impact on biological resources surrounding the Plant. There will be no increase in permitted emissions. Clean demineralized water will be used in the foggers and will not result in any significant additional particulate matter emissions and downwind deposition from Plant stack emissions onto local/regional vegetation.

No modifications to the Biological Resources conditions in the Commission Decision will be required.

3. Public Health and Worker Safety

The proposed amendment does not present significant potential impacts related to public health or worker safety that were not contemplated by the Application For Certification

or the Commission Decision. The proposed modification will not alter permitted emissions. California Aqueduct water, used as source water for the plant will be cleaned and demineralized for use in the foggers, and is not known to contain significant levels of toxic compounds. Furthermore, during processing of processing LPGC's ATC applications, SJVAPCD staff evaluated potential air emissions and impacts, and found that less than significant health impacts will occur. Please see Attachment 2).

No modifications to the Public Health or Worker Safety conditions in the Commission Decision will be required.

4. Visual Resources

The proposed modification will have no effect on visual resources.

No modifications to Visual Resources conditions in the Commission Decision will be required.

5. Soil and Water Resources and Wastewater

The proposed modification will have no significant effect on soil and water resources. Plant-wide annual water use will remain within maximum levels previously approved by the Energy Commission during certification of the LPGP. Likewise, operation of the proposed inlet foggers will not significantly alter the facility's wastewater characteristics and volume. Both will remain within ranges previously approved by the Energy Commission.

It is estimated that up to about 4.52 lb/sec of water will be consumed by each combustion turbine's inlet fogger array during operation, which is equivalent to about 32.5 gallons/minute (gpm) per turbine. If foggers are operated up to 5,580 hours/year, this amounts to about 43.5 million gallons/year or 133 acre-feet for all four turbines. This is not a significant change to the LPGP's existing annual water use, which will remain well within the 5,530-6,000 acre-feet/year estimate in the 1999 Commission Decision.

Clean demineralized water will be fed to the foggers and will not result in any significant additional particulate matter emissions and downwind deposition from Plant stack emissions onto local/regional soils.

No modifications to Soil and Water Resources conditions in the Commission Decision will be required.

6. Waste Management

The proposed fogger project will not significantly alter the facility's solid and liquid waste streams. Wastewater is discussed above.

Therefore, no changes to the existing Conditions of Certification related to waste management are needed.

7. Facility Design

The proposed fogger project will not significantly alter the facility design. Alterations to the combustion turbines include only addition of fogger nozzles at the air inlets. No alterations to water supply and treatment systems, and wastewater disposal systems are needed. All facility changes will occur within the fenced facility perimeter during installation and operation. Land and facilities outside the fenceline will not be affected.

Therefore, no changes to the existing Conditions of Certification related to facility design and waste management are needed.

8. Other Resource Topics

Finally, other resource areas, including cultural resources, noise, traffic and transportation, hazardous material management, waste management, land use, and socioeconomics, impacts will not be affected by the proposed modification. Construction and operation of the proposed fogger project will occur entirely within the existing LPGP fenced perimeter. Therefore, no modification to the Commission Decision for these resources topics will be required.

E. COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS)

The proposed installation and operation of inlet air foggers does not represent a significant change to facility design elements or present any significant new environmental impacts. The SJVAPCD has previously approved the requested increase in permitted emissions. The ATC Permits issued by SJVAPCD include a Title V Certification of Compliance. U.S. Environmental Protection Region 9 concurs with the draft ATCs. Therefore, the requested amendment will not affect the ability of LPGC to comply with all applicable LORS.

F. EFFECTS OF AMENDMENT ON THE PUBLIC

The amendment will not present any significant additional impacts that would have an adverse affect on the public. Allowing the Plant to continue operating in compliance with air emission limits will enable LPGC to continue to provide reliable electric power to the grid system, with increase generation capacity and efficiency during hot days, thereby, resulting in a positive affect on the public.

G. LIST OF PROPERTY OWNERS

The following is a list of property owners adjacent to the project area based on information obtained from the Kern County Assessor's Office on December 20, 2012:

APN	Owner	Address
157-110-05	USA/BLM	3801 Pegasus Drive Bakersfield, CA 93308-6837
157-110-20	Berry Petroleum Company	5201 Truxtun Avenue, No. 300 Bakersfield, CA 93309-6409 and 1999 Broadway, Suite 3700 Denver, CO 80202
157-210-05	Crimson Resource Management Corporation	410 17th Street, No. 1010 Denver, CO 80202
157-220-02	Chevron USA, Inc.	P.O. Box 1392 Bakersfield, CA 93302-1392
157-220-03	Pagels Family Survivor Trust A	2031 New Brunswick Drive San Mateo, CA 94402
157-220-05	USA/BLM	3801 Pegasus Drive Bakersfield, CA 93308-6837
157-230-03	Chevron USA, Inc.	P.O. Box 1392 Bakersfield, CA 93302-1392
157-230-15	Chevron USA, Inc.	P.O. Box 1392 Bakersfield, CA 93302-1392
157-260-03	Chevron USA, Inc.	P.O. Box 1392 Bakersfield, CA 93302-1392
157-260-04	Zollars Family Trust	3024 Lewis Street Placerville, CA 95667-5601
157-270-01	Occidental of Elk Hills, Inc.	P.O. Box 27570 Houston, TX 77277-7570

H. EFFECTS ON NEARBY PROPERTY OWNERS, THE PUBLIC, AND PARTIES TO THE APPLICATION

The proposed modification will not result in any additional impacts. The proposed project will occur entirely within the facility's fenced perimeter. The nearest residences are 1.5 miles west of the Plant. Therefore, there will be no adverse impacts on nearby property owners, the public, or parties in the application proceedings.

ATTACHMENT 1

LPGC's December 5, 2012 ATC Application Package

La Paloma Generating Plant
La Paloma Generating Company, LLC

POB175 (Mail)
1760 W. Skyline Road
(Deliveries)
McKittrick, CA 93251

661.762.6000
661.762.6041 Fax

December 05, 2012

Mr. Leonard Scandura
Permit Services Manager
San Joaquin Valley Air Pollution Control District
34946 Flyover Court
Bakersfield, CA 93308

Subject: Authority to Construct Permit Applications
Combustion Turbine Air Inlet Foggers. Facility No. 3412

Dear Mr. Scandura:

La Paloma Generating Company, LLC (LPGC) hereby submits the attached Authority to Construct (ATC) Permit applications to modify existing Permits to Operate S-3214-1-17, S-3214-2-18, S-3214-3-18 and S-3214-4-13 to install and operate air inlet foggers on all four combined-cycle gas turbine generators.

As described in the attached application supplement, the purpose of the proposed foggers is to recover lost generating capacity on hot days when the combustion turbines are not able to operate at their full firing rate. By providing additional inlet air cooling and additional mass, beyond what the existing inlet evaporative coolers can provide, the foggers will enable each combined-cycle turbine generator unit to achieve up to 8 megawatts (MW) of additional electrical generating capacity on hot days. The foggers will not operate on cold days (below 57°F). Maximum natural gas firing and generator output will not exceed maximum rated firing rates and generating capacity for the units which occurs on coldest days.

During fogger operation, maximum short term and annual emissions of regulated air pollutants will not exceed current emission limits in the existing Permits to Operate and PSD permit. Worst-case emissions from the combined-cycle gas turbine generator units will continue to occur on coldest days when the foggers will not operate. Because these units qualify as "Fully Offset Emissions Units" (Rule 2201, Section 3.20) and the proposed fogger project will not increase potential emissions, no additional offsets are required for the fogger project. Furthermore, maximum permitted emissions have been reviewed in previous worst-case air quality impact modeling for the La Paloma Generating Plant; therefore further air quality impact analysis is not necessary.

The attached analysis demonstrates that the fogger project will not constitute a "Federal Major Modification" or "SB288 Major Modification" as defined in Rule 2201. Therefore NSR BACT and Prevention of Significant Deterioration (PSD) review are not triggered by the fogger project.

A check is enclosed to cover the District's ATC filing fee ($284). LPGC requests expedited processing of these applications to help assure that ATC's are available prior to the first expected outage period beginning January 2nd, 2013. Installation of the fogging system piping and nozzles requires a unit outage while subsequent equipment can be installed with the gas turbine operating (i.e., pump skid, process logic control and external piping). LPGC will reimburse the SJVAPCD for applicable overtime fees related to expedited application processing

If there are any questions about the attached application, please contact Shawn Witherow at 661.762.6055 or Bill Steiner at 503.948.7222.

Sincerely,

James Maiz
Authorized Representative
La Paloma Generating Plant

cc:
B. Steiner (URS) R. Cooper S. Witherow C. Tubridy K. Woodard
E. Barndt

File No. 705.01.03

Attachments:
ATC Application Forms (4)
Application Supplement (including 3 tables and 2 attachments)
Compliance Certification Form
Check # 10074

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: **La Paloma Generating Company, LLC**

2. MAILING ADDRESS: **PO Box 175**
STREET/P.O. BOX: _____
CITY: **McKittrick** STATE: **CA** 9-DIGIT ZIP CODE: **93251**

3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED:
STREET: **1760 West Skyline Rd** CITY: **McKittrick**
West Elk Hills /4 SECTION **26** TOWNSHIP **30S** RANGE **22E**

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

S.I.C. CODE(S) OF FACILITY (*If known*): **4911**

4. GENERAL NATURE OF BUSINESS: Electric Power Generation

INSTALL DATE: **10/06/2000**

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)*) [Y] YES [ ] NO

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

This application is for approval to install and operate inlet air fogger equipment to improve the efficiency and output of combustion turbine generator Unit 1 (S-3214-1) on hot days, within the existing permitted capacity of the unit and with no increase in short-term and annual emission limits. The attached application supplement provides details including equipment information, expected operations, and estimated emissions. This application does not trigger BACT or PSD review and does not require offsets.

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.
[**X**] 3-day review
[ ] 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 #: **S-3214-1-17**

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: **Jim Maiz**

TITLE OF APPLICANT: **Authorized Representative**

13. SIGNATURE OF APPLICANT: DATE: **12/05/2012**

PHONE #: **(281) 863-9006**
FAX #: **(281) 863-9056**
E-MAIL: **james.maiz@rocklandcapital.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: **La Paloma Generating Company, LLC**

2. MAILING ADDRESS: **PO Box 175**
STREET/P.O. BOX: _____
CITY: **McKittrick** STATE: **CA** 9-DIGIT ZIP CODE: **93251**

3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED:
STREET: **1760 West Skyline Rd** CITY: **McKittrick**
West Elk Hills /4 SECTION **26** TOWNSHIP **30S** RANGE **22E**

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

S.I.C. CODE(S) OF FACILITY (*If known*): **4911**

4. GENERAL NATURE OF BUSINESS: Electric Power Generation

INSTALL DATE: **10/06/2000**

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)*) [Y] YES [ ] NO

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

This application is for approval to install and operate inlet air fogger equipment to improve the efficiency and output of combustion turbine generator Unit 2 (S-3214-2) on hot days, within the existing permitted capacity of the unit and with no increase in short-term and annual emission limits. The attached application supplement provides details including equipment information, expected operations, and estimated emissions. This application does not trigger BACT or PSD review and does not require offsets.

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.
[**X**] 3-day review
[ ] 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 #: **S-3214-2-18**

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: **Jim Maiz**

TITLE OF APPLICANT: **Authorized Representative**

13. SIGNATURE OF APPLICANT: DATE: **12/05/2012**

PHONE #: **(281) 863-9006**
FAX #: **(281) 863-9056**
E-MAIL: **james.maiz@rocklandcapital.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: **La Paloma Generating Company, LLC**

2. MAILING ADDRESS: **PO Box 175**
STREET/P.O. BOX: _____
CITY: **McKittrick** STATE: **CA** 9-DIGIT ZIP CODE: **93251**

3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED:
STREET: **1760 West Skyline Rd** CITY: **McKittrick**
West Elk Hills /4 SECTION **26** TOWNSHIP **30S** RANGE **22E**

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

S.I.C. CODE(S) OF FACILITY (*If known*): **4911**

4. GENERAL NATURE OF BUSINESS: Electric Power Generation

INSTALL DATE: **10/06/2000**

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)*) [Y] YES [ ] NO

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

This application is for approval to install and operate inlet air fogger equipment to improve the efficiency and output of combustion turbine generator Unit 3 (S-3214-3) on hot days, within the existing permitted capacity of the unit and with no increase in short-term and annual emission limits. The attached application supplement provides details including equipment information, expected operations, and estimated emissions. This application does not trigger BACT or PSD review and does not require offsets.

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.
[**X**] 3-day review
[ ] 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 #: **S-3214-3-18**

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: **Jim Maiz**

TITLE OF APPLICANT: **Authorized Representative**

13. SIGNATURE OF APPLICANT: DATE: **12/05/2012**

PHONE #: **(281) 863-9006**
FAX #: **(281) 863-9056**
E-MAIL: **james.maiz@rocklandcapital.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: **La Paloma Generating Company, LLC**

2. MAILING ADDRESS: **PO Box 175**
STREET/P.O. BOX: _____
CITY: **McKittrick** STATE: **CA** 9-DIGIT ZIP CODE: **93251**

3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED:
STREET: **1760 West Skyline Rd** CITY: **McKittrick**
West Elk Hills /4 SECTION **26** TOWNSHIP **30S** RANGE **22E**

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

S.I.C. CODE(S) OF FACILITY (*If known*): **4911**

4. GENERAL NATURE OF BUSINESS: Electric Power Generation

INSTALL DATE: **10/06/2000**

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)*) [Y] YES [ ] NO

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

This application is for approval to install and operate inlet air fogger equipment to improve the efficiency and output of combustion turbine generator Unit 4 (S-3214-4) on hot days, within the existing permitted capacity of the unit and with no increase in short-term and annual emission limits. The attached application supplement provides details including equipment information, expected operations, and estimated emissions. This application does not trigger BACT or PSD review and does not require offsets.

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.
[**X**] 3-day review
[ ] 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 #: **S-3214-4-13**

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: **Jim Maiz**

TITLE OF APPLICANT: **Authorized Representative**

13. SIGNATURE OF APPLICANT: DATE: **12/05/2012**

PHONE #: **(281) 863-9006**
FAX #: **(281) 863-9056**
E-MAIL: **james.maiz@rocklandcapital.com**

FOR APCD USE ONLY:

DATE STAMP:

FILING FEE RECEIVED: $ _____ CHECK #: _____

DATE PAID: _____

PROJECT #: _____ FACILITY ID: _____

San Joaquin Valley
Unified Air Pollution Control District

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

[X] SIGNIFICANT PERMIT MODIFICATION
[ ] MINOR PERMIT MODIFICATION
[ ] ADMINISTRATIVE AMENDMENT

COMPANY NAME: **La Paloma Generating Company, LLC**	FACILITY ID: S – 3412
1. Type of Organization:[X] Corporation [ ] Sole Ownership [ ] Government [ ] Partnership [ ] Utility	
2. Owner's Name: **La Paloma Generating Company, LLC**	
3. Agent to the Owner: **N/A**	

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

☑ 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).

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

☑ Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.

☑ Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the forgoing is correct and true:

Signature of Responsible Official — Date 12/6/17

Jim Maiz

Name of Responsible Official (please print)

Authorized Representative, La Paloma Generating Company, LLC

Title of Responsible Official (please print)

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM
INSTRUCTIONS (TVFORM-009)

Complete a Title V Modification - Compliance Certification Form (TVFORM-009) for each Responsible Official (RO) and identify the areas of responsibility for each (indicate by permit number the emissions units under the responsibility of each RO).

I. Type of Permit Action

Mark the appropriate box to indicate whether the application is for: a significant or minor Title V permit modification, or an application for an administrative amendment to a Title V permit.

Line 1. Indicate the organizational structure of the facility.
Line 2. Print the name of the facility owner.
Line 3. Print the name of the agent to the owner, if any, who may conduct business on behalf of the owner.

II. Compliance Certification

A compliance certification is a certification by the Responsible Official that each of the statements initialed in this section are true, accurate, and complete. The Responsible Official must initial the statements that are true, sign and date, and print his/her name and title.

For a corporation, the responsible official shall be a president, secretary, treasurer, or vice president in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation. The responsible official may be a duly authorized representative rather than any of the above if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit; and

1. the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding $25 million in 1980 dollars; or

2. the District has approved a petition from the original responsible person to delegate authority.

For a public agency the responsible official shall be either the principal executive officer or the ranking elected official. The principal executive officer, in the case of a federal agency, may be the executive officer having responsibility for a geographical unit.

For a partnership or sole proprietorship, the responsible official is a general partner or the proprietor, respectively.

Table 1. PREVIOUS 5 YEARS ACTUAL ANNUAL EMISSIONS AND IDENTIFICATION OF REPRESENTATIVE TWO YEARS FOR EACH POLLUTANT – LA PALOMA POWER PLANT COMBUSTION TURBINE UNITS 1-4 (2007-2011)

Year	U1 Op. Time (hrs)	U2 Op. Time (hrs)	U3 Op. Time (hrs)	U4 Op. Time (hrs)	Facility Op. Time (hrs)	U1NOx lbs Total	U2NOx lbs Total	U3NOx lbs Total	U4NOx lbs Total	Facility NOx lbs Total	U1SO2 lbs Total	U2SO2 lbs Total	U3SO2 lbs Total	U4SO2 lbs Total	Facility SO2 lbs Total
2007	5,952	8,104	7,949	7,701	29,706	53196	78777	56553	61855	250381	5934	8147	8324	8522	26927
07-08 Avg.	**6,985**	**7540.5**	**7713**	**7152**	**29,390**										
2008	8,017	6977	7477	6602	29,073	72642	70057	66476	61803	270978	7947	7096	7202	6455	28701
08-09 Avg.	**7,549**	**7359.5**	**7545**	**6982**	**29,435**	**66603**	**67820**	**65920**	**62856**	**263198**	**7237**	**7101**	**7092**	**6689**	**28017**
2009	7,080	7742	7613	7362	29,797	60584	65583	65364	63906	255417	6526	7105	6982	6720	27333
2010	6,034	6326	6577	6684	25,621	48082	54336	53245	52269	207932	5291	5825	5684	5921	22701
2011	2,281	1897	1086	1454	6,718	21625	17284	9684	14065	62658	1697	1596	894	1253	5640

Year	U1CO lbs Total	U2CO lbs Total	U3CO lbs Total	U4CO lbs Total	Facility CO lbs Total	U1CO2 tons Total	U2CO2 tons Total	U3CO2 tons Total	U4CO2 tons Total	Facility CO2 tons Total	U1PM10 lbs Total	U2PM10 lbs Total	U3PM10 lbs Total	U4PM10 lbs Total	Facility PM10 Total	U1PVOC lbs Total	U2VOC lbs Total	U3VOC lbs Total	U4VOC lbs Total	Facility VOC Total
2007	28498	38414	30918	41250	139080	588,510	804,384	680,933	738,637	2,812,444	27,260	38,332	36,327	41,200	143,119	3,690	152	5,962	154	9,958
07-08 Avg.											**22,088**	**23,666**	**23,696**	**27,169**	**96,620**					
2008	11440	58291	25177	39858	134766	787,607	703,385	718,384	639,865	2,849,251	16,916	9,000	11,066	13,138	50,120	160	140	150	132	581
08-09 Avg.	**11408**	**47063**	**20931**	**31080**	**110480**	**717,410**	**703,692**	**704,975**	**662,729**	**2,779,004**						**894**	**1,386**	**2,092**	**3,121**	**7,494**
2009	11372	35834	16665	22302	86193	647,212	704,389	691,565	665,591	2,708,757	18,072	4,028	14,845	2,650	37,593	1,628	2,832	4,035	6,110	14,406
2010	6810	30639	14358	18705	70512	524,090	587,930	581,014	586,497	2,239,531	27,455	20,823	17,166	18,247	83,491	121	127	132	134	512
2011	22111	11872	6809	6726	47518	188,382	158,406	88,828	125,874	561,290	7,755	6,393	2,530	3,926	20,604	46	38	22	29	134

Baseline Period Selection Rationale for each pollutant:	2008-2009 is he most representative 2-year period for the 4 units overall.	2008-2009 is he most representative 2-year period for the 4 units overall.	2008-2009 is he most representative 2-year period for the 4 units overall. Ox. catalysts were installed in all units by 2008.	2008-2009 is he most representative 2-year period for the 4 unit overall. Ox. catalysts were installed in all units by 2008.	2007-2008 is he most representative 2-year period for the 4 units overall. PM10 emissions may vary with fuel sulfur content. Delta Environmental confirmed that high PM10 values in 2007 and similarly high values in 2010 were all in the aqueous impinger catch, which may imply soluble sulfates in the exhaust. These high values can occur again in any future year because of normal variations in pipeline natural gas sulfur content while remaining within the permit limit. Air rules require that consecutive years be used for baseline actual emission estimates. Note however, this approach may understate what future emissions may be during some years.	2008-2009 is the most representative 2-year period for the 4 units overall. All VOC results are at very low ppm concentrations. What appears to be erratic results from one year to the next is really the result of VOC being below detection limits some years (for which 1/2 detection lower detection limit is used for this analysis) and slightly above detection limits other years. Note however, this approach may understate what future emissions may be during some years.

Notes:

1. Annual operating times, heat inputs and CO2 emissions are from LPGC's annual Environmental Data Reports to USEPA.
2. Annual NOx, SO2 and CO emissions are based on LPGC's annual emission reports to the California Energy Commission.
3. Annual PM10 and VOC emissions are based on annual source test results (lb/hr) multiplied by annual operating times. These estimates are conservative because source tests are conducted at full load.
4. Other PSD pollutants (i.e., H2SO4, Pb, etc.) are not emitted in sig quantities according to AP-42.

Table 2. DERIVATION OF UNUSED CAPACITY EMISSIONS FROM PRE-PROJECT BASELINE ACTUAL EMISSIONS (BAE) AND BASELINE CAPACITY FACTORS

	NOx (2008-9)					SOx (2008-9)				
	Unit 1	Unit 2	Unit 3	Unit 4	Facility	Unit 1	Unit 2	Unit 3	Unit 4	Facility
Baseline Actual Emissions (lb)	66,603	67,820	65,920	62,855	263,198	7,237	7,101	7,092	6,588	28,017
Baseline Actual Capacity Factor	73%	72%	71%	65%	70%	73%	72%	71%	65%	70%
Emissions @ Full Capacity (lb)	86,329	89,055	88,505	91,425	355,029	9,380	9,324	9,522	9,583	37,792
Unused Capacity Emissions (lb)	19,726	21,235	22,585	28,571	91,832	2,143	2,223	2,430	2,995	9,775

	CO (2008-9)					CO2 (2008-9) (Tons)				
	Unit 1	Unit 2	Unit 3	Unit 4	Facility	Unit 1	Unit 2	Unit 3	Unit 4	Facility
Baseline Actual Emissions (lb)	11,406	47,063	20,931	31,080	110,480	717,410	703,892	704,975	652,728	2,779,004
Baseline Actual Capacity Factor	73%	72%	71%	65%	70%	73%	72%	71%	65%	70%
Emissions @ Full Capacity (lb)	14,784	61,798	28,102	45,208	149,027	929,883	924,291	946,510	949,430	3,748,621
Unused Capacity Emissions (lb)	3,378	14,736	7,171	14,128	38,547	212,474	220,399	241,536	296,702	969,617

	PM10 (2007-8)					VOC (2008-9)				
	Unit 1	Unit 2	Unit 3	Unit 4	Facility	Unit 1	Unit 2	Unit 3	Unit 4	Facility
Baseline Actual Emissions (lb)	22,088	23,666	23,696	27,169	96,620	894	1,386	2,092	3,121	7,494
Baseline Actual Capacity Factor	67%	73%	71%	67%	69%	73%	72%	71%	65%	70%
Emissions @ Full Capacity (lb)	31,190	30,795	31,857	38,655	132,202	1,159	1,820	2,809	4,540	10,108
Unused Capacity Emissions (lb)	9,102	7,129	8,160	11,486	35,582	265	434	717	1,419	2,615

Notes and Assumptions:

1. Actual operations during the 5-year baseline analysis period (2007-2011) were limited by market conditions and in some cases major maintenance outages. Individual units have actually operated as high as 79% annual capacity factor.
2. LPGC estimates that with optimum market demand, the plant is capable of operating at a capacity factor of: 95% (Based best case year with 1-2% outage for minor inspections plus 3% for forced outages).
3. Facility has no physical or legal limitations on the utilization of the four combustion turbine generator units. Air permits do not limit annual operating hours or fuel consumption. In order to maintain vendor guarantees, each unit must be inspected periodically. The amount of outage time varies each year. Minimum annual inspection outages (3 days)are incorporated in the above assumed annual capacity factor.
4. Emissions at Capacity are based on Baseline Actual Emissions factored up from actual baseline capacity to the capacity factor that the facility is capable of.
5. Excluded emissions = Emissions at Capacity - Actual Emissions

ANNUAL GENERATION AND CALCULATED CAPACITY FACTORS DURING 5-YEAR BASELINE ANALYSIS PERIOD

	Gross MW-hr				Annual Capacity Factors				
Year	Unit 1	Unit 2	Unit 3	Unit 4	Unit 1	Unit 2	Unit 3	Unit 4	Facility
2007	1,274,773	1,771,257	1,656,782	1,653,538	56%	77%	72%	72%	69%
07-08 Avg.					67%	73%	71%	67%	69%
2008	1,813,427	1,579,966	1,586,924	1,411,472	79%	69%	69%	61%	70%
08-09 Avg.					73%	72%	71%	65%	70%
2009	1,550,896	1,740,937	1,661,010	1,586,503	68%	76%	72%	69%	71%
2010	1,273,327	1,398,323	1,369,994	1,408,802	55%	61%	60%	61%	59%
2011	452,082	397,627	206,679	295,728	20%	17%	9%	13%	15%

Assumptions:

1. Nominal generating capacity (from Permit to Operate): 262 MW

Table 3. SUMMARY OF PRE-PROJECT BASELINE ACTUAL EMISSIONS, POST-PROJECT PROJECTED ACTUAL EMISSIONS, AND EMISSIONS INCREASES

		Pre-Project Baseline Actual Hours and Emissions (BAE)						Representative Post-Project Annual Operations and Emissions: Fogger Operation (% of baseline hours)				Emissions Increase When Foggers are On	Projected Increase during Fogger Op.*					Projected Actual Emissions (PAE)**					Emissions Increase (PAE-BAE- Unused Capacity Emissions)						SER	
Parameter/ Pollutant	Units	Years	Unit 1	Unit 2	Unit 3	Unit 4	Facility Total	Unit 1	Unit 2	Unit 3	Unit 4		Unit 1	Unit 2	Unit 3	Unit 4	Facility Total	Unit 1	Unit 2	Unit 3	Unit 4	Facility Total	Unit 1	Unit 2	Unit 3	Unit 4	Facility Total	Facility Total (tons/yr)	PSD (tons/yr)	Federal Major Mod. NSR (lb/yr)
Operating	hours	2007-2008	6,985	7,541	7,713	7,152	29,390	79.9%	74.0%	72.3%	78.0%																			
Time	hours	2008-2009	7,549	7,360	7,545	6,982	29,435	73.9%	75.8%	74.0%	79.9%																			
NOx	lb	2008-2009	66,603	67,820	65,920	62,855	263,198					1.0%	492	514	488	502	1,996	70,828	73,975	70,135	72,266	287,204	-15,500	-15,081	-18,371	-19,160	-67,826	-34	40	0
SOx	lb	2008-2009	7,237	7,101	7,092	6,588	28,017					4.0%	214	215	210	211	850	7,856	7,906	7,703	7,732	31,198	-1,524	-1,417	-1,819	-1,850	-6,595	-3	40	80,000
CO	lb	2008-2009	11,406	47,063	20,931	31,080	110,480					1.0%	84	357	155	248	844	12,130	51,334	22,269	35,734	121,466	-2,654	-10,465	-5,833	-9,474	-27,561	-14	100	NA
CO2	Tons	2008-2009	717,410	703,892	704,975	652,728	2,779,004					4.0%	21,213	21,348	20,855	20,866	84,282	778,834	783,783	765,689	766,109	3,094,416	-151,049	-140,508	-180,821	-183,321	-654,205	-327	75,000	N/A
PM10	lb	2007-2008	22,088	23,666	23,696	27,169	96,620					4.0%	706	701	686	848	2,940	25,916	25,720	25,177	31,133	107,945	-5,274	-5,076	-6,680	-7,522	-24,257	-12	N/A	30,000
VOC	lb	2008-2009	894	1,386	2,092	3,121	7,494					4.0%	26	42	62	100	230	971	1,543	2,272	3,663	8,450	-188	-277	-537	-877	-1,658	-0.8	N/A	0

***Post-project assumptions regarding fogger operation and effects on fuel use, stack flow and resultant emissions:**

1. Foggers will not increase annual operating hours for any unit.
2. Fogger will operate at full load, and will operate up to this many hours per year: 5580
3. Full load stack mass and volume flow will increase 1% during fogger operations.
4. Foggers will increase fuel consumption approximately 4% when they operate.
5. The SCRs will maintain constant NOx ppm, and the fogger vendor estimates that CO ppm will not change during fogger operation. The combined effect of stack concentration and mass flow will be 1% during fogger operation.
6. SOx, CO2, PM10 and VOC emissions are assumed to increase linearly with fuel consumption, or 4%.

**** Basis for Post-Project Projected Actual Emissions**

1. These projections are based on Baseline Actual Emissions, factored up for anticipated business conditions over the next 5 years plus the projected emission increase from foggers.
2. LPGC anticipates based on existing sales contracts and projected market conditions that the four combustion turbine units will operate approximately with a 91% capacity factor (o 7,972 hours/year) on average.
   In any given year, one unit may operate more than another, but this should have no significant affect on facility-wide emissions because the units are equivalent in design and function.
3. All assumptions are subject to change as a result of actual market conditions, equipment performance and power sales opportunities.

Acronyms:

SER = Significant Emission Rate
NA NSR = Nonattainment New Source Review
N/C = No change
N/A = SER is not applicable due to attainment status of this pollutant.

ATC APPLICATION SUPPLEMENT
LA PALOMA GENERATING PLANT
COMBINED-CYCLE GAS TURBINE GENERATOR INLET AIR FOGGER PROJECT

1.0 INTRODUCTION

La Paloma Generating Company, LLC (LPGC) owns and operates four Alstom GT-24 natural gas-fired combined-cycle combustion turbine (CCCT) generators at the La Paloma Generating Plant (LPGP), which is located in the San Joaquin Valley Air Pollution Control District (SJVAPCD) near McKittrick, CA. Each unit has a separate heat recovery steam generator (HRSG), and steam turbine generator to produce electrical energy. Each CCCT unit uses selective catalytic reduction (SCR) to control nitrogen oxide (NOx), and an oxidation catalyst to control carbon monoxide (CO) which also reduces volatile organic compound (VOC) emissions.

The four CCCT generator units currently operate under the following air quality permits/approvals:

- Prevention of Deterioration Permit (PSD) SJ 98-01 (Modification #3) issued December 21, 2009 by U.S. Environmental Protection Agency Region IX,
- Permits to Operate S-3412-1-17, S-3412-2-18, S-3412-3-18, and S-3412-4-13 renewed January 8, 2010 by the San Joaquin Valley Air Pollution Control District (SJVAPCD), and

The facility also operates under approval from the California Energy Commission (CEC). See CEC Decision; Docket No. 98-AFC-2.

The overall facility design places a high emphasis on flexibility and efficiency in order to meet California's marketplace requirements. The LPGP's combustion turbine generator units were originally designed and permitted to use evaporative inlet coolers, which improve combustion turbine efficiency on hot days. Permits were modified in 2000, prior to the start of operation, to also allow the use of steam injection augmentation to further improve combustion turbine efficiency and increase peak electrical power production during periods of high electrical demand. Upon initial startup, the LPGP's became, and remains today, one of the most efficient power plants in California in terms of heat rate (MMBtu/MW-hr), and greenhouse gas (GHG) emissions (lb CO2/MW-hr).[1]

[1] For simplicity, the PSD applicability analysis in this application supplement focuses on CO_2 emissions. Although methane (CH_4) and nitric oxide (N_20) are more potent GHGs than CO_2, these two GHG compounds are emitted in minute amounts from natural gas-fired gas turbines relative to CO_2. This is reflected in AP-42, the federal GHG mandatory reporting rule, and source tests at other natural gas-fired CCCT power plants with SCR and oxidation catalysts. As a result, CH_4 and N_20 contribute insignificantly to total CO_2-equivalent (CO_2e) emissions from natural gas-fired combustion turbines.

2.0 PROPOSED PROJECT

2.1 Proposed Installation and Operation of Inlet Air Foggers

A typical gas turbine compressor moves nearly constant volumes of air at a given shaft speed. During high ambient temperature days, less dense inlet air produces less mass flow through a gas turbine. Conversely, denser inlet air on cold days results in an increase in the mass flow of air through the turbine and thereby increases the power output of the turbine. For example, a single shaft, industrial gas turbine moves about 2% less air volume at 100°F than it does at ISO rating conditions (59°F and 60% relative humidity). With a temperature decrease of 1°F, a typical gas turbine will produce about 0.5% more power and consume about 0.2% less fuel, per kW of power produced.

The LPGP's existing inlet evaporative coolers act to cool the gas turbine inlet air on hot days. Water vapor from the evaporators also adds air mass flowing through each combustion turbine. However, the effectiveness of these evaporative coolers diminishes with increasing ambient air temperature. Their cooling efficiency drops significantly above 100 degrees Fahrenheit (°F) ambient. LPGC proposes to address this efficiency drop-off on hot days by installing and operating inlet foggers to further enhance air mass cooling.

Inlet fogging consists of spraying water atomized to the size of natural fog droplets (i.e. about 20 microns in diameter) into a combustion turbine's inlet air stream between the evaporative coolers and the turbine compressor inlet. Injecting fog affects turbine air mass temperatures at two locations:

- First, partial evaporation of fog droplets enhances inlet air cooling (i.e., until saturation is reached) before the air mass enters the turbine compressor section, and
- Second, additional evaporative cooling occurs when excess fog droplets evaporate inside the compressor section as air mass temperature rises due to greatly increased pressures. This latter cooling effect is not achievable with evaporative coolers alone.

The efficiency effects of inlet air fogging are further enhanced by the phenomenon that less work is required to compress air at cooler inlet temperatures. Thus, more power is available at the turbine output shaft for a given amount of fuel burned. The foggers may be operated when ambient air temperatures are above 57 °F. Additional information about inlet fogging is provided by the vendor in Attachments 1 and 2.

By increasing air mass flow and decreasing air temperatures entering the combustor section of each turbine engine, inlet air fogging potentially increases peak fuel consumption during maximum firing on hot days. However, maximum fuel flow on hot days is not expected to exceed maximum rated fuel flow for the engines, which occurs on the coldest day. The increased mass flow and reduction in compressor work results in improved turbine output and improved fuel efficiency on hot days, and also reduces the production of NOx emissions as discussed below. The anticipated increase in generating capacity from each of the LPGP combustion turbine is approximately 3-8 MW, thereby recovering "lost" turbine output and efficiency on hot days. Turbine generator output during fogging is not expected to exceed maximum design capacity, which occurs on the coldest day when air density is greatest.

With the proposed Inlet Fogger Project (Project), the LPGP's combined-cycle combustion turbines will remain one of the most efficient combustion turbine facilities currently in operation in California, and will have increased flexibility to provide generating capacity for the California power grid with reduced emissions. In addition to helping reduce natural gas consumption per megawatt-hour (MW-hr) of electrical energy produced, the proposed modification may also reduce GHG carbon emissions (lb CO_2) per MW-hr.

The proposed use of inlet foggers will not increase short term and annual permitted potential emissions (potential to emit) from the CCCT units. The CCCT generator units will remain in compliance with all short term and annual emission limits in the LPGP's existing Permits to Operate and PSD permit. Thus, no changes to emission limits in the existing permits are needed. By increasing the maximum potential hourly rate of fuel consumption as mentioned above, operation of the foggers will increase actual hourly air emissions of some air pollutants on hot days, thereby increasing actual annual emissions by small amounts, but annual and short term emissions from the CCCT units will remain within existing permit limits. A more detailed analysis of emissions and PSD/NSR applicability is provided below.

Please note also that turbine inlet foggers will not influence emissions from any other emission units at the LPGP.

2.2 Anticipated Installation Schedule

The foggers will be installed during a series of scheduled maintenance outages starting as early as January 2nd, 2013 when the combustion turbines are taken out of service and either disassembled for detailed inspection or visually inspected per OEM criteria. LPGC expects to complete unit 1, 2, 3 and 4 fogger installations by June 30, 2013.

3.0 REGULATORY APPLICABILITY ANALYSIS

3.1 Background Information

Relevant background information for this Prevention of Significant Deterioration (PSD) and nonattainment New Source Review (NSR) applicability analysis includes:

1. The SJVAPCD region is currently designated attainment or unclassified for the following five PSD pollutants: nitrogen oxides (NO_x), sulfur dioxide (SO_2), CO, and sulfuric acid (H_2SO_4) mist. GHG is also an attainment pollutant. The SJVAPCD region is designated nonattainment for ozone (O_3) and VOC, particulate matter less than 10 microns (PM_{10}), and particulate matter smaller than 2.5 microns ($PM_{2.5}$). Therefore PSD applies only to NO_x, SO_2, CO, H_2SO_4 mist and GHG within the SJVAPCD.

2. In the SJVAPCD region NO_x, SO_x are nonattainment precursors for O_3 and PM_{10}.

3. The LPGP is a major stationary source. Potential NO_x, SO_2, CO, VOC and PM_{10} emissions are "significant." The facility is also major for GHGs, although the current permit predates U.S. EPA's implementation of PSD requirements for GHGs (i.e., the Tailoring Rule published January 2, 2011 in 75 FR 106, starting page 31514 published June 3, 2010).[2] Emissions of other PSD pollutants (lead (Pb), fluoride (F), H_2SO_4 mist, hydrogen sulfide (H2S) and reduced sulfur compounds) were considered insignificant for the PSD permit based on information in AP-42 Section 3.1-3.

4. U.S. EPA has determined for several previous permit applications that inlet air fogger additions at stationary gas turbine installations constitute a "physical change" for PSD purposes.[3]

5. Whether the proposed Project is "major modification," and therefore subject to PSD review, depends on whether there will be a significant net emissions increase per 40 CFR 52.21(b)(2)(i). Because LPGC's CCCT units provide more than one-third of their potential electrical output capacity and more than 25 MW electrical output to a utility power distribution system for sale, each unit qualifies as an "electric utility steam generating units" (EUSGU). As such, special provisions of 40 CFR 52.21(b)(21)(v) apply to the Project such that current "actual" emissions are compared to future "representative actual annual emissions" to calculate the net emissions increase from the Project.[4] The same approach is allowed for determining whether the Project is a major modification for federal nonattainment NSR purposes (40 CFR 51.165).

6. The Project will not change how the plant is utilized, i.e., the inlet foggers will not cause the facility to operate more hours per day and more hours per year. Any change in utilization compared for historical usage without the foggers will be due to factors independent of the proposed Project (e.g. demand growth, hydro conditions, and other market conditions).

7. As stated above, maximum short-term emissions will not change from those in the current permit. Maximum short-term emissions occur during cold ambient temperature conditions when foggers will not operate.

---

[2] LPGC's PSD permit was originally issued July 27, 1999 and was modified on October 12, 1999, March 13, 2000, July 23, 2002, and December 21, 2004).

[3] U.S. EPA. August 6, 2001. Letter from John S. Seitz to Mr. Patrick Raher, Hogan and Hartson L.L.P., page 3. (http://www.epa.gov/ttn/nsr/gen/cgtsd.pdf)

[4] U.S. EPA. August 6, 2001. Letter from John S. Seitz to Mr. Patrick Raher, Hogan and Hartson L.L.P., page 1. (http://www.epa.gov/ttn/nsr/gen/cgtsd.pdf)

8. Foggers can be turned on or off at will, and/or can be programmed to start automatically. When the foggers are off, the CCCT units will operate just as they do now. The foggers will only operate when the ambient temperature is above 57°F. Based on ambient temperature records, the fogger equipment vendor estimates that temperatures above 57°F may occur approximately 5580 hours per year (see Attachment 2).

3.2 Estimated Emissions

Table 1 provides actual annual emissions data for the previous 5 years from LPGC's annual emission reports for 2007-2011. Representative consecutive two years are identified for each air pollutant, and two-year average emissions are provided in Table 1. These values represent Baseline Actual Emissions (BAE) for each CCCT emission unit and for the four units combined.

La Paloma's CCCT units operated below their permitted rated capacity due to market conditions and actual equipment availability during all baseline years. Table 2 identifies annual capacities and unused capacities, and calculates related actual emissions for each unit and all four units combined. These "Unused Capacity Emissions" are used in subsequent calculations.

Table 3 lists pre-project BAE again, calculates projected emissions increases during annual use of the proposed inlet foggers, calculates post-project Projected Actual Emissions (PAE), and calculates the post-project projected emissions increase (PAE minus BAE minus Unused Capacity Emissions) for each CCCT unit and all four combined, and compares emissions increases to the Significant Emissions Rates (SERs) for PSD and nonattainment NSR. The resulting emissions increase values in Table 3 are negative for all pollutants for the CCCT units individually and combined. Thus, reductions in actual emissions are expected to decrease during anticipated operations in the 5 years after fogger installation.

Important assumptions regarding past and future operations and calculation approach explanations are also provided in Tables 1 through 3. The Microsoft Excel™ workbook for these tables will be provided to SJVAPCD for more detailed review.

Please note that no modifications at the CCCT units have occurred to increase or decrease the Potentials to Emit since start of operation in 2002. Permits to Operate for the LPGP's cooling towers were modified in August 2010 and underwent New Source Review to increase their emission limits for PM10. The 6424 lb/yr emissions increase was offset with ERCs, and the facility remains "Fully Offset." No other modifications causing emissions increases have occurred at the LPGP.

3.3 PSD Applicability

Projected actual emissions increase calculations in Table 3 results for NO_x, SO_x, CO, and CO_2, together with additional information provided above, demonstrate that PSD review is not triggered for the proposed Project. All emissions increases are well below the PSD SERs; therefore, the Project is not a major modification for PSD purposes.

3.4. New Source Review Applicability

3.4.1 BACT. BACT is required under Rule 2201 for the proposed Project if either of the following is true:

1. **The Projects results in an Adjusted Increase in Permitted Emissions (AIPE) greater than 2.0 lb/day (Rule 2201 Section 4.1.2)** – The Project does not increase daily Potential Emissions (i.e., PE1 = PE2). The Project also does not result in a change to emission factors (i.e., EF1 = EF2). Therefore HAPE = PE1, and **AIPE = 0** according to Rule 2201 Sections 4.3 and 4.4.

2. **The Project results in an SB 288 Major Modification or a Federal Major Modification (Rule 2201 Section 4.1.2)** –
   - According to the SJVAPCD February 8, 2011 draft guidance paper on the subject (*Implementation of Rule 2201 (as amended on 12/18/08 and effective on 6/10/10) for SB288 Major Modifications and Federal Major Modifications, Section II, page APR XXX-4*), "For fully offset units (as defined in Rule 2201), the actual emissions are equal to pre-project potential to emit" for the purposes of SB 288 Major Modification determinations. Because the LPGC's CCCTs are Fully Offset Emission Units (see Section 3.4.2 below), and because the Project will not increase PTEs for any pollutant, the Project's emission increases are zero for all units, and the Project is not a SB 288 Major Modification.

   - Emission calculations in Tables 1-3 demonstrate that projected emission increases will be negative and well under the nonattainment SERs. Therefore, the proposed Project is not a Federal Major Modification.

Therefore BACT review is not required for the Project.

3.4.2 Offsets. As required by LPGC's original ATCs, sufficient Emission Reduction Credit (ERC) Certificates to fully offset Plant-wide permitted NOx, SO2, PM10 and VOC emissions were tendered by LPGC in 2002 prior to the start of operation. CO is an attainment pollutant in the Project area, and all air quality impact modeling to date for the facility's permitted PTE has shown no significant impacts, so offsets for CO have not been required for the Plant. In May

2003 ATCs were issued to voluntarily decrease allowable PM10 emissions from the Turbine Units (based on source test results), and ERCs amounts were adjusted at that time. The appropriate amounts of ERC certificates were retired in April 2003. Therefore, all existing permitted emission units at the Plant qualify as "Fully Offset Emissions Units" under Rule 2201 Section 3.20.3. Furthermore, existing Permit to Operate (PTO) Conditions 19, 20 and 22 for the CCCT units contain hourly, daily and annual emission limits for NOx, VOC, SOx, PM10, and CO individually for each combined-cycle gas turbine unit (Turbine Unit). Current PTO Condition 14 also limits hourly emissions of NO_x and CO from all four Turbine Units combined during startups. Therefore, as Fully Offset Emission Units with Specific Limiting Conditions, Rule 2201 Section 3.8.1.3 provides that Baseline Emissions (BE) for each Turbine Unit are equal to the pre-project Potentials to Emit for NO_x, VOC, SO_x and PM_{10}.

Rule 2201 Section 4.7.1 applies to the Project. Because the Plant does not have Cargo Carrier emissions, and because the proposed Project will not increase permitted PTEs (i.e., post-project Potential to Emit (PE2) minus BE is zero for all CCCT units combined), additional offsets are not required for the Project according to Rule 2201 Section 4.7.

3.4.3 Ambient Air Quality Standards. Air quality impacts due to emissions from the four CCCTs and all other emission units at the LPGP have been extensively modeled for the existing Permits to Operate. Modeling was performed for worst-case annual and short term PTE emissions and operating conditions, and demonstrated compliance with ambient air quality standards. Since operation with foggers will not increase PTEs (projected post-project actual emissions will remain well below permitted emissions) and fogger operation will not substantially influence CCCT stack characteristics[5], previous air quality impact modeling results remain relevant for the Project.

LPGP requests that the Project be exempted from air quality modeling requirements under Rule 2201 Section 4.14.1.1 because the Project does not trigger public noticing under NSR Rule Section 5.4.

[5] Stack mass flow will temporarily increase and actual stack temperatures can be expected to remain the same or slightly increase during fogger operation. Remodeling of the existing PTE's with increased stack flow and heat flux would produce impacts that are the same or slightly reduced compared to previous modeling results.

Attachment 1

Mee Industries Inc.
204 West Pomona Ave. • Monrovia, CA 91016-4526
tel. 800-732-5364, 626-359-4550 • fax 626-359-4660

REDUCTION OF GAS TURBINE NO_X EMISSIONS BY INLET AIR FOGGING

Thomas R. Mee III
Chairman & CEO
December 30, 1999

INTRODUCTION

This paper gives the relationship between inlet air fogging and NO_x emissions for a typical single shaft gas turbine. Charts showing the effect of inlet fogging on the production of both specific NO_x (mass of NO_x per unit mass of exhaust gas flow) and total NO_x (mass of NO_x per unit time) are presented.

The quantitative data presented here are for a "typical" single shaft turbine may not be accurate enough to be used for making predictions of actual NO_x emissions from a particular turbine. However, the charts and information given do serve to show that inlet fogging results in a significant reduction in gas turbine NO_x emissions.

Turbine operators who require more accurate predictions of NOx production should consider commissioning a study by a competent consulting firm. Some firms have developed computer models, which can give accurate predictions of NOx as well as other pollutants. Turbine Technology Services, of Houston, TX, offers such services [1].

INLET FOGGING SYSTEMS

Inlet fogging consists of spraying water— atomized to the size of natural fog droplets, i.e. about 20 microns in diameter—into the inlet air stream of a gas turbine. When the fog droplets evaporate they cool the inlet air and make it denser. A gas turbine compressor moves a nearly constant volume of air at a fixed shaft speed[1], so denser air results in an increase in the mass flow of air through the turbine and thereby increases the power output of the turbine. The effect of inlet air fogging is further enhanced by the fact that the work required to compress air is less at cooler inlet temperatures, which means that more power is available at the turbine output shaft. The increased mass flow and reduction in compressor work gives an improvement in turbine output and fuel efficiency, and as we shall see, also reduces the production of both specific and total NO_x emissions. When the inlet air temperature is reduce by one degree Fahrenheit, a typical gas turbine will produce about 0.5% more power and consume about 0.2% less fuel, per kW of power produced.

A further increase in turbine output can be realized by injecting more fog into the inlet air stream than will evaporate with the given ambient climate conditions. The excess, unevaporated fog droplets are pulled into the compressor where they evaporate when the air is heated by compression. This process is often referred to as fog intercooling or fog-overspray and typically gives an additional power boost of 5-10% for every one-weight percent of the air mass flow of water injected. A detailed discussion of inlet air fogging is given by Meher-Homji & Mee, 1999 [3].

NO_X FORMATION IN FOSSIL FUEL COMBUSTION

Nitric oxide (NO) is a toxic gas which makes up about 90 to 95 percent of the nitrogen oxide emissions from fossil fuel combustion. The average lifetime of NO in atmospheric air is short. Within minutes, or even seconds, it is rapidly oxidized to form nitrogen dioxide (NO_2). There are three mechanisms that produce NO_x during the combustion of fossil fuels.

Prompt NO

Prompt NO is caused by the intermediate formation of hydrogen cyanide (HCN) followed by the oxidation of HCN to NO. Prompt NO is only significant in very fuel-rich flames and is produced by high-speed reactions in the flame front. Since natural gas and distillate oils have no chemically bound nitrogen, prompt NO formation is not a significant source of gas turbine emissions.

Fuel NO

Fuel NO is formed by the reaction of fuel-bound nitrogen compounds with oxygen in the combustion air. Again, since natural gas and distillate oils have no chemically bound nitrogen, Fuel NO is also not a significant source of gas turbine NO_x emissions.

[1] A single shaft, industrial gas turbine actually moves about 2% less air volume at 100°F than it does at the ISO rating point (59°F and 60% relative humidity) [2].

Thermal NO

The thermal dissociation and subsequent reaction of nitrogen (N2) and oxygen (O2) molecules in the combustion air are responsible for the formation of thermal NO. This oxidation process occurs in the post flame gases and is the only significant source of gas turbine NO_x emissions. As mentioned above, the NO rapidly oxidizes and forms NO_2.

Assuming constant inlet air temperature and humidity, the rate of formation of thermal NO_x is highly dependent on the air-to-fuel ratio in the combustion zone, the flame temperature and the residence time at the flame temperature. The maximum NO_x production occurs at a slightly lean fuel mixture ratio, due to the excess availability of oxygen for reaction within the hot flame zone. Thermal NO_x production starts at temperatures above about 2370°F (1300°C) and increases markedly with rising temperature. An excellent discussion of NO_x formation is given in "Nitrogen Oxides Control Technology Fact Book," [4].

NO_x emissions are the primary pollutant generated by gas turbines—CO, HC and particulate emissions are so low as to be considered negligible [4,5].

THE GAS TURBINE COMBUSTION PROCESS

Single shaft gas turbines consist of an axial flow compressor, which feeds compressed air to an array of can-type burners. The burner cans are arranged in an annular fashion around the discharge of the compressor. About 20-30% of the airflow from the compressor is fed into the primary zone of the burner where combustion takes place. The balance of the air is fed into the secondary zone where it mixes with and dilutes the combustion gases.

Mixing and dilution of the hot combustion gases with the bypassed air is an important feature of the turbine combustor. The bypassed gasses must be heated and expanded so they can do work in the expansion turbine. Furthermore, the dilution of the very hot combustion gases prevents localized overheating of the hot-gas path components, thereby greatly extending their life span. The average temperature at the combustor exit is normally in excess of 1600°F (871°C) for an older turbine, without internal blade cooling, and as high as 2400°F (1316°C) for newer turbines with internal blade cooling.

In practice, the temperature distribution at the discharge of the combustors is non-uniform and hot spots can exist that are several hundred degrees above the average turbine-inlet temperature [6]. Since thermal NO_x production is a strong function of temperature, and since the NO_x formation process occurs in the post flame gases, these hot spots are likely responsible for a portion of the thermal NO_x produced in a gas turbine engine.

EFFECT OF WATER VAPOR ON NO_x FORMATION

As mentioned above, thermal NO_x formation is highly dependent on combustion temperature so dilution of the fuel-air mixture with an inert and noncombustible substance will reduce the production of NO_x. Injection of water into the primary zone of the combustors has been shown to be particularly effective [7]. Both water and steam are commonly used to reduce gas turbine NO_x production by injection directly into the primary zone of the combustor. The specific heat of water is higher than that of air so the water vapor has a quenching effect in the combustion zone and lowers the equilibrium temperature.

Chart 1.0 shows data taken for a chart given by Lefebvre [8]. The chart gives the reduction in NO_x production for water injected into the compressor inlet[2].

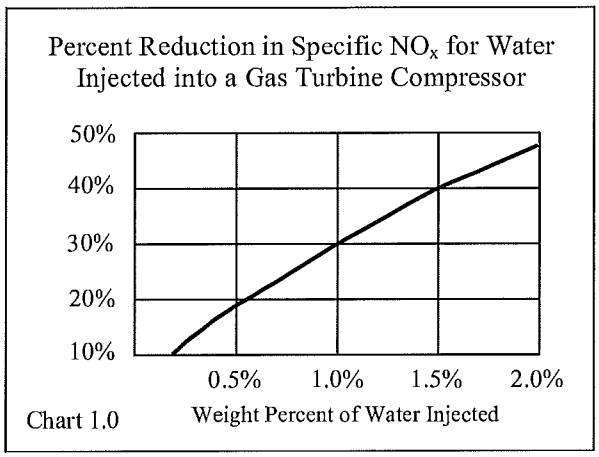

Chart 1.0

Water injected into the compressor is only about half as effective at reducing NO_x levels as compared to water injected into the primary zone of the combustor. This is due to the fact that most of the water injected into the compressor never reaches the primary zone of the combustor. Still, as can be seen from the chart, there is a considerable reduction in NO_x emissions when water is injected into the compressor.

The water injected into the compressor does not have to be liquid; humidity (water vapor) also reduces NO_x emissions. Naturally occurring variations in ambient humidity—the difference between a dry day and a wet day, for instance—can cause as much as a 40-ppm difference in specific NO_x emissions, with the lowest levels of NO_x occur during periods when the ambient humidity is highest [8].

---

[2] It should be noted that Lefebvre's chart, given on page 485 of his book [8], shows percent reduction in NO_x plotted against the ratio of water injected to fuel flow. Chart 2.0 given above assumes that fuel flow is about 2% of total air mass flow.

NO_x PRODUCTION & EVAPORATIVE COOLING

Chart 2.0 (taken from Hung and Campbell [5]) shows specific NO_x—i.e. NO_x per pound of air mass flow—as a percent of the turbine manufacturers rated value at ISO conditions of 59°F and 60% relative humidity. The chart gives a wide range of ambient conditions and allows us to see the effect of cooling and humidifying on NO_x emissions.

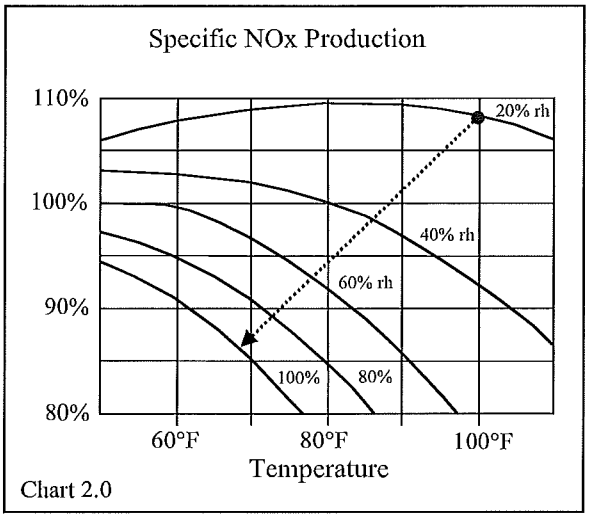

Chart 2.0

For instance, the dashed line shows an evaporative cooling process starting at 100°F and 20% relative humidity and cooling to 69°F and 100% rh. Note that specific NO_x went from about 108% of the ISO rated value to about 86% of the rated value. This is an overall decrease in specific NO_x production of about 22%.

The water injection rates shown in Chart 1.0 can be directly related to degrees of evaporative cooling, for purposes of comparing the data given in the two charts. For instance, cooling from 100°F to 69°F, as discussed in the previous example requires about 0.007 lbs of moisture per lb of dry air, or 0.7% water vapor in the air/water vapor mix. We see that both charts predict about 22% reduction in specific NO_x production for 0.7% of water injected into the compressor inlet.

PSYCHROMETRIC CHART WITH LINES OF TOTAL NO_x

Chart 3.0, shown on the next page, is a psychrometric chart with the data from Hung and Campbell [5] plotted on it. The data have been corrected for variations of mass flow caused by changing specific volume across the range of conditions shown.[3] The dashed curves represent *total* NO_x production (mass of NO_x per unit time) as a percentage of design-point total NO_x. This chart should prove helpful when dealing with emissions authorities who are understandably more interested in total NO_x emissions then in specific NO_x emissions.

A line showing evaporative cooling from 100°F and 20% rh to 69°F has been plotted on the chart. The result is about 15% reduction in total NO_x. The reduction in total NO_x is less than the reduction in specific NO_x because the air-mass flow went up when the air was cooled.

The chart also shows how total NO_x production changes with changing ambient conditions. We can see, for instance, that increasing ambient temperature at a constant specific humidity results in a slight increase in total NO_x.

RESULTS OF FIELD TESTS ON A GE-7EA

Emissions tests were performed on a GE-7EA turbine, which has a fog system installed do970wnstream of an existing media-type evaporative cooler. The fog system is capable of injecting water at the rate of 0.6% of the inlet air mass flow. When the airflow reaches the fog nozzles it is already nearly saturated, due to the water vapor added by the evaporative cooler, so only a small portion of the fog spray evaporates before being pulled into the compressor. As mentioned in the introduction, this technique is called fog intercooling.

The GE-7EA turbine normally produces about 140 ppm of NO_x. However, this turbine is fitted with a steam injection system, which injects steam directly into the primary zone of the combustors, and with a media type evaporative cooling system. Both these systems reduce NO_x emissions.

The tests performed with the inlet fogging system in operation showed a further reduction in specific NOx of about 18%. This is slightly less than predicted in Chart 1.0 but reasonably close given the uncertainties of field testing and the fact that the turbine is already steam injected and evaporatively cooled.

CONCLUSION

By increasing the water vapor content of the combustion air, inlet fogging causes a significant decrease in both specific and total NO_x emissions, regardless of whether the fog system is used for as an evaporative cooling system or for fog intercooling.

[3] The corrections assume that the compressor is a constant volume machine. If we were to take into account the fact that the volumetric flow of the compressor actually falls off as temperature increases, the constant total NO_x curves would be slightly flatter—i.e. lower on the chart as temperature increases.

REFERENCES

1. Turbine Technology Service, Houston TX, contact Mr. Pat Bagley, tel. 281-873-0800.
2. Kitchen and Ebeling, 1995. "Qualifying Combustion Turbines for Inlet Air Cooling Capacity Enhancement," figure 2. ASME GT Conference, paper no. 95-GT-266
3. C. B. Meher-Homji & T. R. Mee "Gas Turbine Power Augmentation by Fogging of Inlet Air," 28th Turbomachinery Symposium, 1999,
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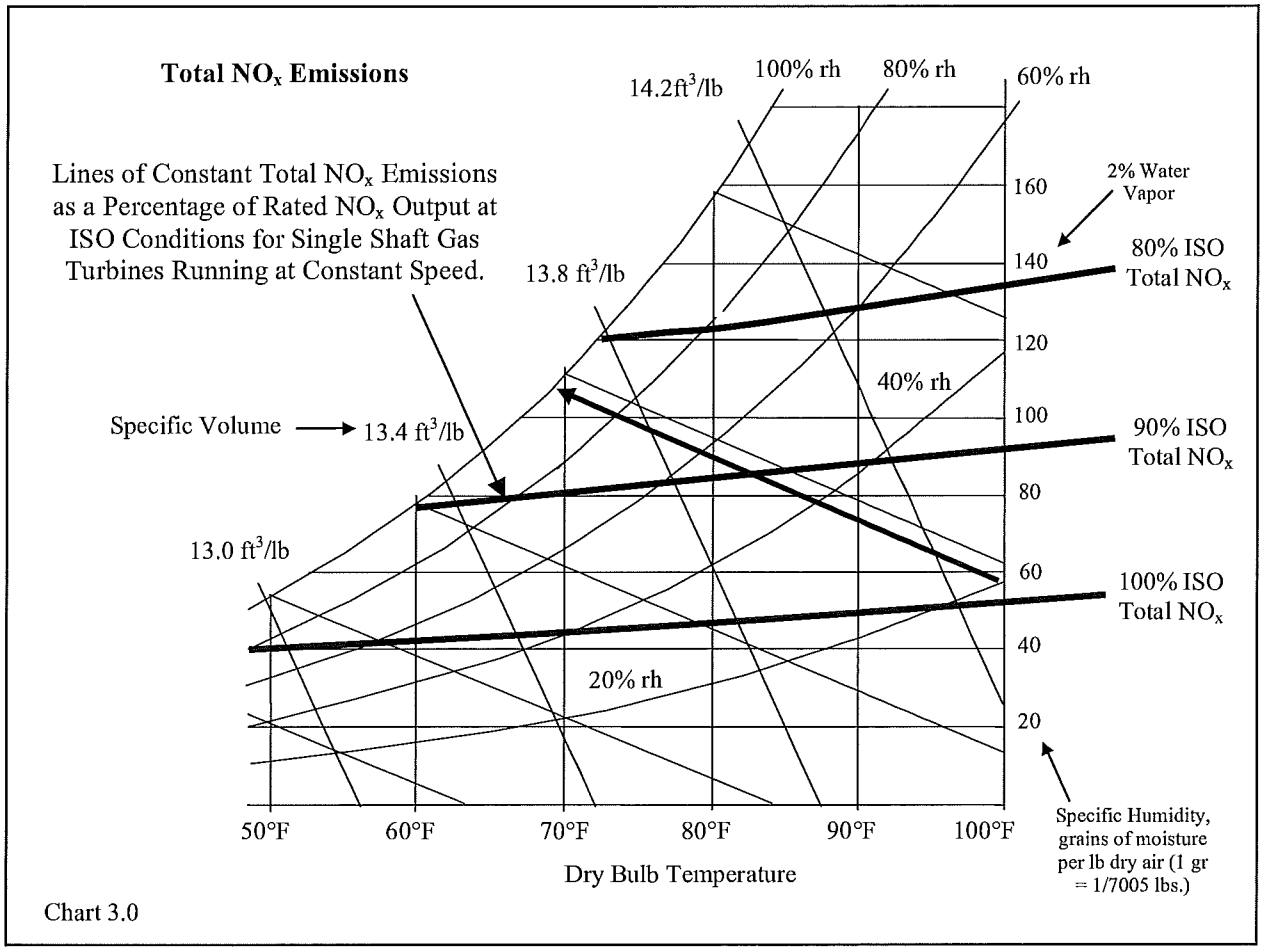

Chart 3.0

Doc. MeeTM3991230

Attachment 2

Mee Industries Inc.

T: 626.359.4550 F: 626.359.4660
16021 Adelante Street, Irwindale, CA 91702
www.meefog.com

November 13, 2012

La Paloma Generating Co. LLC
1760 Skyline Road
McKittrick, CA 93251

Attn: Pablo Cortes Oseguera

Re: Effects of Meefog Overspray application on evap-cooler equipped Alstom GT24

We have calculated the benefits of applying the MeeFog system at several design conditions. The MW increase and fuel flow were modeled using Themoflow's GT Pro™ software. The effects due to evaporation of fog water prior to entering the turbine compressor were modeled with the parameters for the Alstom GT 24 as given in the GT Pro™ library. The GT Pro™ software does not calculate the effect of the evaporation of the fog water within the compressor for the Alstom GT 24 but it does for many other turbine models. For the portion of the water evaporated within the compressor, the GE 7FA was chosen as the most similar equivalent and the result was adjusted for size.

At the design condition of 106°F ambient dry bulb the existing evaporative cooler is expected to be in service. Operating the Meefog system to full capacity at this condition is expected to:

1) Increase MW output 8.06 MW

2) Increase fuel flow by 4%

3) Increase mass flow by 8.96 lb/sec

4) Decrease NOx PPM into SCR by 7%

5) No measurable change in CO emissions PPM

6) Increase in VOC and PM-10 mass emissions by 4%

We estimated the potential hours that the MeeFog System could run based on expected weather. The source of the weather data is Typical Meteorological Year Data Set 2 (TMY2) for Bakersfield, CA from the National Solar Radiation Data Base. TMY2 is composed of hourly values for a collection of twelve representative months. Each representative month is judged the most typical from the thirty-year period of 1961-1990. For example, for Bakersfield CA, January 1982 is used for the January data.

The MeeFog is released for operation at ambient temperature above 57.25°F. The referenced historical data indicates there are 5580 potential hours per year of MeeFog operation.

Sincerely,

Ross Petersen
Regional Sales Director
Mee Industries, Inc.
626-359-4550

ross.petersen@meefog.com

WEBSITE: www.meefog.com

ATTACHMENT 2

SJVAPCD's January 9, 2013 Draft ATCs and January 2, 2013 Application Review

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

JAN 09 2013

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

Re: **Proposed Authorities to Construct / Certificate of Conformity (Minor Mod)**
District Facility # S-3412
Project # 1124366

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authorities to Construct for La Paloma Cogeneration, LLC, located at near the junction of Reserve Road and Skyline Road, approximately 1.9 miles southeast of McKittrick, CA, which has been issued a Title V permit. La Paloma Cogeneration, LLC is requesting that a Certificate of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. The project authorizes installation of inlet air foggers for enhancement of air mass cooling.

Enclosed is the engineering evaluation of this application, a copy of the current Title V permit, and proposed Authorities to Construct # S-3412-1-18, '-2-19, '-3-19, and '-4-14 with Certificate of Conformity. After demonstrating compliance with the Authorities to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

Enclosures
cc: Richard Edgehill, Permit Services

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-0475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

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San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

JAN 09 2013

Jim Maiz
La Paloma Cogeneration, LLC
PO Box 175
McKittrick, CA 93251

Re: Proposed Authorities to Construct / Certificate of Conformity (Minor Mod)
District Facility # S-3412
Project # 1124366

Dear Mr. Maiz:

Enclosed for your review is the District's analysis of your application for Authorities to Construct for the facility identified above. You have requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The project authorizes installation of inlet air foggers for enhancement of air mass cooling.

After addressing any EPA comments made during the 45-day comment period, the Authorities to Construct will be issued to the facility with a Certificate of Conformity. Prior to operating with modifications authorized by the Authorities to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,

for David Warner
Director of Permit Services

Enclosures
cc: Richard Edgehill, Permit Services

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

www.valleyair.org www.healthyairliving.com

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

Facility Name:	La Paloma Generating Company, LLC	Date:	January 2, 2013
Mailing Address:	P O Box 175 McKittrick, CA 93251	Engineer: Lead Engineer:	Richard Edgehill Allan Phillips

Contact Person (s): Jim Maiz, Authorized Representative, (281) 863-9006
Shawn Witherow (661) 762-6055
William Steiner of URS Corp (503) 948-7222
Email: james.maiz@rocklandcapital.com

Application #: S-3412-1-18, 2-19, 3-19 and 4-14
Project #: S-1124366

Complete: December 17, 2012

I. Proposal

La Paloma Generating Company, LLC (LPGC) owns and operates four Alstom GT-24 natural gas-fired combined-cycle combustion turbine (CCCT) generators at the La Paloma Generating Plant (LPGP), which is located in the San Joaquin Valley Air Pollution Control District (SJVAPCD) near McKittrick, CA. Each unit has a separate heat recovery steam generator (HRSG), and steam turbine generator to produce electrical energy. Each CCCT unit uses selective catalytic reduction (SCR) to control nitrogen oxide (NOx), and an oxidation catalyst to control carbon monoxide (CO) which also reduces volatile organic compound (VOC) emissions.

In this project LPGC proposes to install and operate air inlet foggers to enhance air mass cooling on hot days. This change is expected to increase fuel consumption power output by creating denser inlet air to the turbines.

No change in hourly, daily, or annual emissions is proposed. The project does not trigger BACT, offsets, or public notice.

Disposition of Outstanding ATCs

There are no outstanding ATCs for S-3412-1 through '-4. Current PTOs are included in **Attachment I**.

LPGC received their Title V Permit on January 31, 2005. This modification can be classified as a Title V minor modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. LPGC must apply to administratively amend their Title V permit.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410	Prevention of Significant Deterioration (June 16, 2011)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 2540	Acid Rain Program (11/13/97)
Rule 4001	New Source Performance Standards (4/14/99)
	Subpart GG - Standards of Performance for Stationary Gas Turbines
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4703	Stationary Gas Turbines (8/17/06)
Rule 4801	Sulfur Compounds (12/17/92)

California Health & Safety Code (CH&S), Sections 41700 (Health Risk Analysis), 42301.6 (School Notice), and 44300 (Air Toxic "Hot Spots")

III. Project Location

The turbines are operated at NE ¼ Sec 27, T30S, R22E – MDB&M

The site is near the junction of Reserve Road and Skyline Road, approximately 1.9 miles southeast of McKittrick, CA.

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

IV. Process Description

The La Paloma facility consists of four Asea Brown Bovari (ABB) model GT-24 natural gas fired combined cycle gas turbine engines (GTEs) with steam turbines and electrical generators. The GTEs utilize dry low NOx combustors and steam power augmentation. All four of the GTEs (S-3412-1, '2, '3, and '4) are equipped with selective catalytic reduction (SCR) and an oxidation catalyst.

<u>Proposed Modification</u>

A typical gas turbine compressor moves nearly constant volumes of air at a given shaft speed. During high ambient temperature days, less dense inlet air produces less mass flow through a gas turbine. Conversely, denser inlet air on cold days results in an increase in the mass flow of air through the turbine and thereby increases the power output of the turbine. For example, a

single shaft, industrial gas turbine moves about 2% less air volume at 100°F than it does at ISO rating conditions (59°F and 60% relative humidity). With a temperature decrease of 1°F, a typical gas turbine will produce about 0.5% more power and consume about 0.2% less fuel, per kW of power produced.

The LPGC's existing inlet evaporative coolers act to cool the gas turbine inlet air on hot days. Water vapor from the evaporators also adds air mass flowing through each combustion turbine. However, the effectiveness of these evaporative coolers diminishes with increasing ambient air temperature. Their cooling efficiency drops significantly above 100 degrees Fahrenheit (°F) ambient. LPGC proposes to address this efficiency drop-off on hot days by installing and operating inlet foggers to further enhance air mass cooling.

Inlet fogging consists of spraying water atomized to the size of natural fog droplets (i.e. about 20 microns in diameter) into a combustion turbine's inlet air stream between the evaporative coolers and the turbine compressor inlet. Injecting fog affects turbine air mass temperatures at two locations:

- First, partial evaporation of fog droplets enhances inlet air cooling (i.e., until saturation is reached) before the air mass enters the turbine compressor section, and
- Second, additional evaporative cooling occurs when excess fog droplets evaporate inside the compressor section as air mass temperature rises due to greatly increased pressures. This latter cooling effect is not achievable with evaporative coolers alone.

The efficiency effects of inlet air fogging are further enhanced by the phenomenon that less work is required to compress air at cooler inlet temperatures. Thus, more power is available at the turbine output shaft for a given amount of fuel burned. The foggers may be operated when ambient air temperatures are above 57 °F. Manufacturer information about inlet fogging is provided by the vendor in **Attachment II**.

By increasing air mass flow and decreasing air temperatures entering the combustor section of each turbine engine, inlet air fogging increases peak fuel consumption during maximum firing on hot days. However, maximum fuel flow on hot days is not expected to exceed maximum rated fuel flow for the engines, which occurs on the coldest day. The increased mass flow and reduction in compressor work results in improved turbine output and improved fuel efficiency on hot days, and also reduces the production of NOx emissions as discussed below. The anticipated increase in generating capacity from each of the LPGC combustion turbine is approximately 3-8 MW, thereby recovering "lost" turbine output and efficiency on hot days. Turbine generator output during fogging is not expected to exceed maximum design capacity, which occurs on the coldest day when air density is greatest.

No increase in hourly, daily or annual permitted emissions from the CCCT units is proposed.

V. Equipment Listing

Pre-Project Equipment Description:

S-3412-1-17 ABB GT-24 NATURAL GAS FIRED COMBINED CYCLE GAS TURBINE ENGINE/ELECTRICAL GENERATOR #1 WITH DRY LOW NOX COMBUSTORS, STEAM POWER AUGMENTATION, SELECTIVE CATALYTIC REDUCTION, STEAM TURBINE, AND ELECTRICAL GENERATOR (262 MW NOMINAL RATING)

S-3412-2-18 ABB GT-24 NATURAL GAS FIRED COMBINED CYCLE GAS TURBINE ENGINE/ELECTRICAL GENERATOR #2 WITH DRY LOW NOX COMBUSTORS, STEAM POWER AUGMENTATION, SELECTIVE CATALYTIC REDUCTION, STEAM TURBINE AND ELECTRICAL GENERATOR (262 MW NOMINAL RATING)

S-3412-3-18 ABB GT-24 NATURAL GAS FIRED COMBINED CYCLE GAS TURBINE ENGINE/ELECTRICAL GENERATOR #3 WITH DRY LOW NOX COMBUSTORS, STEAM POWER AUGMENTATION, SELECTIVE CATALYTIC REDUCTION, STEAM TURBINE, AND ELECTRICAL GENERATOR (262 MW NOMINAL RATING)

S-3412-4-13 ABB GT-24 NATURAL GAS FIRED COMBINED CYCLE GAS TURBINE ENGINE/ELECTRICAL GENERATOR #4 WITH DRY LOW NOX COMBUSTORS, STEAM POWER AUGMENTATION, OXIDATION CATALYST, SELECTIVE CATALYTIC REDUCTION, STEAM TURBINE, AND ELECTRICAL GENERATOR (262 MW NOMINAL RATING)

Proposed Modification:

S-3412-1-18, '-2-19, '-3-19, and '-4-14: INSTALL AIR INLET FOGGER

Post Project Equipment Description:

S-3412-1-18 ABB GT-24 NATURAL GAS FIRED COMBINED CYCLE GAS TURBINE ENGINE/ELECTRICAL GENERATOR #1 WITH DRY LOW NOX COMBUSTORS, STEAM POWER AUGMENTATION, SELECTIVE CATALYTIC REDUCTION, STEAM TURBINE, AND ELECTRICAL GENERATOR (262 MW NOMINAL RATING)

S-3412-2-19 ABB GT-24 NATURAL GAS FIRED COMBINED CYCLE GAS TURBINE ENGINE/ELECTRICAL GENERATOR #2 WITH DRY LOW NOX COMBUSTORS, STEAM POWER AUGMENTATION, SELECTIVE CATALYTIC REDUCTION, STEAM TURBINE AND ELECTRICAL GENERATOR (262 MW NOMINAL RATING)

S-3412-3-19 ABB GT-24 NATURAL GAS FIRED COMBINED CYCLE GAS TURBINE ENGINE/ELECTRICAL GENERATOR #3 WITH DRY LOW NOX

COMBUSTORS, STEAM POWER AUGMENTATION, SELECTIVE CATALYTIC REDUCTION, STEAM TURBINE, AND ELECTRICAL GENERATOR (262 MW NOMINAL RATING)

S-3412-4-14 ABB GT-24 NATURAL GAS FIRED COMBINED CYCLE GAS TURBINE ENGINE/ELECTRICAL GENERATOR #4 WITH DRY LOW NOX COMBUSTORS, STEAM POWER AUGMENTATION, OXIDATION CATALYST, SELECTIVE CATALYTIC REDUCTION, STEAM TURBINE, AND ELECTRICAL GENERATOR (262 MW NOMINAL RATING)

VI. Emission Control Technology Evaluation

Emissions from the natural gas-fired turbines (S-3412-1 through '-4) include NO_X, CO, VOC, PM_{10}, and SO_X.

NOx emissions will continue to be controlled by the use of Dry Low NOx combustors and selective catalytic reduction (SCR). Steam injection is also used for power augmentation.

The Dry Low NOx combustor reduces the formation of NOx by staging the fuel combustion, which, in turn, lowers the combustion temperature and the formation of thermal NOx. Thermal NO_X formation is primarily a function of flame temperature and residence time. The extent of fuel/air mixing prior to combustion affects NO_X formation. Simultaneous mixing and combustion results in localized fuel-rich zones that yield high flame temperatures in which substantial thermal NO_X production takes place. Hence, staged combustion reduces the amount of thermal energy released by combustion at any one time, thereby lowering the peak combustion temperature and thermal NOx.

SCR is a post-combustion NOx control method that uses ammonia (in the present case) and a catalyst to reduce NOx in the exhaust to nitrogen gas (N_2). Ammonia slip or unreacted ammonia emitted to the atmosphere is a by-product of this pollution control device.

CO and VOC emissions will continue to be controlled by the use of an oxidation catalyst, which utilizes a precious metal catalyst bed to convert CO in the exhaust to carbon dioxide (CO_2).

PM10 and SOx will continue to be minimized by the use of pipeline quality natural gas.

VII. General Calculations

A. Assumptions

No changes in emissions factors and emissions limits for any unit are proposed.

B. Emissions Factors

No changes in emissions factors and emissions limits for any unit are proposed.

C. Calculations

1. Pre-Project Potential to Emit (PE1)

PTO S-3412-1-17, '-2-18, '-3-18, and '-4-13 (each)

PE1		
	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO_X	511.4 (normal), 4790.0 (recommissioning)	146,000
SO_X	91.4	30,520
PM_{10}	264.0	96,360
CO	1873.0	217,920
VOC	139.8	25,060

2. Post Project Potential to Emit (PE2)

There is no change in emissions.

ATCs S-3412-1-18, '-2-19, '-3-19, and '-4-14 (each)

PE2		
	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO_X	511.4 (normal), 4790.0 (recommisioning)	146,000
SO_X	91.4	30,520
PM_{10}	264.0	96,360
CO	1873.0	217,920
VOC	139.8	25,060

Emissions Profiles are included in **Attachment III**.

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

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of Emission Reduction Credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site. The facility has no ERCs.

The following summarizes results from the District's SSPE calculator:

SSPE1 (lb/year)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
SSPE1	585,263	122,086	400,432	873,737	100,975

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

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site. The facility has no ERCs. There is no change in emissions.

SSPE2 (lb/year)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
SSPE2	585,263	122,086	400,432	873,737	100,975

5. Major Source Determination

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. However, for the purposes of determining major source status, the SSPE2 shall not include the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site."

Major Source Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
SSPE1	585,263	122,086	400,432	873,737	100,975
SSPE2	585,263	122,086	400,432	873,737	100,975
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	Yes	No	Yes	Yes	Yes

Rule 2410 Major Source Determination

The facility or the equipment evaluated under this project is listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). Therefore the following PSD Major Source thresholds are applicable.

PSD Major Source Determination (tons/year)							
	NO2	VOC	SO2	CO	PM	PM10*	CO2e**
Estimated Facility PE before Project Increase (SSPE1)	293	50	61	437	200	200	>100,000
PSD Major Source Thresholds	100	100	100	100	100	100	100,000
PSD Major Source ? (Y/N)	Y	N	N	Y	Y	Y	Y

*PM assumed to equal PM10
**CO2e assumed to be greater than 100,000 tons/yr

As shown above, the facility is an existing major source for PSD for at least one pollutant. Therefore the facility is an existing major source for PSD.

6. Baseline Emissions (BE)

The BE calculation (in lbs/year) is performed pollutant-by-pollutant for each unit within the project to calculate the QNEC, and if applicable, to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

The emissions units are fully offset and BE = PE1.

7. SB 288 Major Modification

SB 288 Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."

The emissions units are fully offset and therefore the project does not constitute a SB288 Major Modification.

8. Federal Major Modification

The units are fully offset emissions units and therefore the project is not a Federal Major Modification.

9. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination

Rule 2410 applies to pollutants for which the District is in attainment or for unclasssified, pollutants. The pollutants addressed in the PSD applicability determination are listed as follows:

- NO2 (as a primary pollutant)
- SO2 (as a primary pollutant)
- CO
- PM
- PM10
- Greenhouse gases (GHG): CO2, N2O, CH4, HFCs, PFCs, and SF6

The first step of this PSD evaluation consists of determining whether the facility is an existing PSD Major Source or not (See Section VII.C.5 of this document).

In the case the facility is an existing PSD Major Source, the second step of the PSD evaluation is to determine if the project results in a PSD significant increase.

I. Project Location Relative to Class 1 Area

As demonstrated in the "PSD Major Source Determination" Section above, the facility was determined to be a existing major source for PSD. Because the project is not located within 10 km of a Class 1 area – modeling of the emission increase is not required to determine if the project is subject to the requirements of Rule 2410.

II. Significance of Project Emission Increase

a. Potential to Emit for New or Modified Emission Units

As a screening tool, the potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if total potential to emit from all new and modified units is below this threshold, no futher analysis will be needed.

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)						
	NO2	SO2	CO	PM	PM10	CO2e*
Total PE from New and Modified Units	292	61	436	193	193	>127,768
PSD Significant Emission Increase Thresholds	40	40	100	25	15	75,000
PSD Significant Emission Increase?	Y	Y	Y	Y	Y	Y

* >250 MMBtu/hr x 116.7 lb CO2e/MMBtu = 29,175 lb-CO2e/hour

27,175 lb-CO2e/hour x 8760 hr/year ÷ 2,000 lb/ton > 127,768 tons-CO2e/year

As demonstrated above, because the project has a total potential to emit from all new and modified emission units greater than PSD significant emission increase thresholds, further analysis is required to determine if the project has an emission increase greater than the PSD significant emission increase thresholds, see step below.

b. Emission Increase for Each Attainment/Unclassified Pollutant

In this step, the emission increase for each attainment/unclassified pollutant is compared to the PSD significant emission increase thresholds, and if emission increase for each attainment pollutant is below this threshold, no futher analysis is needed.

For new emissions units, the increase in emissions is equal to the PE2 for each new unit included in this project.

For existing emissions units, the increase in emissions is calculated as follows:

Emission Increase = PAE – BAE - UBC

Where: PAE = Projected Actual Emissions, and
BAE = Baseline Actual Emissions
UBC = Unused baseline capacity

Applicant has provided information on baseline operating capacity factor (BOCF), maximum operating capacity factor (MOCF), and project operating capacity factor (POCF) for calculation PAE, BAE, UBC and Emissions Increase (**Attachment IV**).

A sample calculation for NOx for S-3412-1 is provided below.

NOx

Unit	S-3412-1
BAE	66,603 lb/yr
BOCF	0.73 (73%)
POCF	0.91 (91%)
Max capacity emissions (MCE)* Excess fogger emissions	86,675 lb/yr 66,603 x .739 x 0.01 = 492 lb/yr**
PAE***	70,253 lb/yr
UBC = MCE - BAE	86,675 – 66,603 = 20,072 lb/yr
Emissions Increase	-16,422 lb/yr

*emissions at full (95%) capacity = 0.95 x 66,603/0.73 = 86,675, limited by market demand, maintenance outages

**for Unit #1 fogger increases emissions by 1% and operates 73.9% of baseline operating hours

** 91% capacity factor based on market conditions and increase in emissions due to foggers (1% of i.e. PAE

***66,063 lb/NOx x (.91 x 8760 hrs / 7549hrs) + 492 lbs= 70,253 lbs

Similar calculations included in **Attachment IV** show that there is no emissions increase for NOx, SOx, PM10, CO, $CO2_e$. The results are summarized in the following table.

PSD Significant Emission Increase Determination: Emission Increase (tons/year)						
	NO2	SO2	CO	PM	PM10	CO2e
Emission Increases (only)	0	0	0	0	0	0
PSD Significant Emission Increase Thresholds	40	40	100	25	15	75,000
PSD Significant Emission Increase?	N	N	N	N	N	N

As shown in the table above, the project emission increase, for all new and modified emission units, does not exceed any of the PSD significant emission increase thresholds. Therefore the project does not result in a PSD major modification for a project significance emission increase and no further discussion is required.

10. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. There is no increase in permitted emissions and therefore QNEC = 0.

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions*:

a. Any new emissions unit with a potential to emit exceeding two pounds per day,
b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

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

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

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

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

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

AIPE = PE2 – HAPE

Where,

AIPE = Adjusted Increase in Permitted Emissions, (lb/day)
PE2 = Post-Project Potential to Emit, (lb/day)
HAPE = Historically Adjusted Potential to Emit, (lb/day)

HAPE = PE1 x (EF2/EF1)

Where,
PE1 = The emissions unit's PE prior to modification or relocation, (lb/day)
EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1
EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

AIPE = PE2 – (PE1 * (EF2 / EF1))

There are no changes in emissions factors or emissions i.e. PE2 = PE1 and EF2 = EF1.

AIPE = 0

As demonstrated above, the AIPE is not greater than 2.0 lb/day for PM_{10} emissions. Therefore BACT is not triggered. For modification purposes.

d. SB 288/Federal Major Modification

As discussed in Section VII.C.7 above, this project does not constitute an SB 288 and/or Federal Major Modification for NO_X emissions. Therefore BACT is not triggered for any pollutant.

B. Offsets

1. Offset Applicability

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The SSPE2 is compared to the offset thresholds in the following table.

Offset Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
SSPE2	585,263	122,086	400,432	873,737	100,975
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets calculations required?	Yes	Yes	Yes	Yes	Yes

2. Quantity of Offsets Required

As seen above, the SSPE2 is greater than the offset thresholds for NO_X, SOx, PM10, CO, and VOC. Therefore offset calculations will be required for this project.

Offsets Required (lb/year) = (Σ[PE2 – BE] + ICCE) x DOR, for all new or modified emissions units in the project,

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

BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, Located at a Major Source.

otherwise,

BE = HAE

Note that PE2 = PE1 = BE for this project. Therefore no offsets are required.

C. Public Notification

1. Applicability

Public noticing is required for:
a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
c. Any project which results in the offset thresholds being surpassed, and/or
d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications

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

As demonstrated in VII.C.7, this project does not constitute an SB 288 or Federal Major Modification; therefore, public noticing for SB 288 or Federal Major Modification purposes is not required.

b. PE > 100 lb/day

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. There are no new emissions units associated with this project. Therefore public noticing is not required for this project for PE > 100 lb/day.

c. Offset Threshold

The SSPE1 and SSPE2 are compared to the offset thresholds in the following table.

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO_X	583,263	583,263	20,000 lb/year	No
SO_X	122,086	122,086	54,750 lb/year	No
PM_{10}	400,032	400,032	29,200 lb/year	No
CO	873,737	873,737	200,000 lb/year	No
VOC	100,975	100,975	20,000 lb/year	No

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

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO_x	583,263	583,263	0	20,000 lb/year	No
SO_x	122,086	122,086	0	20,000 lb/year	No
PM_{10}	400,032	400,032	0	20,000 lb/year	No
CO	873,737	873,737	0	20,000 lb/year	No
VOC	100,975	100,975	0	20,000 lb/year	No

As demonstrated above, the SSIPEs for all pollutants were less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.

2. Public Notice Action

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

D. Daily Emission Limits (DELs)

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

Proposed (Current) Rule 2201 (DEL) Conditions:

Except during recommissioning periods for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following on days when a startup or shutdown of the unit occurs: PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, NOx (as NO2): 511.4 lb/day, VOC: 139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Y

During recommissioning periods, for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 4,790.0 lb/day, PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, VOC:139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Y

E. Compliance Assurance

1. Source Testing

Pursuant to District Policy APR 1705, source testing is not required to demonstrate compliance with Rule 2201. No changes to source testing requirements are proposed.

2. Monitoring

No changes in monitoring requirements are proposed for compliance with Rule 2201.

3. Recordkeeping

No changes in recordkeeping requirements are proposed for compliance with Rule 2201.

4. Reporting

No changes in reporting requirements are proposed to demonstrate compliance with Rule 2201.

Rule 2410 Prevention of Significant Deterioration

As shown in Section VII C.8 above the project does not result in a Significant Emissions Increase for any attainment pollutant. Therefore, Rule 2410 is not applicable.

Rule 2520 Federally Mandated Operating Permits

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

In accordance with Rule 2520, these modifications:

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

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

The Certificate of Conformity is provided in **Attachment V**.

Rule 2540 Acid Rain Program

This rule incorporates the Acid Rain Standards from Part 72, Title 40, Code of Federal Regulations (CFR).

The GTEs are subject to the acid rain program as Phase II units, i.e. they were installed after 11/15/90 and have a generator nameplate rating greater than 25 MW.

La Paloma submitted an Acid Rain Program application with the District on 7/26/99, in compliance with Rule 2540 application requirements.

The facility currently operates in compliance acid rain program requirements.

Continued compliance is expected.

Rule 4001 New Source Performance Standards

40 CFR Part 60 Subpart GG applies to all stationary gas turbines ≥10 MMBtu/hr that commence construction, modification, or reconstruction after 10/03/77. The gas turbines involved in this project were installed in 1999; therefore, this subpart applies to these gas turbines.

A NSPS modification is defined as any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted. The project results in no change in emissions and therefore is not a NSPS modification.

Rule 4101 - Visible Emissions

Rule 4101 states that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity.

Continued compliance with this rule is expected.

Rule 4102 Nuisance

Section 4.0 prohibits discharge of air contaminants, which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, continued compliance with this rule is expected.

A. California Health & Safety Code 41700 (Health Risk Assessment)

District Policy APR 1905 – Risk Management Policy for Permitting New and Modified Sources specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

There are no proposed increases in annual emissions of any criteria air contaminants; therefore no Risk Management Review (RMR) was performed for the proposed project.

Continued compliance with Rule 4102 is expected.

Rule 4201 Particulate Matter Concentration

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

There is no proposed change in PM10 permitted emissions. Continued compliance with the PM concentration limit of 0.1 gr/dscf is expected.

District Rule 4703 Stationary Gas Turbines

The purpose of this rule is to limit oxides of nitrogen (NOx) emissions from stationary gas turbine systems.

No change in compliance status is expected with installation of the foggers.
Continued compliance is expected.

Rule 4801 Sulfur Compounds

Rule 4801 requires that sulfur compound emissions (as SO_2) not exceed 0.2% of the exhaust by volume. The turbine combust natural gas only and currently operate in compliance with the rule.

No change in compliance status is expected with installation of the foggers.

Continued compliance is expected.

California Environmental Quality Act (CEQA)

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

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

The District performed an Engineering Evaluation (this document) for the proposed project and determined that all project specific emission unit(s) are exempt from Best Available Control Technology (BACT) requirements. Furthermore, the District has determined that potential emission increases would have a less than significant health impact on sensitive receptors.

Issuance of permits for emissions units not subject to BACT requirements and with health impact less than significant is a matter of ensuring conformity with applicable District rules and regulations and does not require discretionary judgment or deliberation. Thus, the District concludes that this permitting action constitutes a ministerial approval. Section 21080 of the Public Resources Code exempts from the application of CEQA those projects over which a public agency exercises only ministerial approval. Therefore, the District finds that this project is exempt from the provisions of CEQA.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful COC/EPA Noticing period, issue ATCs S-3412-1-18, '-2-19, '-3-19, and '-4-14 subject to the permit conditions on the attached draft ATC in **Attachment VI**.

X. Billing Information

Annual Permit Fees			
Permit Number	**Fee Schedule**	**Fee Description**	**Annual Fee**
S-3412-1-18	3020-08B-H	262,000 kW Gas Turbine	$ 13,208
S-3412-2-19	3020-08B-H	262,000 kW Gas Turbine	$ 13,208
S-3412-3-19	3020-08B-H	262,000 kW Gas Turbine	$ 13,208
S-3412-4-14	3020-08B-H	262,000 kW Gas Turbine	$ 13,208

Attachments

I: Current PTOs
II: Manufacturer's Details on Foggers
III: Emission Profiles
IV: PSD Major Modification Applicability
V: Certificate of Conformity
VI: Draft Authorities To Construct

ATTACHMENT I
CURRENT PTOS

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-3412-1-17 **EXPIRATION DATE:** 01/31/2017

SECTION: NE27 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:
ABB GT-24 NATURAL GAS FIRED COMBINED CYCLE GAS TURBINE ENGINE/ELECTRICAL GENERATOR #1 WITH DRY LOW NOX COMBUSTORS, STEAM POWER AUGMENTATION, SELECTIVE CATALYTIC REDUCTION, STEAM TURBINE, AND ELECTRICAL GENERATOR (262 MW NOMINAL RATING)

PERMIT UNIT REQUIREMENTS

1. Gas turbine engine and generator lube oil vents shall be equipped with mist eliminators. Visible emissions from lube oil vents shall not exceed 5% opacity, except for three minutes in any hour. [District Rule 2201] Federally Enforceable Through Title V Permit
2. The gas turbine engine sball be equipped with continuously recording fuel gas flowmeter. [District Rule 2201] Federally Enforceable Through Title V Permit
3. Gas turbine engine exhaust shall be equipped with a continuously recording emissions monitor for NOx, CO and O2 downstream of the SCR catalyst dedicated to this unit. This continuous emission monitor shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as normal operating conditions. [District Rule 2201, 4703, and 40 CFR Part 64] Federally Enforceable Through Title V Permit
4. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Heat recovery steam generator design shall provide space for additional selective catalytic reduction catalyst and oxidation catalyst if required to meet NOx and CO emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Permittee shall monitor and record exhaust gas temperature at selective catalytic reduction and oxidation catalyst inlets. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Except during startup ignition, gas turbine engine shall be fired exclusively on pipeline quality natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry scf of natural gas. Gas turbine igniters may be fueled with propane or natural gas as part of startup sequence. Use of propane during startup process is limited to 6 grams per second, for a duration of no more than 30 seconds per startup on a design basis. Ignition occurs for the duration of time required to ignite and achieve a sustained flame on natural gas. [District Rule 2201, District Rule 4801, Kern County Rule 407, and PSD permit (SJ 98-01), X.C.1] Federally Enforceable Through Title V Permit
8. Recommissioning activities are defined as, but not limited to, all testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and LPGC contractors to insure safe and reliable steady state operation of the plant. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Recommissioning periods for this unit shall commence at first firing during major outage maintenance procedures. The recommissioning period shall terminate when the unit has completed performance testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

10. Permittee shall notify the District at least seven (7) calendar days prior to start, and no more than 7 calendar days after the end, of recommissioning period for this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Startup is defined as the period beginning with turbine light-off, or when the combustion turbine output is reduced to below minimum load (minimum megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the lb/hr and ppmv emission limits in Condition 21) to engage the steam turbine, until the unit again reaches minimum load. Shutdown is defined as the period beginning with initiation of turbine shutdown sequence and ending either with cessation of firing of the gas turbine engine, or when the unit ramps back up after an aborted shutdown and the unit reaches minimum load. Startup durations shall not exceed three hours, except during recommissioning periods for this unit, and shutdowns shall not exceed one hour, per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit

12. Permittee may inject ammonia during startup when the selective catalytic reduction system is at least 302 degrees F, however ammonia must be injected during startup when the selective catalytic reduction system catalyst temperature exceeds 500 degrees F and selective catalytic reduction system inlet concentrations exceed 2.5 ppmv NOx and as needed during normal operation to meet the NOx emissions limits. Permittee shall monitor and record catalyst temperature during periods of startup. [District Rule 2201] Federally Enforceable Through Title V Permit

13. Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods. [District Rule 1081] Federally Enforceable Through Title V Permit

14. During startup and/or recommissioning of any gas turbine engines, combined emissions from the four gas turbine engines (S-3412-1, '-2, '-3 and '-4) heat recovery steam generator exhausts shall not exceed the following: NOx (as NO2): 900 lb and CO:2,500 lb in any one hour. [District Rule 2201] Federally Enforceable Through Title V Permit

15. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the combustors of this unit shall be tuned to minimize emissions. [District Rule 2201] Federally Enforceable Through Title V Permit

16. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the oxidation catalyst shall be utilized to minimize CO emissions from this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

17. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the Selective Catalytic Reduction (SCR) system shall be utilized to control NOx whenever gas turbine operations are sufficiently stable and minimum catalyst temperature is achieved. [District Rule 2201] Federally Enforceable Through Title V Permit

18. During recommissioning periods for this unit, emission rates from gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 517.3 lb/hr and CO: 439.6 lb/hr. NOx (as NO2) emission limit is a one hour average. CO emission limit is a three-hour rolling average. [District Rule 2201] Federally Enforceable Through Title V Permit

19. Emission rates from the gas turbine engine heat recovery steam generator exhaust, except during startup and/or shutdown of this unit, shall not exceed the following: PM10: 11.0 lb/hr, SOx (as SO2): 3.89 lb/hr, NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15% O2, VOC (as propane): 2.80 lb/hr and 0.7 ppmvd @ 15% O2, and CO: 31.40 lb/hr and either 10 ppmvd @ 15% O2 at operating loads less than or equal to 221 MW (gross three hour average) or 6 ppmvd @ 15% O2 at operating loads greater than 221 MW (gross three hour average). NOx (as NO2) emission limit is a one hour average. All other emission limits are three hour rolling averages. NOx and CO emission limits shall not apply during recommissioning periods. [District Rule 2201; District Rule 4703, 5.1 and 5.2; and 40 CFR 60.332 and 60.333] Federally Enforceable Through Title V Permit

20. Except during recommissioning periods for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following on days when a startup or shutdown of the unit occurs: PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, NOx (as NO2): 511.4 lb/day, VOC: 139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

21. During recommissioning periods, for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 4,790.0 lb/day, PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, VOC:139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

22. Twelve month rolling average emissions from each gas turbine engine heat recovery steam generator exhaust shall not exceed the following PM10: 96,360 lb/year, SOx (as SO2): 30,517 lb/year, NOx (as NO2): 146,001 lb/year, VOC: 25,063 lb/year, and CO: 217,921 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

23. Ammonia emission rate shall not exceed 10 ppmvd @ 15% O2 on a twenty four hour rolling average. [District Rule 4102]

24. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O2 = ((a-(bxc/1,000,000)) x 1,0 00,000 / b) x d, where a = ammonia injection rate(lb/hr)/17(lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol), c = change in measured NOx concentration ppmv at 15% O2 across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. [District Rnle 4102]

25. Short term emissions shall be measured to demonstrate compliance with short term emission limits (lb/hr and ppmv @ 15% O2) annually by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm at full load conditions as follows - NOx: ppmvd @ 15% O2 and lb/hr, CO: ppmvd @ 15% O2 and lb/hr, VOC: ppmvd @ 15% O2 and lb/hr, PM10: lb/hr, and ammonia: ppmvd @ 15% O2. Sample collection for ammonia emissions shall be based on a two-hour or longer average. [District Rule 1081] Federally Enforceable Through Title V Permit

26. Cold start NOx, and CO mass emissions shall be measured, and measurement of cold start VOC emissions shall be performed for one of the gas turbines engines (S-3412-1, '2, '3, or '4) at least every seven years by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. [District Rule 1081] Federally Enforceable Through Title V Permit

27. 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. [District Rules 1081; 2520, 9.3.2; and 2540] Federally Enforceable Through Title V Permit

28. The sulfur content of the natural gas being fired in the turbine shall be determined nsing ASTM method D 3246. [District Rule 2520, 9.3.2 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit

29. Permittee shall maintain records of fuel sulfur content monitoring data and records documenting a constant supplier or source of fuel (a substantial change in fuel quality shall be considered a change in fuel supply). Permittee shall submit results of fuel sulfur content monitoring annually to the District with the Title V Annual Certificate. Permittee shall notify the District of any changes in fuel supplier or source within 60 days of such change. [District Rules 1081 and 2540] Federally Enforceable Through Title V Permit

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

31. The following test methods shall be used NOx: EPA Method 7E or 20, CO: EPA method 10 or 10B, O2: EPA Method 3, 3A, or 20, VOC: EPA method 18, and PM10: EPA method 5 (front half and back half) or EPA methods 201A and 202. Alternative test methods as approved by the District and EPA may also be used to address the source testing requirements of this permit. [District Rules 1081 and 4703, 6.4; and 40 CFR 60.335] Federally Enforceable Through Title V Permit

32. Source testing for ammonia shall be performed using BAAQMD ST-1B. [District Rule 4102]

33. The permittee shall maintain hourly records of ammonia emission concentrations (ppmv @ 15% O2) [District Rule 4102]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

34. The permittee shall maintain hourly records of NOx, and CO emission concentrations (ppmv @ 15% O2), and hourly, daily, and twelve month rolling average records of NOx and CO emissions. Compliance with the hourly, daily, and twelve month rolling average VOC emission limits shall be demonstrated by annual VOC source tests. [District Rule 2201] Federally Enforceable Through Title V Permit

35. The permittee shall maintain records of SOx lb/hr, lb/day, and lb/twelve month rolling average emission. SOx emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [District Rule 2201] Federally Enforceable Through Title V Permit

36. CEM cycling times shall be those specified in 40 CFR, Part 51, Appendix P, Sections 3.4, 3.4.1 and 3.4.2, or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the EPA. [District Rule 1080, 6.4] Federally Enforceable Through Title V Permit

37. The continuous NOx and O2 monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [District Rule 1080, 6.3, 6.5, 6.6 and 7.2] Federally Enforceable Through Title V Permit

38. The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary of data shall be in the form and the manner prescribed by the APCO. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit

39. Operators of CEM systems installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; Applicable time and date of each period during which the CEM was inoperative, except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080, 8.0] Federally Enforceable Through Title V Permit

40. Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. Successive quarterly audits shall occur no closer than two months. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080, 6.2] Federally Enforceable Through Title V Permit

41. APCO or an authorized representative shall be allowed to inspect, as he or she determines to be necessary, the monitoring devices required by this rule to ensure that such devices are functioning properly. [District Rule 1080, 11.0] Federally Enforceable Through Title V Permit

42. Sulfur compound emissions shall not exceed 0.015% by volume at calculated at 15% O2 (150 ppmv @ 15% O2) on a dry basis averaged over 15 consecutive minutes. [District Rule 4801, Kern County Rule 407, and 40 CFR 60.333(a)] Federally Enforceable Through Title V Permit

43. All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device. [40 CFR 60.13(b)] Federally Enforceable Through Title V Permit

44. Continuous emission monitors shall meet applicable requirements of 40 CFR 60.13. [District Rule 4703, 5.1 & 6.4 and 40 CFR 60.13] Federally Enforceable Through Title V Permit

45. By two hours after turbine light-off the owner or operator shall not operate the gas turbine under load conditions, excluding shutdown or recommissioning periods for this unit, which results in the measured concentrations exceeding the following limits: 5 ppmv NOx (as NO2) @ 15% O2 or 200 ppmv CO @ 15% O2. [District Rule 4703, 5.1.2 and 5.2] Federally Enforceable Through Title V Permit

46. The HHV and LHV of the fuel combusted shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

47. The owner or operator shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown, recommissioning period, malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEM system that has been installed pursuant to District Rule 1080 (as amended 12/17/92), emission measurements, total daily and annual hours of operation, hourly quantity of fuel used, and gross three hour average operating load. [District Rules 1080, 7.0; 2520, 9.3.2; 4703, 6.2; and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

48. The owner or 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, 9.4.2] Federally Enforceable Through Title V Permit

49. Air Pollution Control Equipment/Operation: The Permittee shall continuously operate and maintain the following air pollution controls and operations to minimize emissions at or below the levels specified in Conditions X-E of the PSD permit. The aforementioned "continuous" periods of operation do not include periods of startup, shutdown, and recommissioning, as defined in Section X.E.3, and X.F.1 of the PSD permit, or periods of malfnnction as defined in Section IV.B.1 of the PSD permit. The Permittee shall continuously operate Selective Catalytic Reduction (SCR) systems on permit nnits S-3412-1, S-3412-2, S-3412-3, and S-3412-4 to meet the NOx emission limits specified in the PSD permit. The Permittee shall maintain an oxidation catalyst system on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 for control of CO. [PSD permit (SJ 98-01), X.B] Federally Enforceable Through Title V Permit

50. Continuous Emission Monitoring: Prior to the date of startup and thereafter, the Permittee shall install, maintain, and operate the following Continnous Emissions Monitoring Systems (CEM) on each Combustion Turbine Generator (CTG) set exhaust vent stack: a. A continuous monitoring system to measure stack gas NOx concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B); and b. A continuous monitoring system to measure stack CO concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B). [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

51. Continuous Emission Monitoring: The permittee shall install, maintain, and operate a continuously recording fuel gas flow meter on each gas turbine engine. Exhaust gas flow rates shall then be determined from fuel gas flow using EPA Method 19. [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

52. Emission Limits: Emissions from each of the gas turbines (permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4) shall not exceed the following limits, except during periods of startup, shutdown and recommissioning: a. NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15 percent O2, based on a 1-hour average; b. 25.30 lb-CO/hr and 6 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads above 221 MW (gross 3-hour average) or 31.40 lb-CO/hr and 10 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads at or below 221 MW (gross 3-hour average). [PSD permit (SJ 98-01), X.E.1] Federally Enforceable Through Title V Permit

53. Emission Limits: Emission rates from each gas turbine shall not exceed the following daily and annual limits, including all periods of startup, shutdown and recommissioning, except NOx daily limits may be exceeded during recommissioning periods: NOx (as NO2): 511.4 lb/day, 73.0 tons/yr; CO: 1,873.0 lb/day, 109.0 tons/yr; SO2: 91.4 lb/day ,15.3 tons/yr. The annual limit is a 12-month rolling average. [PSD permit (SJ 98-01), X.E.2] Federally Enforceable Through Title V Permit

54. Emission Limits: The following definitions apply to the PSD permit: a. Startup of the combustion turbine is defined as the period beginning with combustion turbine light-off, until the unit reaches minimum load; b. Startup of the steam turbine is defined as the period when the combustion turbine output is reduced to below minimum load, in order to engage the steam turbine, until the unit again reaches minimum load; c. Shutdown is defined as the period beginning with initiation of combustion turbine shutdown sequence and ending either with the cessation of firing of the combustion turbine engine, or when the unit ramps back up after an aborted shutdown, until the unit reaches minimum load; d. Minimum load is defined as the minimum combustion turbine megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the ppmv emission limits in Condition X.E.1 of the PSD permit. [PSD permit (SJ 98-01), X.E.3] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

55. Emission Limits: Each startup, whether of the combustion or steam turbine, shall not exceed three hours per occurrence. Each shutdown shall not exceed one hour per occurrence. [PSD permit (SJ 98-01), X.E.4] Federally Enforceable Through Title V Permit

56. Recommissioning Periods: Recommissioning is defined as the period following an inspection, maintenance, repair and/or overhaul outage where the source conducts operational and contractual testing and tuning to ensure the safe, efficient and reliable operation of the plant. A recommissioning period for any single outage shall not exceed 60 cumulative days of combustion turbine firing. [PSD permit (SJ 98-01), X.F.1] Federally Enforceable Through Title V Permit

57. Recommissioning Periods: Prior to commencing a recommissioning period, permittee shall perform a PSD applicability determination for the action(s) triggering the recommissioning period. [PSD permit (SJ 98-01), X.F.2] Federally Enforceable Through Title V Permit

58. Recommissioning Periods: Permittee shall maintain a copy of each PSD applicability determination on site. In addition, if the action(s) triggering the recommissioning period include(s) the replacement of parts that could affect capacity or emissions, or an overhaul outage, then the permittee shall provide a copy of such determination to EPA prior to the start of the recommissioning period. [PSD permit (SJ 98-01), X.F.3] Federally Enforceable Through Title V Permit

59. Recommissioning Periods: Emission rates from each combustion turbine shall not exceed the following limits during a recommissioning period: 439.6 lbs-CO per hr; 517.3 lbs-NOx per hr; 4,790.0 lbs-NOx per day; 4,443.0 lbs-CO per recommissioning event; 8,545.0 lbs-NOx per recommissioning event. [PSD permit (SJ 98-01), X.F.4] Federally Enforceable Through Title V Permit

60. Recommissioning Periods: The permittee shall maintain the following records for each recommissioning period: a. The number of days the combustion turbine is fired; b. Hourly and daily emissions, in lbs/hr and lbs/day, of NOx and CO emitted; c. Total emissions of NOx and CO emitted during the recommissioning period; d. Documentation of the testing and tuning activities which occurred during the recommissioning period. [PSD permit (SJ 98-01), X.F.5] Federally Enforceable Through Title V Permit

61. Recommissioning Periods: Pursuant to 40 CFR 60.8, within 30 days after the end of a recommissioning period, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. Upon written request and adequate justification from the Permittee, EPA may waive a performance test after a recommissioning period. [PSD permit (SJ 98-01), X.F.6] Federally Enforceable Through Title V Permit

62. Performance Tests: Pursuant to 40 CFR 60.8, within 60 days after achieving the maximum production rate of the affected emission units, but no later than 180 days after the initial startup of equipment (as defined in 40 CFR 60.2), and at such other times as specified by the Regional Administrator, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. The tests for NOx and CO shall be conducted on an annual basis and at the maximum operating capacity of the facilities being tested. Upon written request (Attn: AIR-5) from the Permittee, EPA may approve the conducting of performance tests at a lower specified production rate. After initial performance test and upon written request and adequate justification from the Permittee, EPA may waive a specified annual test for the facility. [PSD permit (SJ 98-01), X.G.1] Federally Enforceable Through Title V Permit

63. Performance Tests: Performance tests for the emissions of CO and NOx shall be conducted and the results reported in accordance with the test methods set forth in 40 CFR 60, Part 60.8 and Appendix A. The following test methods, or alternatives approved by EPA, shall be used: a. Performance tests of the emissions of CO shall be conducted using EPA Methods 1-4 and 10; b. Performance tests of the emissions of NOx shall be conducted using EPA Methods 1-4 and 7E; c. Natural gas sulfur content shall be tested according to ASTM D3246. The EPA (Attn: AIR-5) shall be notified in writing at least 30 days prior to such test to allow time for the 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 EPA 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 EPA. [PSD permit (SJ 98-01), X.G] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

64. Performance Tests: For performance test purposes, sampling ports, platforms, and access shall be provided by the Permittee on the exhaust stack in accordance with 40 CFR 60.8(e). [PSD permit (SJ 98-01), X.G.4] Federally Enforceable Through Title V Permit

65. Recordkeeping and Reporting: A file shall be maintained of all measurements including continuous monitoring system evaluations, all continuous monitoring system or monitoring device calibration checks, adjustments and maintenance performed on these systems or devices, performance and all other information required by 40 CFR 60 or 75 recorded in a permanent form suitable for inspection. The file shall be retained for at least five (5) years following the date of such measurement, maintenance, reports, and records. [PSD permit (SJ 98-01), X.H.1] Federally Enforceable Through Title V Permit

66. Recordkeeping and Reporting: The Permittee shall maintain an operating log for each combustion turbine, which contains at a minimum, the following information: the start and finish times for all startup, shutdown and recommissioning periods. [PSD permit (SJ 98-01), X.H.3] Federally Enforceable Through Title V Permit

67. Recordkeeping and Reporting: The permittee shall submit a written report of all excess emissions to EPA (Attn: AIR-5) for every calendar quarter. The report shall include the following: a. The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions; b. Specific identification of each period of excess emissions that occurs during startups, shutdown, recommissioning, and malfunctions of the engine exhaust systems. The nature and cause of any malfunction (if known) and the corrective action taken or preventative measures adopted shall also be reported; c. The date and time identifying each period during which a CEMS was inoperative, repaired, or adjusted, except for zero and span checks, and the nature of the system repairs or adjustments; d. When no excess emissions have occurred or the CEMS have not been inoperative, repaired, or adjusted, such information shall be stated in the report; e. Excess emissions shall be defined as any 1-hour period during which the average emissions of NOx, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.a of the PSD permit; f. Excess emissions shall be defined as any 3-hour period during which the average emissions of CO, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.b of the PSD permit. [PSD permit (SJ 98-01), X.H.4] Federally Enforceable Through Title V Permit

68. Recordkeeping and Reporting: The facility is subject to the recordkeeping and reporting requirements of the applicable New Source Performance Standards (NSPS) - 40 CFR Part 60, as described in this permit. [PSD permit (SJ 98-01), X.H.5] Federally Enforceable Through Title V Permit

69. New Source Performance Standards: The facility's combustion turbines are subject to the federal New Source Performance Standards (NSPS) - 40 CFR Part 60, Subpart GG, as well as the General Provisions of Subpart A. The owner/operator shall meet the applicable requirements of the aforementioned NSPS Subparts. [PSD permit (SJ 98-01), X.I] Federally Enforceable Through Title V Permit

70. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: District Rule 4801 and Kern County Rule 407 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

71. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.332, 60.333 (a) and (b); 40 CFR 60.334(a), (b)(2), (c), and 40 CFR 60.335(b); District Rule 4703 (as amended 9/20/07), Sections 5.1.1, 5.2, 6.1, 6.3.1, 6.3.3, 6.4, 6.4.5, and 6.4.6 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

72. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.7(b), 60.8, 60.8(d), 60.13, and 60.13(b); District Rules 1080 (as amended 12/17/92), Sections 6.3, 6.4, 6.5, 7.0, 7.1, 7.2, 7.3, 8.0, 9.0, 10.0, and 11.0; and 1081 (as amended 12/16/93) as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

73. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the applicable requirements of District Rule 4201 (as amended 12/17/92). A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

74. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.1] Federally Enforceable Through Title V Permit

75. Gas turbine engine exhaust shall be equipped with an additional continuous NOx analyzer located upstream of the SCR unit for purposes of monitoring ammonia slip (Ammonia Slip NOx Analyzer). This analyzer and shall be capable of monitoring NOx concentration at this location during startups and shutdowns as well as normal operating conditions. [District Rule 4102]

76. The Ammonia Slip NOx Analyzer shall conform to the specifications of Section 6.0, Performance Specification 2, 40 CFR 60, Appendix B. [District Rule 4102]

77. Calibration drift (CD) assessment for the Ammonia Slip NOx Analyzer shall be performed in accordance with requirements specified in section 4 of Appendix F to 40 CFR Part 60. [District Rule 4102]

78. A Cylinder Gas Audit (CGA) of the Ammonia Slip NOx Analyzer shall be performed each quarter in accordance with the procedures of specified in section 5 of Appendix F to 40 CFR Part 60. [District Rule 4102]

79. Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required by this permit, the Ammonia Slip NOx Analyzer shall be in continuous operation. [District Rule 4102]

80. The Ammonia Slip NOx Analyzer shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. [District Rule 4102]

81. Emission data from the Ammonia Slip NOx Analyzer, including the calculated ammonia slip, shall be obtained for at least 18 hours in at least 22 out of 30 successive gas turbine operating days. [District Rule 4102]

82. Notification and record keeping for the Ammonia Slip NOx Analyzer shall be in accordance with the requirements specified in 40 CFR 60.7. [District Rule 4102]

83. An excess ammonia emissions and monitoring system performance report for the Ammonia Slip NOx Analyzer, in accordance with the requirements specified in 40 CFR 60.7, shall be submitted to the APCO for each calendar quarter. [District Rule 4102]

84. Although specific sections of 40 CFR 60 are referenced for convenience in permit conditions for the Ammonia Slip NOx Analyzer, the equipment is not subject to federal enforcement or other federal monitoring, reporting or recordkeeping requirements. [District Rule 4102]

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-3412-2-18 **EXPIRATION DATE:** 01/31/2017

SECTION: NE27 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:
ABB GT-24 NATURAL GAS FIRED COMBINED CYCLE GAS TURBINE ENGINE/ELECTRICAL GENERATOR #2 WITH DRY LOW NOX COMBUSTORS, STEAM POWER AUGMENTATION, SELECTIVE CATALYTIC REDUCTION, STEAM TURBINE AND ELECTRICAL GENERATOR (262 MW NOMINAL RATING)

PERMIT UNIT REQUIREMENTS

1. Gas turbine engine and generator lube oil vents shall be equipped with mist eliminators. Visible emissions from lube oil vents shall not exceed 5% opacity, except for three minutes in any hour. [District Rule 2201] Federally Enforceable Through Title V Permit
2. The gas turbine engine shall be equipped with continuously recording fuel gas flowmeter. [District Rule 2201] Federally Enforceable Through Title V Permit
3. Gas turbine engine exhaust shall be equipped with a continuously recording emissions monitor for NOx, CO and O2 downstream of the SCR catalyst dedicated to this unit. This continuous emission monitor shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as normal operating conditions. [District Rule 2201, 4703, and 40 CFR Part 64] Federally Enforceable Through Title V Permit
4. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Heat recovery steam generator design shall provide space for additional selective catalytic reduction catalyst and oxidation catalyst if required to meet NOx and CO emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Permittee shall monitor and record exhaust gas temperature at selective catalytic reduction and oxidation catalyst inlets. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Except during startup ignition, gas turbine engine shall be fired exclusively on pipeline quality natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry scf of natural gas. Gas turbine igniters may be fueled with propane or natural gas as part of startup sequence. Use of propane during startup process is limited to 6 grams per second, for a duration of no more than 30 seconds per startup on a design basis. Ignition occurs for the duration of time required to ignite and achieve a sustained flame on natural gas. [District Rule 2201, District Rule 4801, Kern County Rule 407, and PSD permit (SJ 98-01), X.C.1] Federally Enforceable Through Title V Permit
8. Recommissioning activities are defined as, but not limited to, all testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and LPGC contractors to insure safe and reliable steady state operation of the plant. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Recommissioning periods for this unit shall commence at first firing during major outage maintenance procedures. The recommissioning period shall terminate when the unit has completed performance testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

10. Permittee shall notify the District at least seven (7) calendar days prior to start, and no more than 7 calendar days after the end, of recommissioning period for this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Startup is defined as the period beginning with turbine light-off, or when the combustion turbine output is reduced to below minimum load (minimum megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the lb/hr and ppmv emission limits in Condition 21) to engage the steam turbine, until the unit again reaches minimum load. Shutdown is defined as the period beginning with initiation of turbine shutdown sequence and ending either with cessation of firing of the gas turbine engine, or when the unit ramps back up after an aborted shutdown and the unit reaches minimum load. Startup durations shall not exceed three hours, except during recommissioning periods for this unit, and shutdowns shall not exceed one hour, per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit

12. Permittee may inject ammonia during startup when the selective catalytic reduction system is at least 302 degrees F, however ammonia must be injected during startup when the selective catalytic reduction system catalyst temperature exceeds 500 degrees F and selective catalytic reduction system inlet concentrations exceed 2.5 ppmv NOx and as needed during normal operation to meet the NOx emissions limits. Permittee shall monitor and record catalyst temperature during periods of startup. [District Rule 2201] Federally Enforceable Through Title V Permit

13. Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods. [District Rule 1081] Federally Enforceable Through Title V Permit

14. During startup and/or recommissioning of any gas turbine engines, combined emissions from the four gas turbine engines (S-3412-1, '-2, '-3 and '-4) heat recovery steam generator exhausts shall not exceed the following: NOx (as NO2): 900 lb and CO:2,500 lb in any one hour. [District Rule 2201] Federally Enforceable Through Title V Permit

15. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the combustors of this unit shall be tuned to minimize emissions. [District Rule 2201] Federally Enforceable Through Title V Permit

16. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the oxidation catalyst shall be utilized to minimize CO emissions from this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

17. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the Selective Catalytic Reduction (SCR) system shall be utilized to control NOx whenever gas turbine operations are sufficiently stable and minimum catalyst temperature is achieved. [District Rule 2201] Federally Enforceable Through Title V Permit

18. During recommissioning periods for this unit, emission rates from gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 517.3 lb/hr and CO: 439.6 lb/hr. NOx (as NO2) emission limit is a one hour average. CO emission limit is a three-hour rolling average. [District Rule 2201] Federally Enforceable Through Title V Permit

19. Emission rates from the gas turbine engine heat recovery steam generator exhaust, except during startup and/or shutdown of this unit, shall not exceed the following: PM10: 11.0 lb/hr, SOx (as SO2): 3.89 lb/hr, NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15% O2, VOC (as propane): 2.80 lb/hr and 0.7 ppmvd @ 15% O2, and CO: 31.40 lb/hr and either 10 ppmvd @ 15% O2 at operating loads less than or equal to 221 MW (gross three hour average) or 6 ppmvd @ 15% O2 at operating loads greater than 221 MW (gross three hour average). NOx (as NO2) emission limit is a one hour average. All other emission limits are three hour rolling averages. NOx and CO emission limits shall not apply during recommissioning periods. [District Rule 2201; District Rule 4703, 5.1 and 5.2; and 40 CFR 60.332 and 60.333] Federally Enforceable Through Title V Permit

20. Except during recommissioning periods for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following on days when a startup or shutdown of the unit occurs: PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, NOx (as NO2): 511.4 lb/day, VOC: 139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

21. During recommissioning periods, for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 4,790.0 lb/day, PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, VOC:139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

22. Twelve month rolling average emissions from each gas turbine engine heat recovery steam generator exhaust shall not exceed the following PM10: 96,360 lb/year, SOx (as SO2): 30,517 lb/year, NOx (as NO2): 146,001 lb/year, VOC: 25,063 lb/year, and CO: 217,921 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

23. Ammonia emission rate shall not exceed 10 ppmvd @ 15% O2 on a twenty four hour rolling average. [District Rule 4102]

24. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O2 = ((a-(bxc/1,000,000)) x 1,0 00,000 / b) x d, where a = ammonia injection rate(lb/hr)/17(lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol), c = change in measured NOx concentration ppmv at 15% O2 across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. [District Rule 4102]

25. Short term emissions shall be measured to demonstrate compliance with short term emission limits (lb/hr and ppmv @ 15% O2) annually by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm at full load conditions as follows - NOx: ppmvd @ 15% O2 and lb/hr, CO: ppmvd @ 15% O2 and lb/hr, VOC: ppmvd @ 15% O2 and lb/hr, PM10: lb/hr, and ammonia: ppmvd @ 15% O2. Sample collection for ammonia emissions shall be based on a two-hour or longer average. [District Rule 1081] Federally Enforceable Through Title V Permit

26. Cold start NOx, and CO mass emissions shall be measured, and measurement of cold start VOC emissions shall be performed for one of the gas turbines engines (S-3412-1, '2, '3, or '4) at least every seven years by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. [District Rule 1081] Federally Enforceable Through Title V Permit

27. 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. [District Rules 1081; 2520, 9.3.2; and 2540] Federally Enforceable Through Title V Permit

28. The sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 3246. [District Rule 2520, 9.3.2 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit

29. Permittee shall maintain records of fuel sulfur content monitoring data and records documenting a constant supplier or source of fuel (a substantial change in fuel quality shall be considered a change in fuel supply). Permittee shall submit results of fuel sulfur content monitoring annually to the District with the Tittle V annual Certificate. Permittee shall notify the District of any changes in fuel supplier or source within 60 days of such change. [District Rules 1081 and 2540] Federally Enforceable Through Title V Permit

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

31. The following test methods shall be used NOx: EPA Method 7E or 20, CO: EPA method 10 or 10B, O2: EPA Method 3, 3A, or 20, VOC: EPA method 18, and PM10: EPA method 5 (front half and back half) or EPA methods 201A and 202. Alternative test methods as approved by the District and EPA may also be used to address the source testing requirements of this permit. [District Rules 1081 and 4703, 6.4; and 40 CFR 60.335] Federally Enforceable Through Title V Permit

32. Source testing for ammonia shall be performed using BAAQMD ST-1B. [District Rule 4102]

33. The permittee shall maintain hourly records of ammonia emission concentrations (ppmv @ 15% O2) [District Rule 4102]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

34. The permittee shall maintain hourly records of NOx, and CO emission concentrations (ppmv @ 15% O2), and hourly, daily, and twelve month rolling average records of NOx and CO emissions. Compliance with the hourly, daily, and twelve month rolling average VOC emission limits shall be demonstrated by annual VOC source tests. [District Rule 2201] Federally Enforceable Through Title V Permit

35. The permittee shall maintain records of SOx lb/hr, lb/day, and lb/twelve month rolling average emission. SOx emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [District Rule 2201] Federally Enforceable Through Title V Permit

36. CEM cycling times shall be those specified in 40 CFR, Part 51, Appendix P, Sections 3.4, 3.4.1 and 3.4.2, or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the EPA. [District Rule 1080, 6.4] Federally Enforceable Through Title V Permit

37. The continuous NOx and O2 monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [District Rule 1080, 6.3, 6.5, 6.6 and 7.2] Federally Enforceable Through Title V Permit

38. The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary of data shall be in the form and the manner prescribed by the APCO. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit

39. Operators of CEM systems installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; Applicable time and date of each period during which the CEM was inoperative, except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080, 8.0] Federally Enforceable Through Title V Permit

40. Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. Successive quarterly audits shall occur no closer than two months. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080, 6.2] Federally Enforceable Through Title V Permit

41. APCO or an authorized representative shall be allowed to inspect, as he or she determines to be necessary, the monitoring devices required by this rule to ensure that such devices are functioning properly. [District Rule 1080, 11.0] Federally Enforceable Through Title V Permit

42. Sulfur compound emissions shall not exceed 0.015% by volume at calculated at 15% O2 (150 ppmv @ 15% O2) on a dry basis averaged over 15 consecutive minutes. [District Rule 4801, Kern County Rule 407, and 40 CFR 60.333(a)] Federally Enforceable Through Title V Permit

43. All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device. [40 CFR 60.13(b)] Federally Enforceable Through Title V Permit

44. Continuous emission monitors shall meet applicable requirements of 40 CFR 60.13. [District Rule 4703, 5.1 & 6.4 and 40 CFR 60.13] Federally Enforceable Through Title V Permit

45. By two hours after turbine light-off the owner or operator shall not operate the gas turbine under load conditions, excluding shutdown or recommissioning periods for this unit, which results in the measured concentrations exceeding the following limits: 5 ppmv NOx (as NO2) @ 15% O2 or 200 ppmv CO @ 15% O2. [District Rule 4703, 5.1.2 and 5.2] Federally Enforceable Through Title V Permit

46. The HHV and LHV of the fuel combusted shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

47. The owner or operator shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown, recommissioning period, malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEM system that has been installed pursuant to District Rule 1080 (as amended 12/17/92), emission measurements, total daily and annual hours of operation, hourly quantity of fuel used, and gross three hour average operating load. [District Rules 1080, 7.0; 2520, 9.3.2; 4703, 6.2; and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

48. The owner or 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, 9.4.2] Federally Enforceable Through Title V Permit

49. Air Pollution Control Equipment/Operation: The Permittee shall continuously operate and maintain the following air pollution controls and operations to minimize emissions at or below the levels specified in Conditions X-E of the PSD permit. The aforementioned "continuous" periods of operation do not include periods of startup, shutdown, and recommissioning, as defined in Section X.E.3, and X.F.1 of the PSD permit, or periods of malfunction as defined in Section IV.B.1 of the PSD permit. The Permittee shall continuously operate Selective Catalytic Reduction (SCR) systems on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 to meet the NOx emission limits specified in the PSD permit. The Permittee shall maintain an oxidation catalyst system on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 for control of CO. [PSD permit (SJ 98-01), X.B] Federally Enforceable Through Title V Permit

50. Continuous Emission Monitoring: Prior to the date of startup and thereafter, the Permittee shall install, maintain, and operate the following Continuous Emissions Monitoring Systems (CEM) on each Combustion Turbine Generator (CTG) set exhaust vent stack: a. A continuous monitoring system to measure stack gas NOx concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B); and b. A continuous monitoring system to measure stack CO concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B). [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

51. Continuous Emission Monitoring: The permittee shall install, maintain, and operate a continuously recording fuel gas flow meter on each gas turbine engine. Exhaust gas flow rates shall then be determined from fuel gas flow using EPA Method 19. [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

52. Emission Limits: Emissions from each of the gas turbines (permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4) shall not exceed the following limits, except during periods of startup, shutdown and recommissioning: a. NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15 percent O2, based on a 1-hour average; b. 25.30 lb-CO/hr and 6 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads above 221 MW (gross 3-hour average) or 31.40 lb-CO/hr and 10 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads at or below 221 MW (gross 3-hour average). [PSD permit (SJ 98-01), X.E.1] Federally Enforceable Through Title V Permit

53. Emission Limits: Emission rates from each gas turbine shall not exceed the following daily and annual limits, including all periods of startup, shutdown and recommissioning, except NOx daily limits may be exceeded during recommissioning periods: NOx (as NO2): 511.4 lb/day, 73.0 tons/yr; CO: 1,873.0 lb/day, 109.0 tons/yr; SO2: 91.4 lb/day ,15.3 tons/yr. The annual limit is a 12-month rolling average. [PSD permit (SJ 98-01), X.E.2] Federally Enforceable Through Title V Permit

54. Emission Limits: The following definitions apply to the PSD permit: a. Startup of the combustion turbine is defined as the period beginning with combustion turbine light-off, until the unit reaches minimum load; b. Startup of the steam turbine is defined as the period when the combustion turbine output is reduced to below minimum load, in order to engage the steam turbine, until the unit again reaches minimum load; c. Shutdown is defined as the period beginning with initiation of combustion turbine shutdown sequence and ending either with the cessation of firing of the combustion turbine engine, or when the unit ramps back up after an aborted shutdown, until the unit reaches minimum load; d. Minimum load is defined as the minimum combustion turbine megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the ppmv emission limits in Condition X.E.1 of the PSD permit. [PSD permit (SJ 98-01), X.E.3] Federally Enforceable Through Title V Permit

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55. Emission Limits: Each startup, whether of the combustion or steam turbine, shall not exceed three hours per occurrence. Each shutdown shall not exceed one hour per occurrence. [PSD permit (SJ 98-01), X.E.4] Federally Enforceable Through Title V Permit

56. Recommissioning Periods: Recommissioning is defined as the period following an inspection, maintenance, repair and/or overhaul outage where the source conducts operational and contractual testing and tuning to ensure the safe, efficient and reliable operation of the plant. A recommissioning period for any single outage shall not exceed 60 cumulative days of combustion turbine firing. [PSD permit (SJ 98-01), X.F.1] Federally Enforceable Through Title V Permit

57. Recommissioning Periods: Prior to commencing a recommissioning period, permittee shall perform a PSD applicability determination for the action(s) triggering the recommissioning period. [PSD permit (SJ 98-01), X.F.2] Federally Enforceable Through Title V Permit

58. Recommissioning Periods: Permittee shall maintain a copy of each PSD applicability determination on site. In addition, if the action(s) triggering the recommissioning period include(s) the replacement of parts that could affect capacity or emissions, or an overhaul outage, then the permittee shall provide a copy of such determination to EPA prior to the start of the recommissioning period. [PSD permit (SJ 98-01), X.F.3] Federally Enforceable Through Title V Permit

59. Recommissioning Periods: Emission rates from each combustion turbine shall not exceed the following limits during a recommissioning period: 439.6 lbs-CO per hr; 517.3 lbs-NOx per hr; 4,790.0 lbs-NOx per day; 4,443.0 lbs-CO per recommissioning event; 8,545.0 lbs-NOx per recommissioning event. [PSD permit (SJ 98-01), X.F.4] Federally Enforceable Through Title V Permit

60. Recommissioning Periods: The permittee shall maintain the following records for each recommissioning period: a. The number of days the combustion turbine is fired; b. Hourly and daily emissions, in lbs/hr and lbs/day, of NOx and CO emitted; c. Total emissions of NOx and CO emitted during the recommissioning period; d. Documentation of the testing and tuning activities which occurred during the recommissioning period. [PSD permit (SJ 98-01), X.F.5] Federally Enforceable Through Title V Permit

61. Recommissioning Periods: Pursuant to 40 CFR 60.8, within 30 days after the end of a recommissioning period, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. Upon written request and adequate justification from the Permittee, EPA may waive a performance test after a recommissioning period. [PSD permit (SJ 98-01), X.F.6] Federally Enforceable Through Title V Permit

62. Performance Tests: Pursuant to 40 CFR 60.8, within 60 days after achieving the maximum production rate of the affected emission units, but no later than 180 days after the initial startup of equipment (as defined in 40 CFR 60.2), and at such other times as specified by the Regional Administrator, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. The tests for NOx and CO shall be conducted on an annual basis and at the maximum operating capacity of the facilities being tested. Upon written request (Attn: AIR-5) from the Permittee, EPA may approve the conducting of performance tests at a lower specified production rate. After initial performance test and upon written request and adequate justification from the Permittee, EPA may waive a specified annual test for the facility. [PSD permit (SJ 98-01), X.G.1] Federally Enforceable Through Title V Permit

63. Performance Tests: Performance tests for the emissions of CO and NOx shall be conducted and the results reported in accordance with the test methods set forth in 40 CFR 60, Part 60.8 and Appendix A. The following test methods, or alternatives approved by EPA, shall be used: a. Performance tests of the emissions of CO shall be conducted using EPA Methods 1-4 and 10; b. Performance tests of the emissions of NOx shall be conducted using EPA Methods 1-4 and 7E; c. Natural gas sulfur content shall be tested according to ASTM D3246. The EPA (Attn: AIR-5) shall be notified in writing at least 30 days prior to such test to allow time for the 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 EPA 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 EPA. [PSD permit (SJ 98-01), X.G] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

64. Performance Tests: For performance test purposes, sampling ports, platforms, and access shall be provided by the Permittee on the exhaust stack in accordance with 40 CFR 60.8(c). [PSD permit (SJ 98-01), X.G.4] Federally Enforceable Through Title V Permit

65. Recordkeeping and Reporting: A file shall be maintained of all measurements including continuous monitoring system evaluations, all continuous monitoring system or monitoring device calibration checks, adjustments and maintenance performed on these systems or devices, performance and all other information required by 40 CFR 60 or 75 recorded in a permanent form suitable for inspection. The file shall be retained for at least five (5) years following the date of such measurement, maintenance, reports, and records. [PSD permit (SJ 98-01), X.H.1] Federally Enforceable Through Title V Permit

66. Recordkeeping and Reporting: The Permittee shall maintain an operating log for each combustion turbine, which contains at a minimum, the following information: the start and finish times for all startup, shutdown and recommissioning periods. [PSD permit (SJ 98-01), X.H.3] Federally Enforceable Through Title V Permit

67. Recordkeeping and Reporting: The permittee shall submit a written report of all excess emissions to EPA (Attn: AIR-5) for every calendar quarter. The report shall include the following: a. The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions; b. Specific identification of each period of excess emissions that occurs during startups, shutdown, recommissioning, and malfunctions of the engine exhaust systems. The nature and cause of any malfunction (if known) and the corrective action taken or preventative measures adopted shall also be reported; c. The date and time identifying each period during which a CEMS was inoperative, repaired, or adjusted, except for zero and span checks, and the nature of the system repairs or adjustments; d. When no excess emissions have occurred or the CEMS have not been inoperative, repaired, or adjusted, such information shall be stated in the report; e. Excess emissions shall be defined as any 1-hour period during which the average emissions of NOx, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.a of the PSD permit; f. Excess emissions shall be defined as any 3-hour period during which the average emissions of CO, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.b of the PSD permit. [PSD permit (SJ 98-01), X.H.4] Federally Enforceable Through Title V Permit

68. Recordkeeping and Reporting: The facility is subject to the recordkeeping and reporting requirements of the applicable New Source Performance Standards (NSPS) - 40 CFR Part 60, as described in this permit. [PSD permit (SJ 98-01), X.H.5] Federally Enforceable Through Title V Permit

69. New Source Performance Standards: The facility's combustion turbines are subject to the federal New Source Performance Standards (NSPS) - 40 CFR Part 60, Subpart GG, as well as the General Provisions of Subpart A. The owner/operator shall meet the applicable requirements of the aforementioned NSPS Subparts. [PSD permit (SJ 98-01), X.I] Federally Enforceable Through Title V Permit

70. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: District Rule 4801 and Kern County Rule 407 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

71. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.332, 60.333 (a) and (b); 40 CFR 60.334(a), (b)(2), (c), and 40 CFR 60.335(b); District Rule 4703 (as amended 9/20/07), Sections 5.1.1, 5.2, 6.1, 6.3.1, 6.3.3, 6.4, 6.4.5, and 6.4.6 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

72. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.7(b), 60.8, 60.8(d), 60.13, and 60.13(b); District Rules 1080 (as amended 12/17/92), Sections 6.3, 6.4, 6.5, 7.0, 7.1, 7.2, 7.3, 8.0, 9.0, 10.0, and 11.0; and 1081 (as amended 12/16/93) as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

73. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the applicable requirements of District Rule 4201 (as amended 12/17/92). A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

74. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.1] Federally Enforceable Through Title V Permit

75. Gas turbine engine exhaust shall be equipped with an additional continuous NOx analyzer located upstream of the SCR unit for purposes of monitoring ammonia slip (Ammonia Slip NOx Analyzer). This analyzer and shall be capable of monitoring NOx concentration at this location during startups and shutdowns as well as normal operating conditions. [District Rule 4102]

76. The Ammonia Slip NOx Analyzer shall conform to the specifications of Section 6.0, Performance Specification 2, 40 CFR 60, Appendix B. [District Rule 4102]

77. Calibration drift (CD) assessment for the Ammonia Slip NOx Analyzer shall be performed in accordance with requirements specified in section 4 of Appendix F to 40 CFR Part 60. [District Rule 4102]

78. A Cylinder Gas Audit (CGA) of the Ammonia Slip NOx Analyzer shall be performed each quarter in accordance with the procedures of specified in section 5 of Appendix F to 40 CFR Part 60. [District Rule 4102]

79. Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required by this permit, the Ammonia Slip NOx Analyzer shall be in continuous operation. [District Rule 4102]

80. The Ammonia Slip NOx Analyzer shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. [District Rule 4102]

81. Emission data from the Ammonia Slip NOx Analyzer, including the calculated ammonia slip, shall be obtained for at least 18 hours in at least 22 out of 30 successive gas turbine operating days. [District Rule 4102]

82. Notification and record keeping for the Ammonia Slip NOx Analyzer shall be in accordance with the requirements specified in 40 CFR 60.7. [District Rule 4102]

83. An excess ammonia emissions and monitoring system performance report for the Ammonia Slip NOx Analyzer, in accordance with the requirements specified in 40 CFR 60.7, shall be submitted to the APCO for each calendar quarter. [District Rule 4102]

84. Although specific sections of 40 CFR 60 are referenced for convenience in permit conditions for the Ammonia Slip NOx Analyzer, the equipment is not subject to federal enforcement or other federal monitoring, reporting or recordkeeping requirements. [District Rule 4102]

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-3412-3-18 **EXPIRATION DATE:** 01/31/2017

SECTION: NE27 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:
ABB GT-24 NATURAL GAS FIRED COMBINED CYCLE GAS TURBINE ENGINE/ELECTRICAL GENERATOR #3 WITH DRY LOW NOX COMBUSTORS, STEAM POWER AUGMENTATION, SELECTIVE CATALYTIC REDUCTION, STEAM TURBINE, AND ELECTRICAL GENERATOR (262 MW NOMINAL RATING)

PERMIT UNIT REQUIREMENTS

1. Gas turbine engine and generator lube oil vents shall be equipped with mist eliminators. Visible emissions from lube oil vents shall not exceed 5% opacity, except for three minutes in any hour. [District Rule 2201] Federally Enforceable Through Title V Permit
2. The gas turbine engine shall be equipped with continuously recording fuel gas flowmeter. [District Rule 2201] Federally Enforceable Through Title V Permit
3. Gas turbine engine exhaust shall be equipped with a continuously recording emissions monitor for NOx, CO and O2 downstream of the SCR catalyst dedicated to this unit. This continuous emission monitor shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as normal operating conditions. [District Rule 2201, 4703, and 40 CFR Part 64] Federally Enforceable Through Title V Permit
4. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Heat recovery steam generator design shall provide space for additional selective catalytic reduction catalyst and oxidation catalyst if required to meet NOx and CO emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Permittee shall monitor and record exhaust gas temperature at selective catalytic reduction and oxidation catalyst inlets. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Except during startup ignition, gas turbine engine shall be fired exclusively on pipeline quality natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry scf of natural gas. Gas turbine igniters may be fueled with propane or natural gas as part of startup sequence. Use of propane during startup process is limited to 6 grams per second, for a duration of no more than 30 seconds per startup on a design basis. Ignition occurs for the duration of time required to ignite and achieve a sustained flame on natural gas. [District Rule 2201, District Rule 4801, Kern County Rule 407, and PSD permit (SJ 98-01), X.C.1] Federally Enforceable Through Title V Permit
8. Recommissioning activities are defined as, but not limited to, all testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and LPGC contractors to insure safe and reliable steady state operation of the plant. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Recommissioning periods for this unit shall commence at first firing during major outage maintenance procedures. The recommissioning period shall terminate when the unit has completed performance testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

10. Permittee shall notify the District at least seven (7) calendar days prior to start, and no more than 7 calendar days after the end, of recommissioning period for this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Startup is defined as the period beginning with turbine light-off, or when the combustion turbine output is reduced to below minimum load (minimum megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the lb/hr and ppmv emission limits in Condition 21) to engage the steam turbine, until the unit again reaches minimum load. Shutdown is defined as the period beginning with initiation of turbine shutdown sequence and ending either with cessation of firing of the gas turbine engine, or when the unit ramps back up after an aborted shutdown and the unit reaches minimum load. Startup durations shall not exceed three hours, except during recommissioning periods for this unit, and shutdowns shall not exceed one hour, per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit

12. Permittee may inject ammonia during startup when the selective catalytic reduction system is at least 302 degrees F, however ammonia must be injected during startup when the selective catalytic reduction system catalyst temperature exceeds 500 degrees F and selective catalytic reduction system inlet concentrations exceed 2.5 ppmv NOx and as needed during normal operation to meet the NOx emissions limits. Permittee shall monitor and record catalyst temperature during periods of startup. [District Rule 2201] Federally Enforceable Through Title V Permit

13. Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods. [District Rule 1081] Federally Enforceable Through Title V Permit

14. During startup and/or recommissioning of any gas turbine engines, combined emissions from the four gas turbine engines (S-3412-1, '-2, '-3 and '-4) heat recovery steam generator exhausts shall not exceed the following: NOx (as NO2): 900 lb and CO:2,500 lb in any one hour. [District Rule 2201] Federally Enforceable Through Title V Permit

15. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the combustors of this unit shall be tuned to minimize emissions. [District Rule 2201] Federally Enforceable Through Title V Permit

16. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the oxidation catalyst shall be utilized to minimize CO emissions from this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

17. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the Selective Catalytic Reduction (SCR) system shall be utilized to control NOx whenever gas turbine operations are sufficiently stable and minimum catalyst temperature is achieved. [District Rule 2201] Federally Enforceable Through Title V Permit

18. During recommissioning periods for this unit, emission rates from gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 517.3 lb/hr and CO: 439.6 lb/hr. NOx (as NO2) emission limit is a one hour average. CO emission limit is a three-hour rolling average. [District Rule 2201] Federally Enforceable Through Title V Permit

19. Emission rates from the gas turbine engine heat recovery steam generator exhaust, except during startup and/or shutdown of this unit, shall not exceed the following: PM10: 11.0 lb/hr, SOx (as SO2): 3.89 lb/hr, NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15% O2, VOC (as propane): 2.80 lb/hr and 0.7 ppmvd @ 15% O2, and CO: 31.40 lb/hr and either 10 ppmvd @ 15% O2 at operating loads less than or equal to 221 MW (gross three hour average) or 6 ppmvd @ 15% O2 at operating loads greater than 221 MW (gross three hour average). NOx (as NO2) emission limit is a one hour average. All other emission limits are three hour rolling averages. NOx and CO emission limits shall not apply during recommissioning periods. [District Rule 2201; District Rule 4703, 5.1 and 5.2; and 40 CFR 60.332 and 60.333] Federally Enforceable Through Title V Permit

20. Except during recommissioning periods for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following on days when a startup or shutdown of the unit occurs: PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, NOx (as NO2): 511.4 lb/day, VOC: 139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

21. During recommissioning periods, for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 4,790.0 lb/day, PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, VOC:139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

22. Twelve month rolling average emissions from each gas turbine engine heat recovery steam generator exhaust shall not exceed the following PM10: 96,360 lb/year, SOx (as SO2): 30,517 lb/year, NOx (as NO2): 146,001 lb/year, VOC: 25,063 lb/year, and CO: 217,921 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

23. Ammonia emission rate shall not exceed 10 ppmvd @ 15% O2 on a twenty four hour rolling average. [District Rule 4102]

24. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O2 = ((a-(bxc/1,000,000)) x 1,0 00,000 / b) x d, where a = ammonia injection rate(lh/hr)/17(lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol), c = change in measured NOx concentration ppmv at 15% O2 across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. [District Rule 4102]

25. Short term emissions shall be measured to demonstrate compliance with short term emission limits (lb/hr and ppmv @ 15% O2) annually by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm at full load conditions as follows - NOx: ppmvd @ 15% O2 and lb/hr, CO: ppmvd @ 15% O2 and lb/hr, VOC: ppmvd @ 15% O2 and lb/hr, PM10: lb/hr, and ammonia: ppmvd @ 15% O2. Sample collection for ammonia emissions shall be based on a two-hour or longer average. [District Rule 1081] Federally Enforceable Through Title V Permit

26. Cold start NOx, and CO mass emissions shall be measured, and measurement of cold start VOC emissions shall be performed for one of the gas turbines engines (S-3412-1, '2, '3, or '4) at least every seven years by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. [District Rule 1081] Federally Enforceable Through Title V Permit

27. 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. [District Rules 1081; 2520, 9.3.2; and 2540] Federally Enforceable Through Title V Permit

28. The sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 3246. [District Rule 2520, 9.3.2 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit

29. Permittee shall maintain records of fuel sulfur content monitoring data and records documenting a constant supplier or source of fuel (a substantial change in fuel quality shall be considered a change in fuel supply). Permittee shall submit results of fuel sulfur content monitoring annually to the District with the Tittle V annual Certificate. Permittee shall notify the District of any changes in fuel supplier or source within 60 days of such change. [District Rules 1081 and 2540] Federally Enforceable Through Title V Permit

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

31. The following test methods shall be used NOx: EPA Method 7E or 20, CO: EPA method 10 or 10B, O2: EPA Method 3, 3A, or 20, VOC: EPA method 18, and PM10: EPA method 5 (front half and back half) or EPA methods 201A and 202. Alternative test methods as approved by the District and EPA may also be used to address the sonrce testing requirements of this permit. [District Rules 1081 and 4703, 6.4; and 40 CFR 60.335] Federally Enforceable Through Title V Permit

32. Source testing for ammonia shall be performed using BAAQMD ST-1B. [District Rule 4102]

33. The permittee shall maintain hourly records of ammonia emission concentrations (ppmv @ 15% O2) [District Rule 4102]

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34. The permittee shall maintain hourly records of NOx, and CO emission concentrations (ppmv @ 15% O2), and hourly, daily, and twelve month rolling average records of NOx and CO emissions. Compliance with the hourly, daily, and twelve month rolling average VOC emission limits shall be demonstrated by annual VOC source tests. [District Rule 2201] Federally Enforceable Through Title V Permit

35. The permittee shall maintain records of SOx lb/hr, lb/day, and lb/twelve month rolling average emission. SOx emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [District Rule 2201] Federally Enforceable Through Title V Permit

36. CEM cycling times shall be those specified in 40 CFR, Part 51, Appendix P, Sections 3.4, 3.4.1 and 3.4.2, or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the EPA. [District Rule 1080, 6.4] Federally Enforceable Through Title V Permit

37. The continuous NOx and O2 monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [District Rule 1080, 6.3, 6.5, 6.6 and 7.2] Federally Enforceable Through Title V Permit

38. The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary of data shall be in the form and the manner prescribed by the APCO. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit

39. Operators of CEM systems installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; Applicable time and date of each period during which the CEM was inoperative, except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080, 8.0] Federally Enforceable Through Title V Permit

40. Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. Successive quarterly audits shall occur no closer than two months. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080, 6.2] Federally Enforceable Through Title V Permit

41. APCO or an authorized representative shall be allowed to inspect, as he or she determines to be necessary, the monitoring devices required by this rule to ensure that such devices are functioning properly. [District Rule 1080, 11.0] Federally Enforceable Through Title V Permit

42. Sulfur compound emissions shall not exceed 0.015% by volume at calculated at 15% O2 (150 ppmv @ 15% O2) on a dry basis averaged over 15 consecutive minutes. [District Rule 4801, Kern County Rule 407, and 40 CFR 60.333(a)] Federally Enforceable Through Title V Permit

43. All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device. [40 CFR 60.13(b)] Federally Enforceable Through Title V Permit

44. Coutinuous emission monitors shall meet applicable requirements of 40 CFR 60.13. [District Rule 4703, 5.1 & 6.4 and 40 CFR 60.13] Federally Enforceable Through Title V Permit

45. By two hours after turbine light-off the owner or operator shall not operate the gas turbine under load conditions, excluding shutdown or recommissioning periods for this unit, which results in the measured concentrations exceeding the following limits: 5 ppmv NOx (as NO2) @ 15% O2 or 200 ppmv CO @ 15% O2. [District Rule 4703, 5.1.2 and 5.2] Federally Enforceable Through Title V Permit

46. The HHV and LHV of the fuel combusted shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

47. The owner or operator shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown, recommissioning period, malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEM system that has been installed pursuant to District Rule 1080 (as amended 12/17/92), emission measurements, total daily and annual hours of operation, hourly quantity of fuel used, and gross three hour average operating load. [District Rules 1080, 7.0; 2520, 9.3.2; 4703, 6.2; and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

48. The owner or 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, 9.4.2] Federally Enforceable Through Title V Permit

49. Air Pollution Control Equipment/Operation: The Permittee shall continuously operate and maintain the following air pollution controls and operations to minimize emissions at or below the levels specified in Conditions X-E of the PSD permit. The aforementioned "continuous" periods of operation do not include periods of startup, shutdown, and recommissioning, as defined in Section X.E.3, and X.F.1 of the PSD permit, or periods of malfunction as defined in Section IV.B.1 of the PSD permit. The Permittee shall continuously operate Selective Catalytic Reduction (SCR) systems on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 to meet the NOx emission limits specified in the PSD permit. The Permittee shall maintain an oxidation catalyst system on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 for control of CO. [PSD permit (SJ 98-01), X.B] Federally Enforceable Through Title V Permit

50. Continuous Emission Monitoring: Prior to the date of startup and thereafter, the Permittee shall install, maintain, and operate the following Continuous Emissions Monitoring Systems (CEM) on each Combustion Turbine Generator (CTG) set exhaust vent stack: a. A continuous monitoring system to measure stack gas NOx concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B); and b. A continuous monitoring system to measure stack CO concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B). [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

51. Continuous Emission Monitoring: The permittee shall install, maintain, and operate a continuously recording fuel gas flow meter on each gas turbine engine. Exhaust gas flow rates shall then be determined from fuel gas flow using EPA Method 19. [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

52. Emission Limits: Emissions from each of the gas turbines (permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4) shall not exceed the following limits, except during periods of startup, shutdown and recommissioning: a. NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15 percent O2, based on a 1-hour average; b. 25.30 lb-CO/hr and 6 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads above 221 MW (gross 3-hour average) or 31.40 lb-CO/hr and 10 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads at or below 221 MW (gross 3-hour average). [PSD permit (SJ 98-01), X.E.1] Federally Enforceable Through Title V Permit

53. Emission Limits: Emission rates from each gas turbine shall not exceed the following daily and annual limits, including all periods of startup, shutdown and recommissioning, except NOx daily limits may be exceeded during recommissioning periods: NOx (as NO2): 511.4 lb/day, 73.0 tons/yr; CO: 1,873.0 lb/day, 109.0 tons/yr; SO2: 91.4 lb/day ,15.3 tons/yr. The annual limit is a 12-month rolling average. [PSD permit (SJ 98-01), X.E.2] Federally Enforceable Through Title V Permit

54. Emission Limits: The following definitions apply to the PSD permit: a. Startup of the combustion turbine is defined as the period beginning with combustion turbine light-off, until the unit reaches minimum load; b. Startup of the steam turbine is defined as the period when the combustion turbine output is reduced to below minimum load, in order to engage the steam turbine, until the unit again reaches minimum load; c. Shutdown is defined as the period beginning with initiation of combustion turbine shutdown sequence and ending either with the cessation of firing of the combustion turbine engine, or when the unit ramps back up after an aborted shutdown, until the unit reaches minimum load; d. Minimum load is defined as the minimum combustion turbine megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the ppmv emission limits in Condition X.E.1 of the PSD permit. [PSD permit (SJ 98-01), X.E.3] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

55. Emission Limits: Each startup, whether of the combustion or steam turbine, shall not exceed three hours per occurrence. Each shutdown shall not exceed one hour per occurrence. [PSD permit (SJ 98-01), X.E.4] Federally Enforceable Through Title V Permit

56. Recommissioning Periods: Recommissioning is defined as the period following an inspection, maintenance, repair and/or overhaul outage where the source conducts operational and contractual testing and tuning to ensure the safe, efficient and reliable operation of the plant. A recommissioning period for any single outage shall not exceed 60 cumulative days of combustion turbine firing. [PSD permit (SJ 98-01), X.F.1] Federally Enforceable Through Title V Permit

57. Recommissioning Periods: Prior to commencing a recommissioning period, permittee shall perform a PSD applicability determination for the action(s) triggering the recommissioning period. [PSD permit (SJ 98-01), X.F.2] Federally Enforceable Through Title V Permit

58. Recommissioning Periods: Permittee shall maintain a copy of each PSD applicability determination on site. In addition, if the action(s) triggering the recommissioning period include(s) the replacement of parts that could affect capacity or emissions, or an overhaul outage, then the permittee shall provide a copy of such determination to EPA prior to the start of the recommissioning period. [PSD permit (SJ 98-01), X.F.3] Federally Enforceable Through Title V Permit

59. Recommissioning Periods: Emission rates from each combustion turbine shall not exceed the following limits during a recommissioning period: 439.6 lbs-CO per hr; 517.3 lbs-NOx per hr; 4,790.0 lbs-NOx per day; 4,443.0 lbs-CO per recommissioning event; 8,545.0 lbs-NOx per recommissioning event. [PSD permit (SJ 98-01), X.F.4] Federally Enforceable Through Title V Permit

60. Recommissioning Periods: The permittee shall maintain the following records for each recommissioning period: a. The number of days the combustion turbine is fired; b. Hourly and daily emissions, in lbs/hr and lbs/day, of NOx and CO emitted; c. Total emissions of NOx and CO emitted during the recommissioning period; d. Documentation of the testing and tuning activities which occurred during the recommissioning period. [PSD permit (SJ 98-01), X.F.5] Federally Enforceable Through Title V Permit

61. Recommissioning Periods: Pursuant to 40 CFR 60.8, within 30 days after the end of a recommissioning period, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. Upon written request and adequate justification from the Permittee, EPA may waive a performance test after a recommissioning period. [PSD permit (SJ 98-01), X.F.6] Federally Enforceable Through Title V Permit

62. Performance Tests: Pursuant to 40 CFR 60.8, within 60 days after achieving the maximum production rate of the affected emission units, but no later than 180 days after the initial startup of equipment (as defined in 40 CFR 60.2), and at such other times as specified by the Regional Administrator, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. The tests for NOx and CO shall be conducted on an annual basis and at the maximum operating capacity of the facilities being tested. Upon written request (Attn: AIR-5) from the Permittee, EPA may approve the conducting of performance tests at a lower specified production rate. After initial performance test and upon written request and adequate justification from the Permittee, EPA may waive a specified annual test for the facility. [PSD permit (SJ 98-01), X.G.1] Federally Enforceable Through Title V Permit

63. Performance Tests: Performance tests for the emissions of CO and NOx shall be conducted and the results reported in accordance with the test methods set forth in 40 CFR 60, Part 60.8 and Appendix A. The following test methods, or alternatives approved by EPA, shall be used: a. Performance tests of the emissions of CO shall be conducted using EPA Methods 1-4 and 10; b. Performance tests of the emissions of NOx shall be conducted using EPA Methods 1-4 and 7E; c. Natural gas sulfur content shall be tested according to ASTM D3246. The EPA (Attn: AIR-5) shall be notified in writing at least 30 days prior to such test to allow time for the 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 EPA 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 EPA. [PSD permit (SJ 98-01), X.G] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

64. Performance Tests: For performance test purposes, sampling ports, platforms, and access shall be provided by the Permittee on the exhaust stack in accordance with 40 CFR 60.8(e). [PSD permit (SJ 98-01), X.G.4] Federally Enforceable Through Title V Permit

65. Recordkeeping and Reporting: A file shall be maintained of all measurements including continuous monitoring system evaluations, all continuous monitoring system or monitoring device calibration checks, adjustments and maintenance performed on these systems or devices, performance and all other information required by 40 CFR 60 or 75 recorded in a permanent form suitable for inspection. The file shall be retained for at least five (5) years following the date of such measurement, maintenance, reports, and records. [PSD permit (SJ 98-01), X.H.1] Federally Enforceable Through Title V Permit

66. Recordkeeping and Reporting: The Permittee shall maintain an operating log for each combustion turbine, which contains at a minimum, the following information: the start and finish times for all startup, shutdown and recommissioning periods. [PSD permit (SJ 98-01), X.H.3] Federally Enforceable Through Title V Permit

67. Recordkeeping and Reporting: The permittee shall submit a written report of all excess emissions to EPA (Attn: AIR-5) for every calendar quarter. The report shall include the following: a. The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions; b. Specific identification of each period of excess emissions that occurs during startups, shutdown, recommissioning, and malfunctions of the engine exhaust systems. The nature and cause of any malfunction (if known) and the corrective action taken or preventative measures adopted shall also be reported; c. The date and time identifying each period during which a CEMS was inoperative, repaired, or adjusted, except for zero and span checks, and the nature of the system repairs or adjustments; d. When no excess emissions have occurred or the CEMS have not been inoperative, repaired, or adjusted, such information shall be stated in the report; e. Excess emissions shall be defined as any 1-hour period during which the average emissions of NOx, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.a of the PSD permit; f. Excess emissions shall be defined as any 3-hour period during which the average emissions of CO, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.b of the PSD permit. [PSD permit (SJ 98-01), X.H.4] Federally Enforceable Through Title V Permit

68. Recordkeeping and Reporting: The facility is snbject to the recordkeeping and reporting requirements of the applicable New Source Performance Standards (NSPS) - 40 CFR Part 60, as described in this permit. [PSD permit (SJ 98-01), X.H.5] Federally Enforceable Through Title V Permit

69. New Source Performance Standards: The facility's combustion turbines are subject to the federal New Source Performance Standards (NSPS) - 40 CFR Part 60, Subpart GG, as well as the General Provisions of Subpart A. The owner/operator shall meet the applicable requirements of the aforementioned NSPS Subparts. [PSD permit (SJ 98-01), X.I] Federally Enforceable Through Title V Permit

70. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: District Rule 4801 and Kern County Rule 407 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

71. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.332, 60.333 (a) and (b); 40 CFR 60.334(a), (b)(2), (c), and 40 CFR 60.335(b); District Rule 4703 (as amended 9/20/07), Sections 5.1.1, 5.2, 6.1, 6.3.1, 6.3.3, 6.4, 6.4.5, and 6.4.6 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

72. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.7(b), 60.8, 60.8(d), 60.13, and 60.13(b); District Rules 1080 (as amended 12/17/92), Sections 6.3, 6.4, 6.5, 7.0, 7.1, 7.2, 7.3, 8.0, 9.0, 10.0, and 11.0; and 1081 (as amended 12/16/93) as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

73. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the applicable requirements of District Rule 4201 (as amended 12/17/92). A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

74. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.1] Federally Enforceable Through Title V Permit

75. Gas turbine engine exhaust shall be equipped with an additional continuous NOx analyzer located upstream of the SCR unit for purposes of monitoring ammonia slip (Ammonia Slip NOx Analyzer). This analyzer and shall be capable of monitoring NOx concentration at this location during startups and shutdowns as well as normal operating conditions. [District Rule 4102]

76. The Ammonia Slip NOx Analyzer shall conform to the specifications of Section 6.0, Performance Specification 2, 40 CFR 60, Appendix B. [District Rule 4102]

77. Calibration drift (CD) assessment for the Ammonia Slip NOx Analyzer shall be performed in accordance with requirements specified in section 4 of Appendix F to 40 CFR Part 60. [District Rule 4102]

78. A Cylinder Gas Audit (CGA) of the Ammonia Slip NOx Analyzer shall be performed each quarter in accordance with the procedures of specified in section 5 of Appendix F to 40 CFR Part 60. [District Rule 4102]

79. Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required by this permit, the Ammonia Slip NOx Analyzer shall be in continuous operation. [District Rule 4102]

80. The Ammonia Slip NOx Analyzer shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. [District Rule 4102]

81. Emission data from the Ammonia Slip NOx Analyzer, including the calculated ammonia slip, shall be obtained for at least 18 hours in at least 22 out of 30 successive gas turbine operating days. [District Rule 4102]

82. Notification and record keeping for the Ammonia Slip NOx Analyzer shall be in accordance with the requirements specified in 40 CFR 60.7. [District Rule 4102]

83. An excess ammonia emissions and monitoring system performance report for the Ammonia Slip NOx Analyzer, in accordance with the requirements specified in 40 CFR 60.7, shall be submitted to the APCO for each calendar quarter. [District Rule 4102]

84. Although specific sections of 40 CFR 60 are referenced for convenience in permit conditions for the Ammonia Slip NOx Analyzer, the equipment is not subject to federal enforcement or other federal monitoring, reporting or recordkeeping requirements. [District Rule 4102]

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-3412-4-13 **EXPIRATION DATE:** 01/31/2017

SECTION: NE27 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:
ABB GT-24 NATURAL GAS FIRED COMBINED CYCLE GAS TURBINE ENGINE/ELECTRICAL GENERATOR #4 WITH DRY LOW NOX COMBUSTORS, STEAM POWER AUGMENTATION, OXIDATION CATALYST, SELECTIVE CATALYTIC REDUCTION, STEAM TURBINE, AND ELECTRICAL GENERATOR (262 MW NOMINAL RATING)

PERMIT UNIT REQUIREMENTS

1. Gas turbine engine and generator lube oil vents shall be equipped with mist eliminators. Visible emissions from lube oil vents shall not exceed 5% opacity, except for three minutes in any hour. [District Rule 2201] Federally Enforceable Through Title V Permit
2. The gas turbine engine shall be equipped with continuously recording fuel gas flowmeter. [District Rule 2201] Federally Enforceable Through Title V Permit
3. Gas turbine engine exhaust shall be equipped with a continuously recording emissions monitor for NOx, CO and O2 downstream of the SCR catalyst dedicated to this unit. This continuous emission monitor shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as normal operating conditions. [District Rule 2201, 4703, and 40 CFR Part 64] Federally Enforceable Through Title V Permit
4. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Heat recovery steam generator design shall provide space for additional selective catalytic reduction catalyst and oxidation catalyst if required to meet NOx and CO emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Permittee shall monitor and record exhaust gas temperature at selective catalytic reduction and oxidation catalyst inlets. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Except during startup ignition, gas turbine engine shall be fired exclusively on pipeline quality natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry scf of natural gas. Gas turbine igniters may be fueled with propane or natural gas as part of startup sequence. Use of propane during startup process is limited to 6 grams per second, for a duration of no more than 30 seconds per startup on a design basis. Ignition occurs for the duration of time required to ignite and achieve a sustained flame on natural gas. [District Rule 2201, District Rule 4801, Kern County Rule 407, and PSD permit (SJ 98-01), X.C.1] Federally Enforceable Through Title V Permit
8. Recommissioning activities are defined as, but not limited to, all testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and LPGC contractors to insure safe and reliable steady state operation of the plant. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Recommissioning periods for this unit shall commence at first firing during major outage maintenance procedures. The recommissioning period shall terminate when the unit has completed performance testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

10. Permittee shall notify the District at least seven (7) calendar days prior to start, and no more than 7 calendar days after the end, of recommissioning period for this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Startup is defined as the period beginning with turbine light-off, or when the combustion turbine output is reduced to below minimum load (minimum megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the lb/hr and ppmv emission limits in Condition 21) to engage the steam turbine, until the unit again reaches minimum load. Shutdown is defined as the period beginning with initiation of turbine shutdown sequence and ending either with cessation of firing of the gas turbine engine, or when the unit ramps back up after an aborted shutdown and the unit reaches minimum load. Startup durations shall not exceed three hours, except during recommissioning periods for this unit, and shutdowns shall not exceed one hour, per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit

12. Permittee may inject ammonia during startup when the selective catalytic reduction system is at least 302 degrees F, however ammonia must be injected during startup when the selective catalytic reduction system catalyst temperature exceeds 500 degrees F and selective catalytic reduction system inlet concentrations exceed 2.5 ppmv NOx and as needed during normal operation to meet the NOx emissions limits. Permittee shall monitor and record catalyst temperature during periods of startup. [District Rule 2201] Federally Enforceable Through Title V Permit

13. Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods. [District Rule 1081] Federally Enforceable Through Title V Permit

14. During startup and/or recommissioning of any gas turbine engines, combined emissions from the four gas turbine engines (S-3412-1, '-2, '-3 and '-4) heat recovery steam generator exhausts shall not exceed the following: NOx (as NO2): 900 lb and CO:2,500 lb in any one hour. [District Rule 2201] Federally Enforceable Through Title V Permit

15. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the combustors of this unit shall be tuned to minimize emissions. [District Rule 2201] Federally Enforceable Through Title V Permit

16. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the oxidation catalyst shall be utilized to minimize CO emissions from this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

17. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the Selective Catalytic Reduction (SCR) system shall be utilized to control NOx whenever gas turbine operations are sufficiently stable and minimum catalyst temperature is achieved. [District Rule 2201] Federally Enforceable Through Title V Permit

18. During recommissioning periods for this unit, emission rates from gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 517.3 lb/hr and CO: 439.6 lb/hr. NOx (as NO2) emission limit is a one hour average. CO emission limit is a three-hour rolling average. [District Rule 2201] Federally Enforceable Through Title V Permit

19. Emission rates from the gas turbine engine heat recovery steam generator exhaust, except during startup and/or shutdown of this unit, shall not exceed the following: PM10: 11.0 lb/hr, SOx (as SO2): 3.89 lb/hr, NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15% O2, VOC (as propane): 2.80 lb/hr and 0.7 ppmvd @ 15% O2, and CO: 31.40 lb/hr and either 10 ppmvd @ 15% O2 at operating loads less than or equal to 221 MW (gross three hour average) or 6 ppmvd @ 15% O2 at operating loads greater than 221 MW (gross three hour average). NOx (as NO2) emission limit is a one hour average. All other emission limits are three hour rolling averages. NOx and CO emission limits shall not apply during recommissioning periods. [District Rule 2201; District Rule 4703, 5.1 and 5.2; and 40 CFR 60.332 and 60.333] Federally Enforceable Through Title V Permit

20. Except during recommissioning periods for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following on days when a startup or shutdown of the unit occurs: PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, NOx (as NO2): 511.4 lb/day, VOC: 139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

21. During recommissioning periods, for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 4,790.0 lb/day, PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, VOC:139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

22. Twelve month rolling average emissions from each gas turbine engine heat recovery steam generator exhaust shall not exceed the following PM10: 96,360 lb/year, SOx (as SO2): 30,517 lb/year, NOx (as NO2): 146,001 lb/year, VOC: 25,063 lb/year, and CO: 217,921 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

23. Ammonia emission rate shall not exceed 10 ppmvd @ 15% O2 on a twenty four hour rolling average. [District Rule 4102]

24. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O2 = ((a-(bxc/1,000,000)) x 1,0 00,000 / b) x d, where a = ammonia injection rate(lb/hr)/17(lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol), c = change in measured NOx concentration ppmv at 15% O2 across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. [District Rule 4102]

25. Short term emissions shall be measured to demonstrate compliance with short term emission limits (lb/hr and ppmv @ 15% O2) annually by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm at full load conditions as follows - NOx: ppmvd @ 15% O2 and lb/hr, CO: ppmvd @ 15% O2 and lb/hr, VOC: ppmvd @ 15% O2 and lb/hr, PM10: lb/hr, and ammonia: ppmvd @ 15% O2. Sample collection for ammonia emissions shall be based on a two-hour or longer average. [District Rule 1081] Federally Enforceable Through Title V Permit

26. Cold start NOx, and CO mass emissions shall be measured, and measurement of cold start VOC emissions shall be performed for one of the gas turbines engines (S-3412-1, '2, '3, or '4) at least every seven years by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. [District Rule 1081] Federally Enforceable Through Title V Permit

27. 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. [District Rules 1081; 2520, 9.3.2; and 2540] Federally Enforceable Through Title V Permit

28. The sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 3246. [District Rule 2520, 9.3.2 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit

29. Permittee shall maintain records of fuel sulfur content monitoring data and records documenting a constant supplier or source of fuel (a substantial change in fuel quality shall be considered a change in fuel supply). Permittee shall submit results of fuel sulfur content monitoring annually to the District with the Tittle V annual Certificate. Permittee shall notify the District of any changes in fuel supplier or source within 60 days of such change. [District Rules 1081 and 2540] Federally Enforceable Through Title V Permit

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

31. The following test methods shall be used NOx: EPA Method 7E or 20, CO: EPA method 10 or 10B, O2: EPA Method 3, 3A, or 20, VOC: EPA method 18, and PM10: EPA method 5 (front half and back half) or EPA methods 201A and 202. Alternative test methods as approved by the District and EPA may also be used to address the source testing requirements of this permit. [District Rules 1081 and 4703, 6.4; and 40 CFR 60.335] Federally Enforceable Through Title V Permit

32. Source testing for ammonia shall be performed using BAAQMD ST-1B. [District Rule 4102]

33. The permittee shall maintain hourly records of ammonia emission concentrations (ppmv @ 15% O2) [District Rule 4102]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

34. The permittee shall maintain hourly records of NOx, and CO emission concentrations (ppmv @ 15% O2), and hourly, daily, and twelve month rolling average records of NOx and CO emissions. Compliance with the hourly, daily, and twelve month rolling average VOC emission limits shall be demonstrated by annual VOC source tests. [District Rule 2201] Federally Enforceable Through Title V Permit

35. The permittee shall maintain records of SOx lb/hr, lb/day, and lb/twelve month rolling average emission. SOx emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [District Rule 2201] Federally Enforceable Through Title V Permit

36. CEM cycling times shall be those specified in 40 CFR, Part 51, Appendix P, Sections 3.4, 3.4.1 and 3.4.2, or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the EPA. [District Rule 1080, 6.4] Federally Enforceable Through Title V Permit

37. The continuous NOx and O2 monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [District Rule 1080, 6.3, 6.5, 6.6 and 7.2] Federally Enforceable Through Title V Permit

38. The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary of data shall be in the form and the manner prescribed by the APCO. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit

39. Operators of CEM systems installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; Applicable time and date of each period during which the CEM was inoperative, except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080, 8.0] Federally Enforceable Through Title V Permit

40. Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. Successive quarterly audits shall occur no closer than two months. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080, 6.2] Federally Enforceable Through Title V Permit

41. APCO or an authorized representative shall be allowed to inspect, as he or she determines to be necessary, the monitoring devices required by this rule to ensure that such devices are functioning properly. [District Rule 1080, 11.0] Federally Enforceable Through Title V Permit

42. Sulfur compound emissions shall not exceed 0.015% by volume at calculated at 15% O2 (150 ppmv @ 15% O2) on a dry basis averaged over 15 consecutive minutes. [District Rule 4801, Kern County Rule 407, and 40 CFR 60.333(a)] Federally Enforceable Through Title V Permit

43. All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device. [40 CFR 60.13(b)] Federally Enforceable Through Title V Permit

44. Continuous emission monitors shall meet applicable requirements of 40 CFR 60.13. [District Rule 4703, 5.1 & 6.4 and 40 CFR 60.13] Federally Enforceable Through Title V Permit

45. By two hours after turbine light-off the owner or operator shall not operate the gas turbine under load conditions, excluding shutdown or recommissioning periods for this unit, which results in the measured concentrations exceeding the following limits: 5 ppmv NOx (as NO2) @ 15% O2 or 200 ppmv CO @ 15% O2. [District Rule 4703, 5.1.2 and 5.2] Federally Enforceable Through Title V Permit

46. The HHV and LHV of the fuel combusted shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

47. The owner or operator shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown, recommissioning period, malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEM system that has been installed pursuant to District Rule 1080 (as amended 12/17/92), emission measurements, total daily and annual hours of operation, hourly quantity of fuel used, and gross three hour average operating load. [District Rules 1080, 7.0; 2520, 9.3.2; 4703, 6.2; and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

48. The owner or 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, 9.4.2] Federally Enforceable Through Title V Permit

49. Air Pollution Control Equipment/Operation: The Permittee shall continuously operate and maintain the following air pollution controls and operations to minimize emissions at or below the levels specified in Conditions X-E of the PSD permit. The aforementioned "continuous" periods of operation do not include periods of startup, shutdown, and recommissioning, as defined in Section X.E.3, and X.F.1 of the PSD permit, or periods of malfunction as defined in Section IV.B.1 of the PSD permit. The Permittee shall continuously operate Selective Catalytic Reduction (SCR) systems on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 to meet the NOx emission limits specified in the PSD permit. The Permittee shall maintain an oxidation catalyst system on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 for control of CO. [PSD permit (SJ 98-01), X.B] Federally Enforceable Through Title V Permit

50. Continuous Emission Monitoring: Prior to the date of startup and thereafter, the Permittee shall install, maintain, and operate the following Continuous Emissions Monitoring Systems (CEM) on each Combustion Turbine Generator (CTG) set exhaust vent stack: a. A continuous monitoring system to measure stack gas NOx concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B); and b. A continuous monitoring system to measure stack CO concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B). [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

51. Continuous Emission Monitoring: The permittee shall install, maintain, and operate a continuously recording fuel gas flow meter on each gas turbine engine. Exhaust gas flow rates shall then be determined from fuel gas flow using EPA Method 19. [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

52. Emission Limits: Emissions from each of the gas turbines (permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4) shall not exceed the following limits, except during periods of startup, shutdown and recommissioning: a. NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15 percent O2, based on a 1-hour average; b. 25.30 lb-CO/hr and 6 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads above 221 MW (gross 3-hour average) or 31.40 lb-CO/hr and 10 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads at or below 221 MW (gross 3-hour average). [PSD permit (SJ 98-01), X.E.1] Federally Enforceable Through Title V Permit

53. Emission Limits: Emission rates from each gas turbine shall not exceed the following daily and annual limits, including all periods of startup, shutdown and recommissioning, except NOx daily limits may be exceeded during recommissioning periods: NOx (as NO2): 511.4 lb/day, 73.0 tons/yr; CO: 1,873.0 lb/day, 109.0 tons/yr; SO2: 91.4 lb/day ,15.3 tons/yr. The annual limit is a 12-month rolling average. [PSD permit (SJ 98-01), X.E.2] Federally Enforceable Through Title V Permit

54. Emission Limits: The following definitions apply to the PSD permit: a. Startup of the combustion turbine is defined as the period beginning with combustion turbine light-off, until the unit reaches minimum load; b. Startup of the steam turbine is defined as the period when the combustion turbine output is reduced to below minimum load, in order to engage the steam turbine, until the unit again reaches minimum load; c. Shutdown is defined as the period beginning with initiation of combustion turbine shutdown sequence and ending either with the cessation of firing of the combustion turbine engine, or when the unit ramps back up after an aborted shutdown, until the unit reaches minimum load; d. Minimum load is defined as the minimum combustion turbine megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the ppmv emission limits in Condition X.E.1 of the PSD permit. [PSD permit (SJ 98-01), X.E.3] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

55. Emission Limits: Each startup, whether of the combustion or steam turbine, shall not exceed three hours per occurrence. Each shutdown shall not exceed one hour per occurrence. [PSD permit (SJ 98-01), X.E.4] Federally Enforceable Through Title V Permit

56. Recommissioning Periods: Recommissioning is defined as the period following an inspection, maintenance, repair and/or overhaul outage where the source conducts operational and contractual testing and tuning to ensure the safe, efficient and reliable operation of the plant. A recommissioning period for any single outage shall not exceed 60 cumulative days of combustion turbine firing. [PSD permit (SJ 98-01), X.F.1] Federally Enforceable Through Title V Permit

57. Recommissioning Periods: Prior to commencing a recommissioning period, permittee shall perform a PSD applicability determination for the action(s) triggering the recommissioning period. [PSD permit (SJ 98-01), X.F.2] Federally Enforceable Through Title V Permit

58. Recommissioning Periods: Permittee shall maintain a copy of each PSD applicability determination on site. In addition, if the action(s) triggering the recommissioning period include(s) the replacement of parts that could affect capacity or emissions, or an overhaul outage, then the permittee shall provide a copy of such determination to EPA prior to the start of the recommissioning period. [PSD permit (SJ 98-01), X.F.3] Federally Enforceable Through Title V Permit

59. Recommissioning Periods: Emission rates from each combustion turbine shall not exceed the following limits during a recommissioning period: 439.6 lbs-CO per hr; 517.3 lbs-NOx per hr; 4,790.0 lbs-NOx per day; 4,443.0 lbs-CO per recommissioning event; 8,545.0 lbs-NOx per recommissioning event. [PSD permit (SJ 98-01), X.F.4] Federally Enforceable Through Title V Permit

60. Recommissioning Periods: The permittee shall maintain the following records for each recommissioning period: a. The number of days the combustion turbine is fired; b. Hourly and daily emissions, in lbs/hr and lbs/day, of NOx and CO emitted; c. Total emissions of NOx and CO emitted during the recommissioning period; d. Documentation of the testing and tuning activities which occurred during the recommissioning period. [PSD permit (SJ 98-01), X.F.5] Federally Enforceable Through Title V Permit

61. Recommissioning Periods: Pursuant to 40 CFR 60.8, within 30 days after the end of a recommissioning period, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. Upon written request and adequate justification from the Permittee, EPA may waive a performance test after a recommissioning period. [PSD permit (SJ 98-01), X.F.6] Federally Enforceable Through Title V Permit

62. Performance Tests: Pursuant to 40 CFR 60.8, within 60 days after achieving the maximum production rate of the affected emission units, but no later than 180 days after the initial startup of equipment (as defined in 40 CFR 60.2), and at such other times as specified by the Regional Administrator, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. The tests for NOx and CO shall be conducted on an annual basis and at the maximum operating capacity of the facilities being tested. Upon written request (Attn: AIR-5) from the Permittee, EPA may approve the conducting of performance tests at a lower specified production rate. After initial performance test and upon written request and adequate justification from the Permittee, EPA may waive a specified annual test for the facility. [PSD permit (SJ 98-01), X.G.1] Federally Enforceable Through Title V Permit

63. Performance Tests: Performance tests for the emissions of CO and NOx shall be conducted and the results reported in accordance with the test methods set forth in 40 CFR 60, Part 60.8 and Appendix A. The following test methods, or alternatives approved by EPA, shall be used: a. Performance tests of the emissions of CO shall be conducted using EPA Methods 1-4 and 10; b. Performance tests of the emissions of NOx shall be conducted using EPA Methods 1-4 and 7E; c. Natural gas sulfur content shall be tested according to ASTM D3246. The EPA (Attn: AIR-5) shall be notified in writing at least 30 days prior to such test to allow time for the 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 EPA 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 EPA. [PSD permit (SJ 98-01), X.G] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

64. Performance Tests: For performance test purposes, sampling ports, platforms, and access shall be provided by the Permittee on the exhaust stack in accordance with 40 CFR 60.8(e). [PSD permit (SJ 98-01), X.G.4] Federally Enforceable Through Title V Permit

65. Recordkeeping and Reporting: A file shall be maintained of all measurements including continuous monitoring system evaluations, all continuous monitoring system or monitoring device calibration checks, adjustments and maintenance performed on these systems or devices, performance and all other information required by 40 CFR 60 or 75 recorded in a permanent form suitable for inspection. The file shall be retained for at least five (5) years following the date of such measurement, maintenance, reports, and records. [PSD permit (SJ 98-01), X.H.1] Federally Enforceable Through Title V Permit

66. Recordkeeping and Reporting: The Permittee shall maintain an operating log for each combustion turbine, which contains at a minimum, the following information: the start and finish times for all startup, shutdown and recommissioning periods. [PSD permit (SJ 98-01), X.H.3] Federally Enforceable Through Title V Permit

67. Recordkeeping and Reporting: The permittee shall submit a written report of all excess emissions to EPA (Attn: AIR-5) for every calendar quarter. The report shall include the following: a. The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions; b. Specific identification of each period of excess emissions that occurs during startups, shutdown, recommissioning, and malfunctions of the engine exhaust systems. The nature and cause of any malfunction (if known) and the corrective action taken or preventative measures adopted shall also be reported; c. The date and time identifying each period during which a CEMS was inoperative, repaired, or adjusted, except for zero and span checks, and the nature of the system repairs or adjustments; d. When no excess emissions have occurred or the CEMS have not been inoperative, repaired, or adjusted, such information shall be stated in the report; e. Excess emissions shall be defined as any 1-hour period during which the average emissions of NOx, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.a of the PSD permit; f. Excess emissions shall be defined as any 3-hour period during which the average emissions of CO, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.b of the PSD permit. [PSD permit (SJ 98-01), X.H.4] Federally Enforceable Through Title V Permit

68. Recordkeeping and Reporting: The facility is subject to the recordkeeping and reporting requirements of the applicable New Source Performance Standards (NSPS) - 40 CFR Part 60, as described in this permit. [PSD permit (SJ 98-01), X.H.5] Federally Enforceable Through Title V Permit

69. New Source Performance Standards: The facility's combustion turbines are subject to the federal New Source Performance Standards (NSPS) - 40 CFR Part 60, Subpart GG, as well as the General Provisions of Subpart A. The owner/operator shall meet the applicable requirements of the aforementioned NSPS Subparts. [PSD permit (SJ 98-01), X.I] Federally Enforceable Through Title V Permit

70. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: District Rule 4801 and Kern County Rule 407 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

71. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.332, 60.333 (a) and (b); 40 CFR 60.334(a), (b)(2), (c), and 40 CFR 60.335(b); District Rule 4703 (as amended 9/20/07), Sections 5.1.1, 5.2, 6.1, 6.3.1, 6.3.3, 6.4, 6.4.5, and 6.4.6 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

72. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.7(b), 60.8, 60.8(d), 60.13, and 60.13(b); District Rules 1080 (as amended 12/17/92), Sections 6.3, 6.4, 6.5, 7.0, 7.1, 7.2, 7.3, 8.0, 9.0, 10.0, and 11.0; and 1081 (as amended 12/16/93) as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

73. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the applicable requirements of District Rule 4201 (as amended 12/17/92). A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

74. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.1] Federally Enforceable Through Title V Permit

75. Gas turbine engine exhaust shall be equipped with an additional continuous NOx analyzer located upstream of the SCR unit for purposes of monitoring ammonia slip (Ammonia Slip NOx Analyzer). This analyzer and shall be capable of monitoring NOx concentration at this location during startups and shutdowns as well as normal operating conditions. [District Rule 4102]

76. The Ammonia Slip NOx Analyzer shall conform to the specifications of Section 6.0, Performance Specification 2, 40 CFR 60, Appendix B. [District Rule 4102]

77. Calibration drift (CD) assessment for the Ammonia Slip NOx Analyzer shall be performed in accordance with requirements specified in section 4 of Appendix F to 40 CFR Part 60. [District Rule 4102]

78. A Cylinder Gas Audit (CGA) of the Ammonia Slip NOx Analyzer shall be performed each quarter in accordance with the procedures of specified in section 5 of Appendix F to 40 CFR Part 60. [District Rule 4102]

79. Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required by this permit, the Ammonia Slip NOx Analyzer shall be in continuous operation. [District Rule 4102]

80. The Ammonia Slip NOx Analyzer shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. [District Rule 4102]

81. Emission data from the Ammonia Slip NOx Analyzer, including the calculated ammonia slip, shall be obtained for at least 18 hours in at least 22 out of 30 successive gas turbine operating days. [District Rule 4102]

82. Notification and record keeping for the Ammonia Slip NOx Analyzer shall be in accordance with the requirements specified in 40 CFR 60.7. [District Rule 4102]

83. An excess ammonia emissions and monitoring system performance report for the Ammonia Slip NOx Analyzer, in accordance with the requirements specified in 40 CFR 60.7, shall be submitted to the APCO for each calendar quarter. [District Rule 4102]

84. Although specific sections of 40 CFR 60 are referenced for convenience in permit conditions for the Ammonia Slip NOx Analyzer, the equipment is not subject to federal enforcement or other federal monitoring, reporting or recordkeeping requirements. [District Rule 4102]

ATTACHMENT II
MANUFACTURER'S DETAILS ON FOGGERS

Attachment 1

Mee Industries Inc.
204 West Pomona Ave. • Monrovia, CA 91016-4526
tel. 800-732-5364, 626-359-4550 • fax 626-359-4660

REDUCTION OF GAS TURBINE NO_X EMISSIONS BY INLET AIR FOGGING

Thomas R. Mee III
Chairman & CEO
December 30, 1999

INTRODUCTION

This paper gives the relationship between inlet air fogging and NO_x emissions for a typical single shaft gas turbine. Charts showing the effect of inlet fogging on the production of both specific NO_x (mass of NO_x per unit mass of exhaust gas flow) and total NO_x (mass of NO_x per unit time) are presented.

The quantitative data presented here are for a "typical" single shaft turbine may not be accurate enough to be used for making predictions of actual NO_x emissions from a particular turbine. However, the charts and information given do serve to show that inlet fogging results in a significant reduction in gas turbine NO_x emissions.

Turbine operators who require more accurate predictions of NOx production should consider commissioning a study by a competent consulting firm. Some firms have developed computer models, which can give accurate predictions of NOx as well as other pollutants. Turbine Technology Services, of Houston, TX, offers such services [1].

INLET FOGGING SYSTEMS

Inlet fogging consists of spraying water— atomized to the size of natural fog droplets, i.e. about 20 microns in diameter—into the inlet air stream of a gas turbine. When the fog droplets evaporate they cool the inlet air and make it denser. A gas turbine compressor moves a nearly constant volume of air at a fixed shaft speed[1], so denser air results in an increase in the mass flow of air through the turbine and thereby increases the power output of the turbine. The effect of inlet air fogging is further enhanced by the fact that the work required to compress air is less at cooler inlet temperatures, which means that more power is available at the turbine output shaft. The increased mass flow and reduction in compressor work gives an improvement in turbine output and fuel efficiency, and as we shall see, also reduces the production of both specific and total NO_x emissions. When the inlet air temperature is reduce by one degree Fahrenheit, a typical gas turbine will produce about 0.5% more power and consume about 0.2% less fuel, per kW of power produced.

A further increase in turbine output can be realized by injecting more fog into the inlet air stream than will evaporate with the given ambient climate conditions. The excess, unevaporated fog droplets are pulled into the compressor where they evaporate when the air is heated by compression. This process is often referred to as fog intercooling or fog-overspray and typically gives an additional power boost of 5-10% for every one-weight percent of the air mass flow of water injected. A detailed discussion of inlet air fogging is given by Meher-Homji & Mee, 1999 [3].

NO_X FORMATION IN FOSSIL FUEL COMBUSTION

Nitric oxide (NO) is a toxic gas which makes up about 90 to 95 percent of the nitrogen oxide emissions from fossil fuel combustion. The average lifetime of NO in atmospheric air is short. Within minutes, or even seconds, it is rapidly oxidized to form nitrogen dioxide (NO_2). There are three mechanisms that produce NO_x during the combustion of fossil fuels.

Prompt NO

Prompt NO is caused by the intermediate formation of hydrogen cyanide (HCN) followed by the oxidation of HCN to NO. Prompt NO is only significant in very fuel-rich flames and is produced by high-speed reactions in the flame front. Since natural gas and distillate oils have no chemically bound nitrogen, prompt NO formation is not a significant source of gas turbine emissions.

Fuel NO

Fuel NO is formed by the reaction of fuel-bound nitrogen compounds with oxygen in the combustion air. Again, since natural gas and distillate oils have no chemically bound nitrogen, Fuel NO is also not a significant source of gas turbine NO_x emissions.

[1] A single shaft, industrial gas turbine actually moves about 2% less air volume at 100°F than it does at the ISO rating point (59°F and 60% relative humidity) [2].

Thermal NO

The thermal dissociation and subsequent reaction of nitrogen (N2) and oxygen (O2) molecules in the combustion air are responsible for the formation of thermal NO. This oxidation process occurs in the post flame gases and is the only significant source of gas turbine NO_x emissions. As mentioned above, the NO rapidly oxidizes and forms NO_2.

Assuming constant inlet air temperature and humidity, the rate of formation of thermal NO_x is highly dependent on the air-to-fuel ratio in the combustion zone, the flame temperature and the residence time at the flame temperature. The maximum NO_x production occurs at a slightly lean fuel mixture ratio, due to the excess availability of oxygen for reaction within the hot flame zone. Thermal NO_x production starts at temperatures above about 2370°F (1300°C) and increases markedly with rising temperature. An excellent discussion of NO_x formation is given in "Nitrogen Oxides Control Technology Fact Book," [4].

NO_x emissions are the primary pollutant generated by gas turbines—CO, HC and particulate emissions are so low as to be considered negligible [4,5].

The Gas Turbine Combustion Process

Single shaft gas turbines consist of an axial flow compressor, which feeds compressed air to an array of can-type burners. The burner cans are arranged in an annular fashion around the discharge of the compressor. About 20-30% of the airflow from the compressor is fed into the primary zone of the burner where combustion takes place. The balance of the air is fed into the secondary zone where it mixes with and dilutes the combustion gases.

Mixing and dilution of the hot combustion gases with the bypassed air is an important feature of the turbine combustor. The bypassed gasses must be heated and expanded so they can do work in the expansion turbine. Furthermore, the dilution of the very hot combustion gases prevents localized overheating of the hot-gas path components, thereby greatly extending their life span. The average temperature at the combustor exit is normally in excess of 1600°F (871°C) for an older turbine, without internal blade cooling, and as high as 2400°F (1316°C) for newer turbines with internal blade cooling.

In practice, the temperature distribution at the discharge of the combustors is non-uniform and hot spots can exist that are several hundred degrees above the average turbine-inlet temperature [6]. Since thermal NO_x production is a strong function of temperature, and since the NO_x formation process occurs in the post flame gases, these hot spots are likely responsible for a portion of the thermal NO_x produced in a gas turbine engine.

Effect of Water Vapor on NO_x Formation

As mentioned above, thermal NO_x formation is highly dependent on combustion temperature so dilution of the fuel-air mixture with an inert and noncombustible substance will reduce the production of NO_x. Injection of water into the primary zone of the combustors has been shown to be particularly effective [7]. Both water and steam are commonly used to reduce gas turbine NO_x production by injection directly into the primary zone of the combustor. The specific heat of water is higher than that of air so the water vapor has a quenching effect in the combustion zone and lowers the equilibrium temperature.

Chart 1.0 shows data taken for a chart given by Lefebvre [8]. The chart gives the reduction in NO_x production for water injected into the compressor inlet[2].

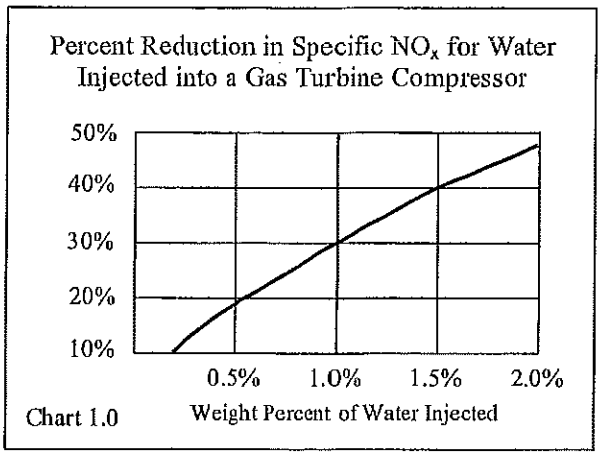

Chart 1.0

Water injected into the compressor is only about half as effective at reducing NO_x levels as compared to water injected into the primary zone of the combustor. This is due to the fact that most of the water injected into the compressor never reaches the primary zone of the combustor. Still, as can be seen from the chart, there is a considerable reduction in NO_x emissions when water is injected into the compressor.

The water injected into the compressor does not have to be liquid; humidity (water vapor) also reduces NO_x emissions. Naturally occurring variations in ambient humidity—the difference between a dry day and a wet day, for instance—can cause as much as a 40-ppm difference in specific NO_x emissions, with the lowest levels of NO_x occur during periods when the ambient humidity is highest [8].

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[2] It should be noted that Lefebvre's chart, given on page 485 of his book [8], shows percent reduction in NO_x plotted against the ratio of water injected to fuel flow. Chart 2.0 given above assumes that fuel flow is about 2% of total air mass flow.

NO_x PRODUCTION & EVAPORATIVE COOLING

Chart 2.0 (taken from Hung and Campbell [5]) shows specific NO_x—i.e. NO_x per pound of air mass flow—as a percent of the turbine manufacturers rated value at ISO conditions of 59°F and 60% relative humidity. The chart gives a wide range of ambient conditions and allows us to see the effect of cooling and humidifying on NO_x emissions.

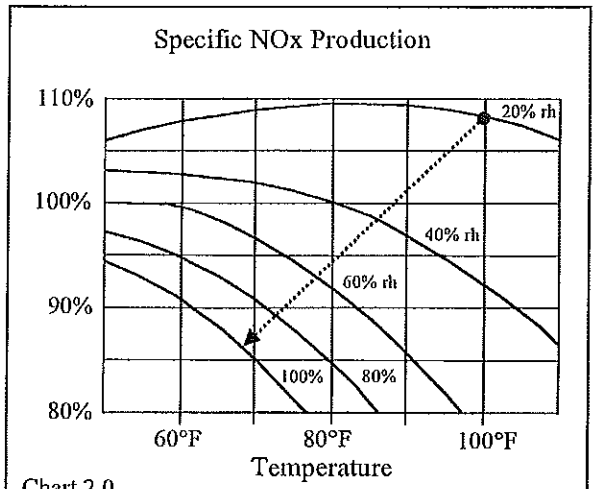

Chart 2.0

For instance, the dashed line shows an evaporative cooling process starting at 100°F and 20% relative humidity and cooling to 69°F and 100% rh. Note that specific NO_x went from about 108% of the ISO rated value to about 86% of the rated value. This is an overall decrease in specific NO_x production of about 22%.

The water injection rates shown in Chart 1.0 can be directly related to degrees of evaporative cooling, for purposes of comparing the data given in the two charts. For instance, cooling from 100°F to 69°F, as discussed in the previous example requires about 0.007 lbs of moisture per lb of dry air, or 0.7% water vapor in the air/water vapor mix. We see that both charts predict about 22% reduction in specific NO_x production for 0.7% of water injected into the compressor inlet.

PSYCHROMETRIC CHART WITH LINES OF TOTAL NO_x

Chart 3.0, shown on the next page, is a psychrometric chart with the data from Hung and Campbell [5] plotted on it. The data have been corrected for variations of mass flow caused by changing specific volume across the range of conditions shown.[3] The dashed curves represent *total* NO_x production (mass of NO_x per unit time) as a percentage of design-point total NO_x. This chart should prove helpful when dealing with emissions authorities who are understandably more interested in total NO_x emissions then in specific NO_x emissions.

A line showing evaporative cooling from 100°F and 20% rh to 69°F has been plotted on the chart. The result is about 15% reduction in total NO_x. The reduction in total NO_x is less than the reduction in specific NO_x because the air-mass flow went up when the air was cooled.

The chart also shows how total NO_x production changes with changing ambient conditions. We can see, for instance, that increasing ambient temperature at a constant specific humidity results in a slight increase in total NO_x.

RESULTS OF FIELD TESTS ON A GE-7EA

Emissions tests were performed on a GE-7EA turbine, which has a fog system installed do970wnstream of an existing media-type evaporative cooler. The fog system is capable of injecting water at the rate of 0.6% of the inlet air mass flow. When the airflow reaches the fog nozzles it is already nearly saturated, due to the water vapor added by the evaporative cooler, so only a small portion of the fog spray evaporates before being pulled into the compressor. As mentioned in the introduction, this technique is called fog intercooling.

The GE-7EA turbine normally produces about 140 ppm of NO_x. However, this turbine is fitted with a steam injection system, which injects steam directly into the primary zone of the combustors, and with a media type evaporative cooling system. Both these systems reduce NO_x emissions.

The tests performed with the inlet fogging system in operation showed a further reduction in specific NOx of about 18%. This is slightly less than predicted in Chart 1.0 but reasonably close given the uncertainties of field testing and the fact that the turbine is already steam injected and evaporatively cooled.

CONCLUSION

By increasing the water vapor content of the combustion air, inlet fogging causes a significant decrease in both specific and total NO_x emissions, regardless of whether the fog system is used for as an evaporative cooling system or for fog intercooling.

[3] The corrections assume that the compressor is a constant volume machine. If we were to take into account the fact that the volumetric flow of the compressor actually falls off as temperature increases, the constant total NO_x curves would be slightly flatter—i.e. lower on the chart as temperature increases.

References

1. Turbine Technology Service, Houston TX, contact Mr. Pat Bagley, tel. 281-873-0800.
2. Kitchen and Ebeling, 1995. "Qualifying Combustion Turbines for Inlet Air Cooling Capacity Enhancement," figure 2. ASME GT Conference, paper no. 95-GT-266
3. C. B. Meher-Homji & T. R. Mee "Gas Turbine Power Augmentation by Fogging of Inlet Air," 28th Turbomachinery Symposium, 1999,
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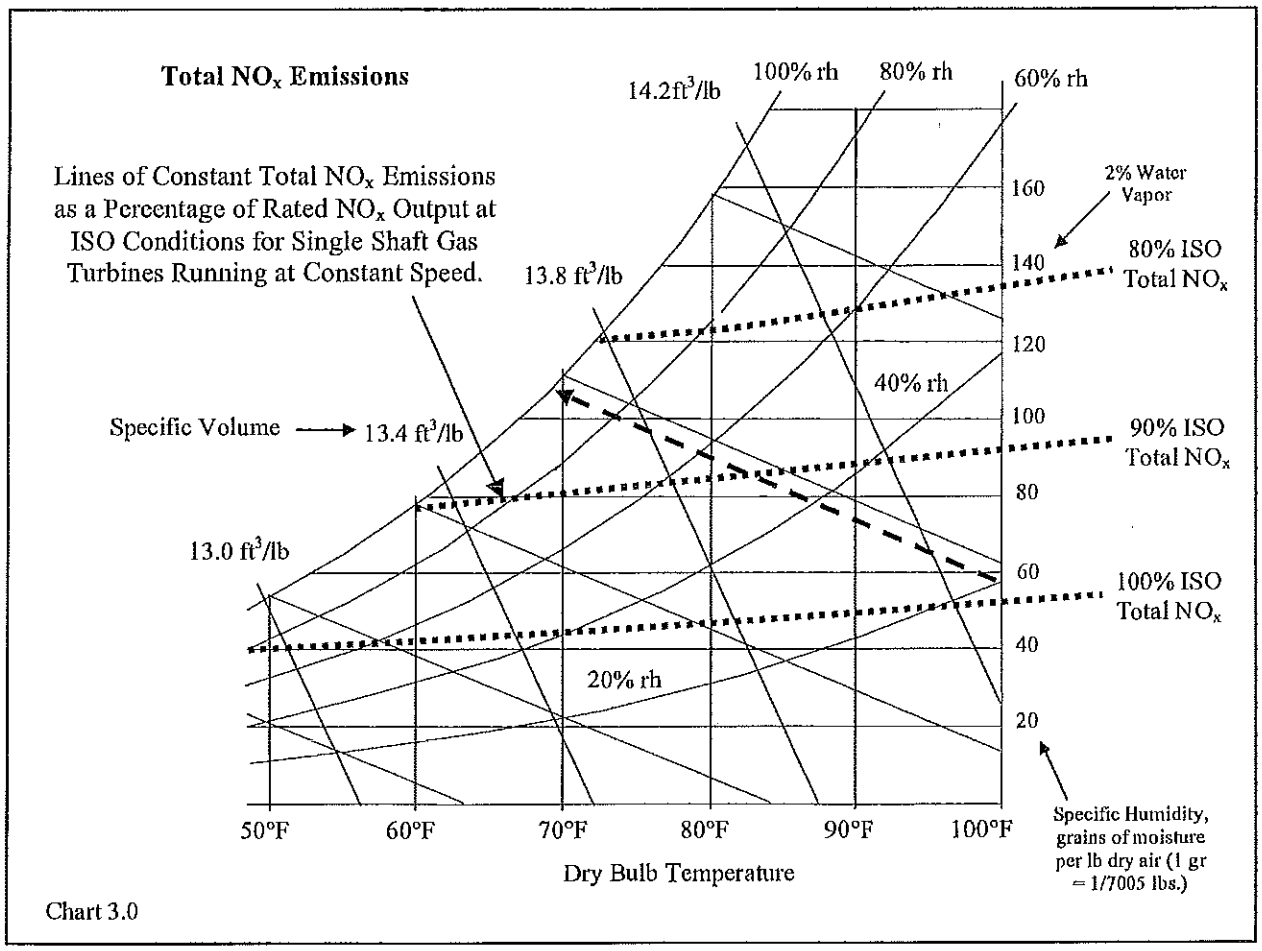

Chart 3.0

Doc. MeeTM3991230

Attachment 2

Mee Industries Inc.

T: 626.359.4550 F: 626.359.4660
16021 Adelante Street, Irwindale, CA 91702
www.meefog.com

November 13, 2012

La Paloma Generating Co. LLC
1760 Skyline Road
McKittrick, CA 93251

Attn: Pablo Cortes Oseguera

Re: Effects of Meefog Overspray application on evap-cooler equipped Alstom GT24

We have calculated the benefits of applying the MeeFog system at several design conditions. The MW increase and fuel flow were modeled using Themoflow's GT Pro™ software. The effects due to evaporation of fog water prior to entering the turbine compressor were modeled with the parameters for the Alstom GT 24 as given in the GT Pro™ library. The GT Pro™ software does not calculate the effect of the evaporation of the fog water within the compressor for the Alstom GT 24 but it does for many other turbine models. For the portion of the water evaporated within the compressor, the GE 7FA was chosen as the most similar equivalent and the result was adjusted for size.

At the design condition of 106°F ambient dry bulb the existing evaporative cooler is expected to be in service. Operating the Meefog system to full capacity at this condition is expected to:

1) Increase MW output 8.06 MW

2) Increase fuel flow by 4%

3) Increase mass flow by 8.96 lb/sec

4) Decrease NOx PPM into SCR by 7%

5) No measurable change in CO emissions PPM

6) Increase in VOC and PM-10 mass emissions by 4%

We estimated the potential hours that the MeeFog System could run based on expected weather. The source of the weather data is Typical Meteorological Year Data Set 2 (TMY2) for Bakersfield, CA from the National Solar Radiation Data Base. TMY2 is composed of hourly values for a collection of twelve representative months. Each representative month is judged the most typical from the thirty-year period of 1961-1990. For example, for Bakersfield CA, January 1982 is used for the January data.

The MeeFog is released for operation at ambient temperature above 57.25°F. The referenced historical data indicates there are 5580 potential hours per year of MeeFog operation.

Sincerely,

Ross Petersen
Regional Sales Director
Mee Industries, Inc.
626-359-4550

ross.petersen@meefog.com

WEBSITE: www.meefog.com

ATTACHMENT III
EMISSIONS PROFILES

Application Emissions

Permit #: S-3412-1-18	**Last Updated**
Facility: LA PALOMA GENERATING CO LLC	12/23/2012 EDGEHILR

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	146000.0	30520.0	96360.0	217920.0	25060.0
Daily Emis. Limit (lb/Day)	511.4	91.4	264.0	1873.0	139.8
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Application Emissions

Permit #: S-3412-2-19	**Last Updated**
Facility: LA PALOMA GENERATING CO LLC	12/23/2012 EDGEHILR

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	146000.0	30520.0	96360.0	217920.0	25060.0
Daily Emis. Limit (lb/Day)	511.4	91.4	264.0	1873.0	139.8
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Application Emissions

Permit #: S-3412-3-19	**Last Updated**
Facility: LA PALOMA GENERATING CO LLC	12/23/2012 EDGEHILR

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	146000.0	30520.0	96360.0	217920.0	25060.0
Daily Emis. Limit (lb/Day)	511.4	91.4	264.0	1873.0	139.8
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Application Emissions

Permit #: S-3412-4-14	**Last Updated**
Facility: LA PALOMA GENERATING CO LLC	12/23/2012 EDGEHILR

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	146000.0	30520.0	96360.0	217920.0	25060.0
Daily Emis. Limit (lb/Day)	511.4	91.4	264.0	1873.0	139.8
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

ATTACHMENT IV
PSD MAJOR MODIFICATION APPLICABILITY

Table 2. DERIVATION OF UNUSED CAPACITY EMISSIONS FROM PRE-PROJECT BASELINE ACTUAL EMISSIONS (BAE) AND BASELINE CAPACITY FACTORS

	NOx (2008-9)				
	Unit 1	Unit 2	Unit 3	Unit 4	Facility
Baseline Actual Emissions (lb)	56,609	67,820	65,920	62,855	263,198
Baseline Actual Capacity Factor	73%	72%	71%	65%	70%
Emissions @ Full Capacity (lb)	86,329	89,055	88,505	91,425	355,029
Unused Capacity Emissions (lb)	19,726	21,235	22,585	28,571	91,832

	SOx (2008-9)				
	Unit 1	Unit 2	Unit 3	Unit 4	Facility
Baseline Actual Emissions (lb)	7,237	7,101	7,092	6,588	28,017
Baseline Actual Capacity Factor	73%	72%	71%	65%	70%
Emissions @ Full Capacity (lb)	9,380	9,324	9,512	9,583	37,792
Unused Capacity Emissions (lb)	2,143	2,223	2,430	2,995	9,775

	CO (2008-9)				
	Unit 1	Unit 2	Unit 3	Unit 4	Facility
Baseline Actual Emissions (lb)	11,406	47,063	20,931	31,080	110,480
Baseline Actual Capacity Factor	73%	72%	71%	65%	70%
Emissions @ Full Capacity (lb)	14,784	61,798	28,102	45,208	149,027
Unused Capacity Emissions (lb)	3,378	14,736	7,171	14,128	38,547

	CO2 (2008-9) (Tons)				
	Unit 1	Unit 2	Unit 3	Unit 4	Facility
Baseline Actual Emissions (lb)	717,410	703,892	704,975	652,728	2,779,004
Baseline Actual Capacity Factor	73%	72%	71%	65%	70%
Emissions @ Full Capacity (lb)	929,883	924,291	946,510	949,430	3,749,521
Unused Capacity Emissions (lb)	212,474	220,399	241,536	296,702	969,612

	PM10 (2007-8)				
	Unit 1	Unit 2	Unit 3	Unit 4	Facility
Baseline Actual Emissions (lb)	22,086	23,666	23,696	27,169	96,620
Baseline Actual Capacity Factor	67%	73%	71%	67%	69%
Emissions @ Full Capacity (lb)	31,190	30,795	31,857	38,655	132,202
Unused Capacity Emissions (lb)	9,102	7,129	8,160	11,486	35,582

	VOC (2008-9)				
	Unit 1	Unit 2	Unit 3	Unit 4	Facility
Baseline Actual Emissions (lb)	894	1,386	2,092	3,122	7,494
Baseline Actual Capacity Factor	73%	72%	71%	65%	70%
Emissions @ Full Capacity (lb)	1,159	1,820	2,809	4,540	10,108
Unused Capacity Emissions (lb)	265	434	717	1,419	2,615

Notes and Assumptions:

1. Actual operations during the 5-year baseline analysis period (2007-2011) were limited by market conditions and in some cases major maintenance outages. Individual units have actually operated as high as 79% annual capacity factor.
2. LPGC estimates that with optimum market demand, the plant is capable of operating at a capacity factor of: 95% (Based best case year with 1-2% outage for minor inspections plus 3% for forced outages).
3. Facility has no physical or legal limitations on the utilization of the four combustion turbine generator units. Air permits do not limit annual operating hours or fuel consumption. In order to maintain vendor guarantees, each unit must be inspected periodically. The amount of outage time varies each year. Minimum annual inspection outages (3 days)are incorporated in the above assumed annual capacity factor.
4. Emissions at Capacity are based on Baseline Actual Emissions factored up from actual baseline capacity to the capacity factor that the facility is capable of.
5. Excluded emissions = Emissions at Capacity - Actual Emissions

ANNUAL GENERATION AND CALCULATED CAPACITY FACTORS DURING 5-YEAR BASELINE ANALYSIS PERIOD

	Gross MW-hr				Annual Capacity Factors				
Year	Unit 1	Unit 2	Unit 3	Unit 4	Unit 1	Unit 2	Unit 3	Unit 4	Facility
2007	1,274,773	1,771,257	1,656,782	1,659,538	56%	77%	72%	72%	69%
07-08 Avg.					67%	75%	71%	67%	69%
2008	1,813,427	1,579,066	1,586,924	1,411,472	79%	69%	69%	61%	70%
08-09 Avg.					73%	72%	71%	65%	70%
2009	1,550,896	1,740,937	1,661,010	1,586,503	68%	76%	72%	69%	71%
2010	1,273,327	1,398,323	1,369,994	1,408,802	55%	61%	60%	61%	59%
2011	452,082	397,627	206,679	295,728	20%	17%	9%	13%	15%

Assumptions:

1. Nominal generating capacity (from Permit to Operate): 262 MW

Table 2. PREVIOUS 5 YEARS ACTUAL ANNUAL EMISSIONS AND IDENTIFICATION OF REPRESENTATIVE TWO YEARS FOR EACH POLLUTANT -- LA PALOMA POWER PLANT COMBUSTION TURBINE UNITS 1-4 (2007-2011)

Year	U1 Op. Time (hrs)	U2 Op. Time (hrs)	U3 Op. Time (hrs)	U4 Op. Time (hrs)	Facility Op. Time (hrs)	U1NOx lbs Total	U2NOx lbs Total	U3NOx lbs Total	U4NOx lbs Total	Facility NOx lbs Total	U1SO2 lbs Total	U2SO2 lbs Total	U3SO2 lbs Total	U4SO2 lbs Total	Facility SO2 lbs Total
2007	5,952	8,104	7,949	7,701	29,706	52196	78777	90553	61855	283381	5934	8147	6324	6522	26927
07-08 Avg.	6,985	7540.5	7713	7152	29,390										
2008	8,017	6977	7477	6602	29,073	78442	70057	65478	51803	270078	7442	7096	7202	5456	28701
08-09 Avg.	7,549	7359.5	7545	6982	29,439	66003	67920	65920	62856	263190	7237	7101	7082	6688	28017
2009	7,080	7742	7613	7382	29,797	60554	65583	65364	63906	255417	6525	7105	6962	6720	27313
2010	6,034	6326	6577	6684	25,621	48682	54336	53245	52269	207932	5791	5825	5864	5921	23401
2011	2,281	1897	1086	1454	6,718	21625	17284	9684	14065	62658	1897	1936	894	1253	5940

Year	U1CO lbs Total	U2CO lbs Total	U3CO lbs Total	U4CO lbs Total	Facility CO lbs Total	U1CO2 tons Total	U2CO2 tons Total	U3CO2 tons Total	U4CO2 tons Total	Facility CO2 tons Total
2007	28488	38414	30918	41250	139080	585,510	654,384	680,833	738,637	2,612,444
07-08 Avg.										
2008	11440	53191	25177	39858	134666	787,807	763,395	718,364	639,865	2,649,231
08-09 Avg.	11406	47063	28331	31980	118780	777,410	733,892	704,975	652,728	2,772,004
2009	11072	35834	18685	22302	86193	847,212	704,269	691,565	665,591	2,708,757
2010	6810	30609	14358	18705	70512	524,030	567,930	581,014	588,497	2,239,531
2011	22111	11872	6809	6726	47518	188,382	158,406	88,628	125,874	561,290

Year	U1PM10 lbs Total	U2PM10 lbs Total	U3PM10 lbs Total	U4PM10 lbs Total	Facility PM10 Total	U1PVOC lbs Total	U2VOC lbs Total	U3VOC lbs Total	U4VOC lbs Total	Facility VOC Total
2007	27,260	38,532	36,227	41,200	143,119	3,690	162	5,992	154	9,968
07-08 Avg.	22,088	23,668	23,696	27,163	96,620					
2008	16,916	9,000	11,066	13,138	50,120	180	140	150	132	581
08-09 Avg.						894	1,586	2,092	3,121	7,494
2009	18,072	4,026	14,545	2,950	37,593	1,828	3,632	4,025	6,110	14,406
2010	27,456	20,623	17,168	18,247	83,491	121	127	122	134	512
2011	7,755	6,393	2,530	3,926	20,604	46	36	22	29	134

Baseline Period Selection Rationale for each pollutant:	2008-2009 is he most representative 2-year period for the 4 units overall.	2008-2009 is he most representative 2-year period for the 4 units overall.	2008-2009 is he most representative 2-year period for the 4 units overall. Ox. catalysts were installed in all units by 2008.	2008-2009 is he most representative 2-year period for the 4 unit overall. Ox. catalysts were installed in all units by 2008.	2007-2008 is he most representative 2-year period for the 4 units overall. PM10 emissions may vary with fuel sulfur content. Delta Environmental confirmed that high PM10 values in 2007 and similarly high values in 2010 were all in the aqueous impinger catch, which may imply soluble sulfates in the exhaust. These high values can occur again in any future year because of normal variations in pipeline natural gas sulfur content while remaining within the permit limit. Air rules require that consecutive years be used for baseline actual emission estimates. Note however, this approach may understate what future emissions may be during some years.	2008-2009 is the most representative 2-year period for the 4 units overall. All VOC results are at very low ppm concentrations. What appears to be erratic results from one year to the next is really the result of VOC being below detection limits some years (for which 1/2 detection lower detection limit is used for this analysis) and slightly above detection limits other years. Note however, this approach may understate what future emissions may be during some years.

Notes:

1. Annual operating times, heat inputs and CO2 emissions are from LPGC's annual Environmental Data Reports to USEPA.
2. Annual NOx, SO2 and CO emissions are based on LPGC's annual emission reports to the California Energy Commission.
3. Annual PM10 and VOC emissions are based on annual source test results (lb/hr) multiplied by annual operating times. These estimates are conservative because source tests are conducted at full load.
4. Other PSD pollutants (i.e., H2SO4, Pb, etc.) are not emitted in sig quantities according to AP-42.

NOx
BAE

Table 3. SUMMARY OF PRE-PROJECT BASELINE ACTUAL EMISSIONS, POST-PROJECT PROJECTED ACTUAL EMISSIONS, AND EMISSIONS INCREASES

Parameter/ Pollutant	Units	Pre-Project Baseline Actual Hours and Emissions (BAE)						Representative Post-Project Annual Operations and Emissions: Fogger Operation (% of baseline hours)				Projected Increase during Fogger Op.*					Projected Actual Emissions (PAE)**					Emissions Increase (PAE- BAE- Unused Capacity Emissions)						SER	
		Years	Unit 1	Unit 2	Unit 3	Unit 4	Facility Total	Unit 1	Unit 2	Unit 3	Unit 4	Emissions Increase When Foggers are On	Unit 1	Unit 2	Unit 3	Unit 4	Facility Total	Unit 1	Unit 2	Unit 3	Unit 4	Facility Total	Unit 1	Unit 2	Unit 3	Unit 4	Facility Total	Facility Total (tons/yr)	PSD (tons/yr)	Federal Major Mod. NSR (lb/yr)
Operating	hours	2007-2008	6,985	7,541	7,713	7,152	29,390	79.9%	74.0%	72.3%	78.0%																			
Time	Hours	2008-2009	7,549	7,360	7,545	6,982	29,435	73.9%	75.8%	74.0%	79.9%																			
NOx	lb	2008-2009	66,603	67,820	65,920	62,855	263,198					1.0%	492	514	488	502	1,986	70,828	73,975	70,135	72,268	287,204	-15,500	-15,081	-18,371	-19,160	-67,826	-34	40	0
SOx	lb	2008-2009	7,237	7,101	7,092	6,588	28,017					4.0%	214	215	210	211	850	7,856	7,906	7,703	7,732	31,198	-1,524	-1,417	-1,819	-1,850	-6,595	-3	40	80,000
CO	lb	2008-2009	12,405	47,062	20,931	31,080	110,480					1.0%	84	357	199	248	844	22,580	51,334	22,269	35,734	121,466	-2,654	-10,465	-5,833	-9,474	-27,561	-14	100	NA
CO2	Tons	2008-2009	717,410	703,892	704,875	652,728	2,778,904					4.0%	21,213	21,348	20,855	20,866	84,282	778,834	799,783	765,689	766,109	3,094,416	-151,048	-140,508	-180,821	-183,321	-654,205	-327	75,000	N/A
PM10	lb	2007-2008	22,088	23,656	23,696	27,189	96,629					4.0%	706	701	686	848	2,940	25,916	25,726	25,177	31,133	107,945	-5,274	-5,076	-6,680	-7,522	-24,257	-12	N/A	30,000
VOC	lb	2008-2009	894	1,386	2,092	3,121	7,494					4.0%	26	42	62	100	230	971	1,543	2,272	3,663	8,450	-188	-277	-537	-677	-1,658	-0.8	N/A	0

*Post-project assumptions regarding fogger operation and effects on fuel use, stack flow and resultant emissions:
1. Foggers will not increase annual operating hours for any unit.
2. Fogger will operate at full load, and will operate up to this many hours per year: 5580
3. Full load stack mass and volume flow will increase 1% during fogger operations.
4. Foggers will increase fuel consumption approximately 4% when they operate.
5. The SCRs will maintain constant NOx ppm, and the fogger vendor estimates that CO ppm will not change during fogger operation. The combined effect of stack concentration and mass flow will be 1% during fogger operation.
6. SOx, CO2, PM10 and VOC emissions are assumed to increase linearly with fuel consumption, or 4%.

** Basis for Post-Project Projected Actual Emissions
1. These projections are based on Baseline Actual Emissions, factored up for anticipated business conditions over the next 5 years plus the projected emission increase from foggers.
2. LPSC anticipates based on existing sales contracts and projected market conditions that the four combustion turbine units will operate approximately with a 91% capacity factor (or 7,972 hours/year) on average.
In any given year, one unit may operate more than another, but this should have no significant affect on facility-wide emissions because the units are equivalent in design and function.
3. All assumptions are subject to change as a result of actual market conditions, equipment performance and power sales opportunities.

Acronyms:
SER = Significant Emission Rate
NA NSR = Nonattainment New Source Review
N/C = No change
N/A = SER is not applicable due to attainment status of this pollutant.

BAE 2008-2009 most representative

fogger capacity factor

X's fogger emissions

Emissions Increases

ATTACHMENT V
CERTIFICATE OF CONFORMITY

San Joaquin Valley
Unified Air Pollution Control District

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

[X] SIGNIFICANT PERMIT MODIFICATION
[ ] MINOR PERMIT MODIFICATION
[ ] ADMINISTRATIVE AMENDMENT

COMPANY NAME: **La Paloma Generating Company, LLC**	FACILITY ID: S – 3412
1. Type of Organization: [X] Corporation [ ] Sole Ownership [ ] Government [ ] Partnership [ ] Utility	
2. Owner's Name: **La Paloma Generating Company, LLC**	
3. Agent to the Owner: **N/A**	

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

☑ 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).

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

☑ Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.

☑ Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the forgoing is correct and true:

Signature of Responsible Official

Date 12/6/17

Jim Maiz

Name of Responsible Official (please print)

Authorized Representative, La Paloma Generating Company, LLC

Title of Responsible Official (please print)

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM
INSTRUCTIONS (TVFORM-009)

Complete a Title V Modification - Compliance Certification Form (TVFORM-009) for each Responsible Official (RO) and identify the areas of responsibility for each (indicate by permit number the emissions units under the responsibility of each RO).

I. Type of Permit Action

Mark the appropriate box to indicate whether the application is for: a significant or minor Title V permit modification, or an application for an administrative amendment to a Title V permit.

Line 1. Indicate the organizational structure of the facility.
Line 2. Print the name of the facility owner.
Line 3. Print the name of the agent to the owner, if any, who may conduct business on behalf of the owner.

II. Compliance Certification

A compliance certification is a certification by the Responsible Official that each of the statements initialed in this section are true, accurate, and complete. The Responsible Official must initial the statements that are true, sign and date, and print his/her name and title.

For a corporation, the responsible official shall be a president, secretary, treasurer, or vice president in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation. The responsible official may be a duly authorized representative rather than any of the above if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit; and

1. the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding $25 million in 1980 dollars; or

2. the District has approved a petition from the original responsible person to delegate authority.

For a public agency the responsible official shall be either the principal executive officer or the ranking elected official. The principal executive officer, in the case of a federal agency, may be the executive officer having responsibility for a geographical unit.

For a partnership or sole proprietorship, the responsible official is a general partner or the proprietor, respectively.

ATTACHMENT VI
DRAFT ATCS

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-3412-1-18 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: LA PALOMA GENERATING CO LLC
MAILING ADDRESS: PO BOX 175
MCKITTRICK, CA 93251

LOCATION: 1760 W SKYLINE ROAD
MCKITTRICK, CA 93251

SECTION: NE27 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:
MODIFICATION OF ABB GT-24 NATURAL GAS FIRED COMBINED CYCLE GAS TURBINE ENGINE/ELECTRICAL GENERATOR #1 WITH DRY LOW NOX COMBUSTORS, STEAM POWER AUGMENTATION, SELECTIVE CATALYTIC REDUCTION, STEAM TURBINE, AND ELECTRICAL GENERATOR (262 MW NOMINAL RATING):INSTALL AIR INLET FOGGER

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Gas turbine engine and generator lube oil vents shall be equipped with mist eliminators. Visible emissions from lube oil vents shall not exceed 5% opacity, except for three minutes in any hour. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The gas turbine engine shall be equipped with continuously recording fuel gas flowmeter. [District Rule 2201] Federally Enforceable Through Title V Permit

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

Seyed Sadredin, Executive Director/APCO

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DAVID WARNER, Director of Permit Services
S-3412-1-18 : Dec 28 2012 10:15AM -- EDGEHILR : Joint Inspection NOT Required

5. Gas turbine engine exhaust shall be equipped with a continuously recording emissions monitor for NOx, CO and O2 downstream of the SCR catalyst dedicated to this unit. This continuous emission monitor shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as normal operating conditions. [District Rule 2201, 4703, and 40 CFR Part 64] Federally Enforceable Through Title V Permit

6. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201] Federally Enforceable Through Title V Permit

7. Heat recovery steam generator design shall provide space for additional selective catalytic reduction catalyst and oxidation catalyst if required to meet NOx and CO emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit

8. Permittee shall monitor and record exhaust gas temperature at selective catalytic reduction and oxidation catalyst inlets. [District Rule 2201] Federally Enforceable Through Title V Permit

9. Except during startup ignition, gas turbine engine shall be fired exclusively on pipeline quality natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry scf of natural gas. Gas turbine igniters may be fueled with propane or natural gas as part of startup sequence. Use of propane during startup process is limited to 6 grams per second, for a duration of no more than 30 seconds per startup on a design basis. Ignition occurs for the duration of time required to ignite and achieve a sustained flame on natural gas. [District Rule 2201, District Rule 4801, Kern County Rule 407, and PSD permit (SJ 98-01), X.C.1] Federally Enforceable Through Title V Permit

10. Recommissioning activities are defined as, but not limited to, all testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and LPGC contractors to insure safe and reliable steady state operation of the plant. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Recommissioning periods for this unit shall commence at first firing during major outage maintenance procedures. The recommissioning period shall terminate when the unit has completed performance testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers. [District Rule 2201] Federally Enforceable Through Title V Permit

12. Permittee shall notify the District at least seven (7) calendar days prior to start, and no more than 7 calendar days after the end, of recommissioning period for this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

13. Startup is defined as the period beginning with turbine light-off, or when the combustion turbine output is reduced to below minimum load (minimum megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the lb/hr and ppmv emission limits in Condition 21) to engage the steam turbine, until the unit again reaches minimum load. Shutdown is defined as the period beginning with initiation of turbine shutdown sequence and ending either with cessation of firing of the gas turbine engine, or when the unit ramps back up after an aborted shutdown and the unit reaches minimum load. Startup durations shall not exceed three hours, except during recommissioning periods for this unit, and shutdowns shall not exceed one hour, per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit

14. Permittee may inject ammonia during startup when the selective catalytic reduction system is at least 302 degrees F, however ammonia must be injected during startup when the selective catalytic reduction system catalyst temperature exceeds 500 degrees F and selective catalytic reduction system inlet concentrations exceed 2.5 ppmv NOx and as needed during normal operation to meet the NOx emissions limits. Permittee shall monitor and record catalyst temperature during periods of startup. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods. [District Rule 1081] Federally Enforceable Through Title V Permit

16. During startup and/or recommissioning of any gas turbine engines, combined emissions from the four gas turbine engines (S-3412-1, '-2, '-3 and '-4) heat recovery steam generator exhausts shall not exceed the following: NOx (as NO2): 900 lb and CO:2,500 lb in any one hour. [District Rule 2201] Federally Enforceable Through Title V Permit

17. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the combustors of this unit shall be tuned to minimize emissions. [District Rule 2201] Federally Enforceable Through Title V Permit

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18. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the oxidation catalyst shall be utilized to minimize CO emissions from this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

19. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the Selective Catalytic Reduction (SCR) system shall be utilized to control NOx whenever gas turbine operations are sufficiently stable and minimum catalyst temperature is achieved. [District Rule 2201] Federally Enforceable Through Title V Permit

20. During recommissioning periods for this unit, emission rates from gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 517.3 lb/hr and CO: 439.6 lb/hr. NOx (as NO2) emission limit is a one hour average. CO emission limit is a three-hour rolling average. [District Rule 2201] Federally Enforceable Through Title V Permit

21. Emission rates from the gas turbine engine heat recovery steam generator exhaust, except during startup and/or shutdown of this unit, shall not exceed the following: PM10: 11.0 lb/hr, SOx (as SO2): 3.89 lb/hr, NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15% O2, VOC (as propane): 2.80 lb/hr and 0.7 ppmvd @ 15% O2, and CO: 31.40 lb/hr and either 10 ppmvd @ 15% O2 at operating loads less than or equal to 221 MW (gross three hour average) or 6 ppmvd @ 15% O2 at operating loads greater than 221 MW (gross three hour average). NOx (as NO2) emission limit is a one hour average. All other emission limits are three hour rolling averages. NOx and CO emission limits shall not apply during recommissioning periods. [District Rule 2201; District Rule 4703, 5.1 and 5.2; and 40 CFR 60.332 and 60.333] Federally Enforceable Through Title V Permit

22. Except during recommissioning periods for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following on days when a startup or shutdown of the unit occurs: PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, NOx (as NO2): 511.4 lb/day, VOC: 139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

23. During recommissioning periods, for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 4,790.0 lb/day, PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, VOC:139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

24. Twelve month rolling average emissions from each gas turbine engine heat recovery steam generator exhaust shall not exceed the following PM10: 96,360 lb/year, SOx (as SO2): 30,517 lb/year, NOx (as NO2): 146,001 lb/year, VOC: 25,063 lb/year, and CO: 217,921 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

25. Ammonia emission rate shall not exceed 10 ppmvd @ 15% O2 on a twenty four hour rolling average. [District Rule 4102]

26. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O2 = ((a-(bxc/1,000,000)) x 1,0 00,000 / b) x d, where a = ammonia injection rate(lb/hr)/17(lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol), c = change in measured NOx concentration ppmv at 15% O2 across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. [District Rule 4102]

27. Short term emissions shall be measured to demonstrate compliance with short term emission limits (lb/hr and ppmv @ 15% O2) annually by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm at full load conditions as follows - NOx: ppmvd @ 15% O2 and lb/hr, CO: ppmvd @ 15% O2 and lb/hr, VOC: ppmvd @ 15% O2 and lb/hr, PM10: lb/hr, and ammonia: ppmvd @ 15% O2. Sample collection for ammonia emissions shall be based on a two-hour or longer average. [District Rule 1081] Federally Enforceable Through Title V Permit

28. Cold start NOx, and CO mass emissions shall be measured, and measurement of cold start VOC emissions shall be performed for one of the gas turbines engines (S-3412-1, '2, '3, or '4) at least every seven years by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. [District Rule 1081] Federally Enforceable Through Title V Permit

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29. 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. [District Rules 1081; 2520, 9.3.2; and 2540] Federally Enforceable Through Title V Permit

30. The sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 3246. [District Rule 2520, 9.3.2 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit

31. Permittee shall maintain records of fuel sulfur content monitoring data and records documenting a constant supplier or source of fuel (a substantial change in fuel quality sball be considered a change in fuel supply). Permittee shall submit results of fuel sulfur content monitoring annually to the District with the Title V Annual Certificate. Permittee shall notify the District of any changes in fuel supplier or source within 60 days of such change. [District Rules 1081 and 2540] Federally Enforceable Through Title V Permit

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

33. The following test methods shall be used NOx: EPA Method 7E or 20, CO: EPA method 10 or 10B, O2: EPA Method 3, 3A, or 20, VOC: EPA method 18, and PM10: EPA method 5 (front half and back half) or EPA methods 201A and 202. Alternative test methods as approved by the District and EPA may also be used to address the source testing requirements of this permit. [District Rules 1081 and 4703, 6.4; and 40 CFR 60.335] Federally Enforceable Through Title V Permit

34. Source testing for ammonia shall be performed using BAAQMD ST-1B. [District Rule 4102]

35. The permittee shall maintain hourly records of ammonia emission concentrations (ppmv @ 15% O2) [District Rule 4102]

36. The permittee shall maintain hourly records of NOx, and CO emission concentrations (ppmv @ 15% O2), and hourly, daily, and twelve month rolling average records of NOx and CO emissions. Compliance with the hourly, daily, and twelve month rolling average VOC emission limits shall be demonstrated by annual VOC source tests. [District Rule 2201] Federally Enforceable Through Title V Permit

37. The permittee shall maintain records of SOx lb/hr, lb/day, and lb/twelve month rolling average emission. SOx emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [District Rule 2201] Federally Enforceable Through Title V Permit

38. {2249} CEM cycling times shall be those specified in 40 CFR, Part 51, Appendix P, Sections 3.4, 3.4.1 and 3.4.2, or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the EPA. [District Rule 1080, 6.4] Federally Enforceable Through Title V Permit

39. {2250} The continuous NOx and O2 monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [District Rule 1080, 6.3, 6.5, 6.6 and 7.2] Federally Enforceable Through Title V Permit

40. {2251} The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary of data shall be in the form and the manner prescribed by the APCO. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit

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41. {2253} Operators of CEM systems installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; Applicable time and date of each period during which the CEM was inoperative, except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080, 8.0] Federally Enforceable Through Title V Permit

42. Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. Successive quarterly audits shall occur no closer than two months. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080, 6.2] Federally Enforceable Through Title V Permit

43. {2254} APCO or an authorized representative shall be allowed to inspect, as he or she determines to be necessary, the monitoring devices required by this rule to ensure that such devices are functioning properly. [District Rule 1080, 11.0] Federally Enforceable Through Title V Permit

44. Sulfur compound emissions shall not exceed 0.015% by volume at calculated at 15% O2 (150 ppmv @ 15% O2) on a dry basis averaged over 15 consecutive minutes. [District Rule 4801, Kern County Rule 407, and 40 CFR 60.333(a)] Federally Enforceable Through Title V Permit

45. {2270} All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device. [40 CFR 60.13(b)] Federally Enforceable Through Title V Permit

46. Continuous emission monitors shall meet applicable requirements of 40 CFR 60.13. [District Rule 4703, 5.1 & 6.4 and 40 CFR 60.13] Federally Enforceable Through Title V Permit

47. By two hours after turbine light-off the owner or operator shall not operate the gas turbine under load conditions, excluding shutdown or recommissioning periods for this unit, which results in the measured concentrations exceeding the following limits: 5 ppmv NOx (as NO2) @ 15% O2 or 200 ppmv CO @ 15% O2. [District Rule 4703, 5.1.2 and 5.2] Federally Enforceable Through Title V Permit

48. The HHV and LHV of the fuel combusted shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit

49. The owner or operator shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown, recommissioning period, malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEM system that has been installed pursuant to District Rule 1080 (as amended 12/17/92), emission measurements, total daily and annual hours of operation, hourly quantity of fuel used, and gross three hour average operating load. [District Rules 1080, 7.0; 2520, 9.3.2; 4703, 6.2; and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

50. {2271} The owner or 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, 9.4.2] Federally Enforceable Through Title V Permit

51. Air Pollution Control Equipment/Operation: The Permittee shall continuously operate and maintain the following air pollution controls and operations to minimize emissions at or below the levels specified in Conditions X-E of the PSD permit. The aforementioned "continuous" periods of operation do not include periods of startup, shutdown, and recommissioning, as defined in Section X.E.3, and X.F.1 of the PSD permit, or periods of malfunction as defined in Section IV.B.1 of the PSD permit. The Permittee shall continuously operate Selective Catalytic Reduction (SCR) systems on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 to meet the NOx emission limits specified in the PSD permit. The Permittee shall maintain an oxidation catalyst system on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 for control of CO. [PSD permit (SJ 98-01), X.B] Federally Enforceable Through Title V Permit

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52. Continuous Emission Monitoring: Prior to the date of startup and thereafter, the Permittee shall install, maintain, and operate the following Continuous Emissions Monitoring Systems (CEM) on each Combustion Turbine Generator (CTG) set exhaust vent stack: a. A continuous monitoring system to measure stack gas NOx concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B); and b. A continuous monitoring system to measure stack CO concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B). [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

53. Continuous Emission Monitoring: The permittee shall install, maintain, and operate a continuously recording fuel gas flow meter on each gas turbine engine. Exhaust gas flow rates shall then be determined from fuel gas flow using EPA Method 19. [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

54. Emission Limits: Emissions from each of the gas turbines (permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4) shall not exceed the following limits, except during periods of startup, shutdown and recommissioning: a. NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15 percent O2, based on a 1-hour average; b. 25.30 lb-CO/hr and 6 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads above 221 MW (gross 3-hour average) or 31.40 lb-CO/hr and 10 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads at or below 221 MW (gross 3-hour average). [PSD permit (SJ 98-01), X.E.1] Federally Enforceable Through Title V Permit

55. Emission Limits: Emission rates from each gas turbine shall not exceed the following daily and annual limits, including all periods of startup, shutdown and recommissioning, except NOx daily limits may be exceeded during recommissioning periods: NOx (as NO2): 511.4 lb/day, 73.0 tons/yr; CO: 1,873.0 lb/day, 109.0 tons/yr; SO2: 91.4 lb/day ,15.3 tons/yr. The annual limit is a 12-month rolling average. [PSD permit (SJ 98-01), X.E.2] Federally Enforceable Through Title V Permit

56. Emission Limits: The following definitions apply to the PSD permit: a. Startup of the combustion turbine is defined as the period beginning with combustion turbine light-off, until the unit reaches minimum load; b. Startup of the steam turbine is defined as the period when the combustion turbine output is reduced to below minimum load, in order to engage the steam turbine, until the unit again reaches minimum load; c. Shutdown is defined as the period beginning with initiation of combustion turbine shutdown sequence and ending either with the cessation of firing of the combustion turbine engine, or when the unit ramps back up after an aborted shutdown, until the unit reaches minimum load; d. Minimum load is defined as the minimum combustion turbine megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the ppmv emission limits in Condition X.E.1 of the PSD permit. [PSD permit (SJ 98-01), X.E.3] Federally Enforceable Through Title V Permit

57. Emission Limits: Each startup, whether of the combustion or steam turbine, shall not exceed three hours per occurrence. Each shutdown shall not exceed one hour per occurrence. [PSD permit (SJ 98-01), X.E.4] Federally Enforceable Through Title V Permit

58. Recommissioning Periods: Recommissioning is defined as the period following an inspection, maintenance, repair and/or overhaul outage where the source conducts operational and contractual testing and tuning to ensure the safe, efficient and reliable operation of the plant. A recommissioning period for any single outage shall not exceed 60 cumulative days of combustion turbine firing. [PSD permit (SJ 98-01), X.F.1] Federally Enforceable Through Title V Permit

59. Recommissioning Periods: Prior to commencing a recommissioning period, permittee shall perform a PSD applicability determination for the action(s) triggering the recommissioning period. [PSD permit (SJ 98-01), X.F.2] Federally Enforceable Through Title V Permit

60. Recommissioning Periods: Permittee shall maintain a copy of each PSD applicability determination on site. In addition, if the action(s) triggering the recommissioning period include(s) the replacement of parts that could affect capacity or emissions, or an overhaul outage, then the permittee shall provide a copy of such determination to EPA prior to the start of the recommissioning period. [PSD permit (SJ 98-01), X.F.3] Federally Enforceable Through Title V Permit

61. Recommissioning Periods: Emission rates from each combustion turbine shall not exceed the following limits during a recommissioning period: 439.6 lbs-CO per hr; 517.3 lbs-NOx per hr; 4,790.0 lbs-NOx per day; 4,443.0 lbs-CO per recommissioning event; 8,545.0 lbs-NOx per recommissioning event. [PSD permit (SJ 98-01), X.F.4] Federally Enforceable Through Title V Permit

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62. Recommissioning Periods: The permittee shall maintain the following records for each recommissioning period: a. The number of days the combustion turbine is fired; b. Hourly and daily emissions, in lbs/hr and lbs/day, of NOx and CO emitted; c. Total emissions of NOx and CO emitted during the recommissioning period; d. Documentation of the testing and tuning activities which occurred during the recommissioning period. [PSD permit (SJ 98-01), X.F.5] Federally Enforceable Through Title V Permit

63. Recommissioning Periods: Pursuant to 40 CFR 60.8, within 30 days after the end of a recommissioning period, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. Upon written request and adequate justification from the Permittee, EPA may waive a performance test after a recommissioning period. [PSD permit (SJ 98-01), X.F.6] Federally Enforceable Through Title V Permit

64. Performance Tests: Pursuant to 40 CFR 60.8, within 60 days after achieving the maximum production rate of the affected emission units, but no later than 180 days after the initial startup of equipment (as defined in 40 CFR 60.2), and at such other times as specified by the Regional Administrator, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. The tests for NOx and CO shall be conducted on an annual basis and at the maximum operating capacity of the facilities being tested. Upon written request (Attn: AIR-5) from the Permittee, EPA may approve the conducting of performance tests at a lower specified production rate. After initial performance test and upon written request and adequate justification from the Permittee, EPA may waive a specified annual test for the facility. [PSD permit (SJ 98-01), X.G.1] Federally Enforceable Through Title V Permit

65. Performance Tests: Performance tests for the emissions of CO and NOx shall be conducted and the results reported in accordance with the test methods set forth in 40 CFR 60, Part 60.8 and Appendix A. The following test methods, or alternatives approved by EPA, shall be used: a. Performance tests of the emissions of CO shall be conducted using EPA Methods 1-4 and 10; b. Performance tests of the emissions of NOx shall be conducted using EPA Methods 1-4 and 7E; c. Natural gas sulfur content shall be tested according to ASTM D3246. The EPA (Attn: AIR-5) shall be notified in writing at least 30 days prior to such test to allow time for the 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 EPA 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 EPA. [PSD permit (SJ 98-01), X.G] Federally Enforceable Through Title V Permit

66. Performance Tests: For performance test purposes, sampling ports, platforms, and access shall be provided by the Permittee on the exhaust stack in accordance with 40 CFR 60.8(e). [PSD permit (SJ 98-01), X.G.4] Federally Enforceable Through Title V Permit

67. Recordkeeping and Reporting: A file shall be maintained of all measurements including continuous monitoring system evaluations, all continuous monitoring system or monitoring device calibration checks, adjustments and maintenance performed on these systems or devices, performance and all other information required by 40 CFR 60 or 75 recorded in a permanent form suitable for inspection. The file shall be retained for at least five (5) years following the date of such measurement, maintenance, reports, and records. [PSD permit (SJ 98-01), X.H.1] Federally Enforceable Through Title V Permit

68. Recordkeeping and Reporting: The Permittee shall maintain an operating log for each combustion turbine, which contains at a minimum, the following information: the start and finish times for all startup, shutdown and recommissioning periods. [PSD permit (SJ 98-01), X.H.3] Federally Enforceable Through Title V Permit

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69. Recordkeeping and Reporting: The permittee shall submit a written report of all excess emissions to EPA (Attn: AIR-5) for every calendar quarter. The report shall include the following: a. The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions; b. Specific identification of each period of excess emissions that occurs during startups, shutdown, recommissioning, and malfunctions of the engine exhaust systems. The nature and cause of any malfunction (if known) and the corrective action taken or preventative measures adopted shall also be reported; c. The date and time identifying each period during which a CEMS was inoperative, repaired, or adjusted, except for zero and span checks, and the nature of the system repairs or adjustments; d. When no excess emissions have occurred or the CEMS have not been inoperative, repaired, or adjusted, such information shall be stated in the report; e. Excess emissions shall be defined as any 1-hour period during which the average emissions of NOx, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.a of the PSD permit; f. Excess emissions shall be defined as any 3-hour period during which the average emissions of CO, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.b of the PSD permit. [PSD permit (SJ 98-01), X.H.4] Federally Enforceable Through Title V Permit

70. Recordkeeping and Reporting: The facility is subject to the recordkeeping and reporting requirements of the applicable New Source Performance Standards (NSPS) - 40 CFR Part 60, as described in this permit. [PSD permit (SJ 98-01), X.H.5] Federally Enforceable Through Title V Permit

71. New Source Performance Standards: The facility's combustion turbines are subject to the federal New Source Performance Standards (NSPS) - 40 CFR Part 60, Subpart GG, as well as the General Provisions of Subpart A. The owner/operator shall meet the applicable requirements of the aforementioned NSPS Subparts. [PSD permit (SJ 98-01), X.I] Federally Enforceable Through Title V Permit

72. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: District Rule 4801 and Kern County Rule 407 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

73. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.332, 60.333 (a) and (b); 40 CFR 60.334(a), (b)(2), (c), and 40 CFR 60.335(b); District Rule 4703 (as amended 9/20/07), Sections 5.1.1, 5.2, 6.1, 6.3.1, 6.3.3, 6.4, 6.4.5, and 6.4.6 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

74. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.7(b), 60.8, 60.8(d), 60.13, and 60.13(b); District Rules 1080 (as amended 12/17/92), Sections 6.3, 6.4, 6.5, 7.0, 7.1, 7.2, 7.3, 8.0, 9.0, 10.0, and 11.0; and 1081 (as amended 12/16/93) as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

75. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the applicable requirements of District Rule 4201 (as amended 12/17/92). A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

76. {2256} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.1] Federally Enforceable Through Title V Permit

77. Gas turbine engine exhaust shall be equipped with an additional continuous NOx analyzer located upstream of the SCR unit for purposes of monitoring ammonia slip (Ammonia Slip NOx Analyzer). This analyzer and shall be capable of monitoring NOx concentration at this location during startups and shutdowns as well as normal operating conditions. [District Rule 4102]

78. The Ammonia Slip NOx Analyzer shall conform to the specifications of Section 6.0, Performance Specification 2, 40 CFR 60, Appendix B. [District Rule 4102]

79. Calibration drift (CD) assessment for the Ammonia Slip NOx Analyzer shall be performed in accordance with requirements specified in section 4 of Appendix F to 40 CFR Part 60. [District Rule 4102]

80. A Cylinder Gas Audit (CGA) of the Ammonia Slip NOx Analyzer shall be performed each quarter in accordance with the procedures of specified in section 5 of Appendix F to 40 CFR Part 60. [District Rule 4102]

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CONDITIONS CONTINUE ON NEXT PAGE

81. Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required by this permit, the Ammonia Slip NOx Analyzer shall be in continuous operation. [District Rule 4102]

82. The Ammonia Slip NOx Analyzer shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. [District Rule 4102]

83. Emission data from the Ammonia Slip NOx Analyzer, including the calculated ammonia slip, shall be obtained for at least 18 hours in at least 22 out of 30 successive gas turbine operating days. [District Rule 4102]

84. Notification and record keeping for the Ammonia Slip NOx Analyzer shall be in accordance with the requirements specified in 40 CFR 60.7. [District Rule 4102]

85. An excess ammonia emissions and monitoring system performance report for the Ammonia Slip NOx Analyzer, in accordance with the requirements specified in 40 CFR 60.7, shall be submitted to the APCO for each calendar quarter. [District Rule 4102]

86. Although specific sections of 40 CFR 60 are referenced for convenience in permit conditions for the Ammonia Slip NOx Analyzer, the equipment is not subject to federal enforcement or other federal monitoring, reporting or recordkeeping requirements. [District Rule 4102]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

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PERMIT NO: S-3412-2-19 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: LA PALOMA GENERATING CO LLC
MAILING ADDRESS: PO BOX 175
MCKITTRICK, CA 93251

LOCATION: 1760 W SKYLINE ROAD
MCKITTRICK, CA 93251

SECTION: NE27 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:
MODIFICATION OF ABB GT-24 NATURAL GAS FIRED COMBINED CYCLE GAS TURBINE ENGINE/ELECTRICAL GENERATOR #2 WITH DRY LOW NOX COMBUSTORS, STEAM POWER AUGMENTATION, SELECTIVE CATALYTIC REDUCTION, STEAM TURBINE AND ELECTRICAL GENERATOR (262 MW NOMINAL RATING): INSTALL AIR INLET FOGGER

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Gas turbine engine and generator lube oil vents shall be equipped with mist eliminators. Visible emissions from lube oil vents shall not exceed 5% opacity, except for three minutes in any hour. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The gas turbine engine shall be equipped with continuously recording fuel gas flowmeter. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

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DAVID WARNER, Director of Permit Services
S-3412-2-19 : Dec 26 2012 10:15AM -- EDGEHILR : Joint Inspection NOT Required

5. Gas turbine engine exhaust shall be equipped with a continuously recording emissions monitor for NOx, CO and O2 downstream of the SCR catalyst dedicated to this unit. This continuous emission monitor shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as normal operating conditions. [District Rule 2201, 4703, and 40 CFR Part 64] Federally Enforceable Through Title V Permit

6. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201] Federally Enforceable Through Title V Permit

7. Heat recovery steam generator design shall provide space for additional selective catalytic reduction catalyst and oxidation catalyst if required to meet NOx and CO emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit

8. Permittee shall monitor and record exhaust gas temperature at selective catalytic reduction and oxidation catalyst inlets. [District Rule 2201] Federally Enforceable Through Title V Permit

9. Except during startup ignition, gas turbine engine shall be fired exclusively on pipeline quality natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry scf of natural gas. Gas turbine igniters may be fueled with propane or natural gas as part of startup sequence. Use of propane during startup process is limited to 6 grams per second, for a duration of no more than 30 seconds per startup on a design basis. Ignition occurs for the duration of time required to ignite and achieve a sustained flame on natural gas. [District Rule 2201, District Rule 4801, Kern County Rule 407, and PSD permit (SJ 98-01), X.C.1] Federally Enforceable Through Title V Permit

10. Recommissioning activities are defined as, but not limited to, all testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and LPGC contractors to insure safe and reliable steady state operation of the plant. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Recommissioning periods for this unit shall commence at first firing during major outage maintenance procedures. The recommissioning period shall terminate when the unit has completed performance testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers. [District Rule 2201] Federally Enforceable Through Title V Permit

12. Permittee shall notify the District at least seven (7) calendar days prior to start, and no more than 7 calendar days after the end, of recommissioning period for this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

13. Startup is defined as the period beginning with turbine light-off, or when the combustion turbine output is reduced to below minimum load (minimum megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the lb/hr and ppmv emission limits in Condition 21) to engage the steam turbine, until the unit again reaches minimum load. Shutdown is defined as the period beginning with initiation of turbine shutdown sequence and ending either with cessation of firing of the gas turbine engine, or when the unit ramps back up after an aborted shutdown and the unit reaches minimum load. Startup durations shall not exceed three hours, except during recommissioning periods for this unit, and shutdowns shall not exceed one hour, per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit

14. Permittee may inject ammonia during startup when the selective catalytic reduction system is at least 302 degrees F, however ammonia must be injected during startup when the selective catalytic reduction system catalyst temperature exceeds 500 degrees F and selective catalytic reduction system inlet concentrations exceed 2.5 ppmv NOx and as needed during normal operation to meet the NOx emissions limits. Permittee shall monitor and record catalyst temperature during periods of startup. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods. [District Rule 1081] Federally Enforceable Through Title V Permit

16. During startup and/or recommissioning of any gas turbine engines, combined emissions from the four gas turbine engines (S-3412-1, '-2, '-3 and '-4) heat recovery steam generator exhausts shall not exceed the following: NOx (as NO2): 900 lb and CO:2,500 lb in any one hour. [District Rule 2201] Federally Enforceable Through Title V Permit

17. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the combustors of this unit shall be tuned to minimize emissions. [District Rule 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

18. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the oxidation catalyst shall be utilized to minimize CO emissions from this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

19. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the Selective Catalytic Reduction (SCR) system shall be utilized to control NOx whenever gas turbine operations are sufficiently stable and minimum catalyst temperature is achieved. [District Rule 2201] Federally Enforceable Through Title V Permit

20. During recommissioning periods for this unit, emission rates from gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 517.3 lb/hr and CO: 439.6 lb/hr. NOx (as NO2) emission limit is a one hour average. CO emission limit is a three-hour rolling average. [District Rule 2201] Federally Enforceable Through Title V Permit

21. Emission rates from the gas turbine engine heat recovery steam generator exhaust, except during startup and/or shutdown of this unit, shall not exceed the following: PM10: 11.0 lb/hr, SOx (as SO2): 3.89 lb/hr, NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15% O2, VOC (as propane): 2.80 lb/hr and 0.7 ppmvd @ 15% O2, and CO: 31.40 lb/hr and either 10 ppmvd @ 15% O2 at operating loads less than or equal to 221 MW (gross three hour average) or 6 ppmvd @ 15% O2 at operating loads greater than 221 MW (gross three hour average). NOx (as NO2) emission limit is a one hour average. All other emission limits are three hour rolling averages. NOx and CO emission limits shall not apply during recommissioning periods. [District Rule 2201; District Rule 4703, 5.1 and 5.2; and 40 CFR 60.332 and 60.333] Federally Enforceable Through Title V Permit

22. Except during recommissioning periods for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following on days when a startup or shutdown of the unit occurs: PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, NOx (as NO2): 511.4 lb/day, VOC: 139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

23. During recommissioning periods, for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 4,790.0 lb/day, PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, VOC:139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

24. Twelve month rolling average emissions from each gas turbine engine heat recovery steam generator exhaust shall not exceed the following PM10: 96,360 lb/year, SOx (as SO2): 30,517 lb/year, NOx (as NO2): 146,001 lb/year, VOC: 25,063 lb/year, and CO: 217,921 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

25. Ammonia emission rate shall not exceed 10 ppmvd @ 15% O2 on a twenty four hour rolling average. [District Rule 4102]

26. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O2 = ((a-(bxc/1,000,000)) x 1,0 00,000 / b) x d, where a = ammonia injection rate(lb/hr)/17(lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol), c = change in measured NOx concentration ppmv at 15% O2 across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. [District Rule 4102]

27. Short term emissions shall be measured to demonstrate compliance with short term emission limits (lb/hr and ppmv @ 15% O2) annually by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm at full load conditions as follows - NOx: ppmvd @ 15% O2 and lb/hr, CO: ppmvd @ 15% O2 and lb/hr, VOC: ppmvd @ 15% O2 and lb/hr, PM10: lb/hr, and ammonia: ppmvd @ 15% O2. Sample collection for ammonia emissions shall be based on a two-hour or longer average. [District Rule 1081] Federally Enforceable Through Title V Permit

28. Cold start NOx, and CO mass emissions shall be measured, and measurement of cold start VOC emissions shall be performed for one of the gas turbines engines (S-3412-1, '2, '3, or '4) at least every seven years by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. [District Rule 1081] Federally Enforceable Through Title V Permit

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29. 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. [District Rules 1081; 2520, 9.3.2; and 2540] Federally Enforceable Through Title V Permit

30. The sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 3246. [District Rule 2520, 9.3.2 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit

31. Permittee shall maintain records of fuel sulfur content monitoring data and records documenting a constant supplier or source of fuel (a substantial change in fuel quality shall be considered a change in fuel supply). Permittee shall submit results of fuel sulfur content monitoring annually to the District with the Tittle V annual Certificate. Permittee shall notify the District of any changes in fuel supplier or source within 60 days of such change. [District Rules 1081 and 2540] Federally Enforceable Through Title V Permit

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

33. The following test methods shall be used NOx: EPA Method 7E or 20, CO: EPA method 10 or 10B, O2: EPA Method 3, 3A, or 20, VOC: EPA method 18, and PM10: EPA method 5 (front half and back half) or EPA methods 201A and 202. Alternative test methods as approved by the District and EPA may also be used to address the source testing requirements of this permit. [District Rules 1081 and 4703, 6.4; and 40 CFR 60.335] Federally Enforceable Through Title V Permit

34. Source testing for ammonia shall be performed using BAAQMD ST-1B. [District Rule 4102]

35. The permittee shall maintain hourly records of ammonia emission concentrations (ppmv @ 15% O2) [District Rule 4102]

36. The permittee shall maintain hourly records of NOx, and CO emission concentrations (ppmv @ 15% O2), and hourly, daily, and twelve month rolling average records of NOx and CO emissions. Compliance with the hourly, daily, and twelve month rolling average VOC emission limits shall be demonstrated by annual VOC source tests. [District Rule 2201] Federally Enforceable Through Title V Permit

37. The permittee shall maintain records of SOx lb/hr, lb/day, and lb/twelve month rolling average emission. SOx emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [District Rule 2201] Federally Enforceable Through Title V Permit

38. {2249} CEM cycling times shall be those specified in 40 CFR, Part 51, Appendix P, Sections 3.4, 3.4.1 and 3.4.2, or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the EPA. [District Rule 1080, 6.4] Federally Enforceable Through Title V Permit

39. {2250} The continuous NOx and O2 monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [District Rule 1080, 6.3, 6.5, 6.6 and 7.2] Federally Enforceable Through Title V Permit

40. {2251} The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary of data shall be in the form and the manner prescribed by the APCO. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit

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41. {2253} Operators of CEM systems installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; Applicable time and date of each period during which the CEM was inoperative, except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080, 8.0] Federally Enforceable Through Title V Permit

42. Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. Successive quarterly audits shall occur no closer than two months. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080, 6.2] Federally Enforceable Through Title V Permit

43. {2254} APCO or an authorized representative shall be allowed to inspect, as he or she determines to be necessary, the monitoring devices required by this rule to ensure that such devices are functioning properly. [District Rule 1080, 11.0] Federally Enforceable Through Title V Permit

44. Sulfur compound emissions shall not exceed 0.015% by volume at calculated at 15% O2 (150 ppmv @ 15% O2) on a dry basis averaged over 15 consecutive minutes. [District Rule 4801, Kern County Rule 407, and 40 CFR 60.333(a)] Federally Enforceable Through Title V Permit

45. {2270} All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device. [40 CFR 60.13(b)] Federally Enforceable Through Title V Permit

46. Continuous emission monitors shall meet applicable requirements of 40 CFR 60.13. [District Rule 4703, 5.1 & 6.4 and 40 CFR 60.13] Federally Enforceable Through Title V Permit

47. By two hours after turbine light-off the owner or operator shall not operate the gas turbine under load conditions, excluding shutdown or recommissioning periods for this unit, which results in the measured concentrations exceeding the following limits: 5 ppmv NOx (as NO2) @ 15% O2 or 200 ppmv CO @ 15% O2. [District Rule 4703, 5.1.2 and 5.2] Federally Enforceable Through Title V Permit

48. The HHV and LHV of the fuel combusted shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit

49. The owner or operator shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown, recommissioning period, malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEM system that has been installed pursuant to District Rule 1080 (as amended 12/17/92), emission measurements, total daily and annual hours of operation, hourly quantity of fuel used, and gross three hour average operating load. [District Rules 1080, 7.0; 2520, 9.3.2; 4703, 6.2; and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

50. {2271} The owner or 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, 9.4.2] Federally Enforceable Through Title V Permit

51. Air Pollution Control Equipment/Operation: The Permittee shall continuously operate and maintain the following air pollution controls and operations to minimize emissions at or below the levels specified in Conditions X-E of the PSD permit. The aforementioned "continuous" periods of operation do not include periods of startup, shutdown, and recommissioning, as defined in Section X.E.3, and X.F.1 of the PSD permit, or periods of malfunction as defined in Section IV.B.1 of the PSD permit. The Permittee shall continuously operate Selective Catalytic Reduction (SCR) systems on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 to meet the NOx emission limits specified in the PSD permit. The Permittee shall maintain an oxidation catalyst system on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 for control of CO. [PSD permit (SJ 98-01), X.B] Federally Enforceable Through Title V Permit

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52. Continuous Emission Monitoring: Prior to the date of startup and thereafter, the Permittee shall install, maintain, and operate the following Continuous Emissions Monitoring Systems (CEM) on each Combustion Turbine Generator (CTG) set exhaust vent stack: a. A continuous monitoring system to measure stack gas NOx concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B); and b. A continuous monitoring system to measure stack CO concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B). [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

53. Continuous Emission Monitoring: The permittee shall install, maintain, and operate a continuously recording fuel gas flow meter on each gas turbine engine. Exhaust gas flow rates shall then be determined from fuel gas flow using EPA Method 19. [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

54. Emission Limits: Emissions from each of the gas turbines (permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4) shall not exceed the following limits, except during periods of startup, shutdown and recommissioning: a. NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15 percent O2, based on a 1-hour average; b. 25.30 lb-CO/hr and 6 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads above 221 MW (gross 3-hour average) or 31.40 lb-CO/hr and 10 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads at or below 221 MW (gross 3-hour average). [PSD permit (SJ 98-01), X.E.1] Federally Enforceable Through Title V Permit

55. Emission Limits: Emission rates from each gas turbine shall not exceed the following daily and annual limits, including all periods of startup, shutdown and recommissioning, except NOx daily limits may be exceeded during recommissioning periods: NOx (as NO2): 511.4 lb/day, 73.0 tons/yr; CO: 1,873.0 lb/day, 109.0 tons/yr; SO2: 91.4 lb/day ,15.3 tons/yr. The annual limit is a 12-month rolling average. [PSD permit (SJ 98-01), X.E.2] Federally Enforceable Through Title V Permit

56. Emission Limits: The following definitions apply to the PSD permit: a. Startup of the combustion turbine is defined as the period beginning with combustion turbine light-off, until the unit reaches minimum load; b. Startup of the steam turbine is defined as the period when the combustion turbine output is reduced to below minimum load, in order to engage the steam turbine, until the unit again reaches minimum load; c. Shutdown is defined as the period beginning with initiation of combustion turbine shutdown sequence and ending either with the cessation of firing of the combustion turbine engine, or when the unit ramps back up after an aborted shutdown, until the unit reaches minimum load; d. Minimum load is defined as the minimum combustion turbine megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the ppmv emission limits in Condition X.E.1 of the PSD permit. [PSD permit (SJ 98-01), X.E.3] Federally Enforceable Through Title V Permit

57. Emission Limits: Each startup, whether of the combustion or steam turbine, shall not exceed three hours per occurrence. Each shutdown shall not exceed one hour per occurrence. [PSD permit (SJ 98-01), X.E.4] Federally Enforceable Through Title V Permit

58. Recommissioning Periods: Recommissioning is defined as the period following an inspection, maintenance, repair and/or overhaul outage where the source conducts operational and contractual testing and tuning to ensure the safe, efficient and reliable operation of the plant. A recommissioning period for any single outage shall not exceed 60 cumulative days of combustion turbine firing. [PSD permit (SJ 98-01), X.F.1] Federally Enforceable Through Title V Permit

59. Recommissioning Periods: Prior to commencing a recommissioning period, permittee shall perform a PSD applicability determination for the action(s) triggering the recommissioning period. [PSD permit (SJ 98-01), X.F.2] Federally Enforceable Through Title V Permit

60. Recommissioning Periods: Permittee shall maintain a copy of each PSD applicability determination on site. In addition, if the action(s) triggering the recommissioning period include(s) the replacement of parts that could affect capacity or emissions, or an overhaul outage, then the permittee shall provide a copy of such determination to EPA prior to the start of the recommissioning period. [PSD permit (SJ 98-01), X.F.3] Federally Enforceable Through Title V Permit

61. Recommissioning Periods: Emission rates from each combustion turbine shall not exceed the following limits during a recommissioning period: 439.6 lbs-CO per hr; 517.3 lbs-NOx per hr; 4,790.0 lbs-NOx per day; 4,443.0 lbs-CO per recommissioning event; 8,545.0 lbs-NOx per recommissioning event. [PSD permit (SJ 98-01), X.F.4] Federally Enforceable Through Title V Permit

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62. Recommissioning Periods: The permittee shall maintain the following records for each recommissioning period: a. The number of days the combustion turbine is fired; b. Hourly and daily emissions, in lbs/hr and lbs/day, of NOx and CO emitted; c. Total emissions of NOx and CO emitted during the recommissioning period; d. Documentation of the testing and tuning activities which occurred during the recommissioning period. [PSD permit (SJ 98-01), X.F.5] Federally Enforceable Through Title V Permit

63. Recommissioning Periods: Pursuant to 40 CFR 60.8, within 30 days after the end of a recommissioning period, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. Upon written request and adequate justification from the Permittee, EPA may waive a performance test after a recommissioning period. [PSD permit (SJ 98-01), X.F.6] Federally Enforceable Through Title V Permit

64. Performance Tests: Pursuant to 40 CFR 60.8, within 60 days after achieving the maximum production rate of the affected emission units, but no later than 180 days after the initial startup of equipment (as defined in 40 CFR 60.2), and at such other times as specified by the Regional Administrator, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. The tests for NOx and CO shall be conducted on an annual basis and at the maximum operating capacity of the facilities being tested. Upon written request (Attn: AIR-5) from the Permittee, EPA may approve the conducting of performance tests at a lower specified production rate. After initial performance test and upon written request and adequate justification from the Permittee, EPA may waive a specified annual test for the facility. [PSD permit (SJ 98-01), X.G.1] Federally Enforceable Through Title V Permit

65. Performance Tests: Performance tests for the emissions of CO and NOx shall be conducted and the results reported in accordance with the test methods set forth in 40 CFR 60, Part 60.8 and Appendix A. The following test methods, or alternatives approved by EPA, shall be used: a. Performance tests of the emissions of CO shall be conducted using EPA Methods 1-4 and 10; b. Performance tests of the emissions of NOx shall be conducted using EPA Methods 1-4 and 7E; c. Natural gas sulfur content shall be tested according to ASTM D3246. The EPA (Attn: AIR-5) shall be notified in writing at least 30 days prior to such test to allow time for the 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 EPA 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 EPA. [PSD permit (SJ 98-01), X.G] Federally Enforceable Through Title V Permit

66. Performance Tests: For performance test purposes, sampling ports, platforms, and access shall be provided by the Permittee on the exhaust stack in accordance with 40 CFR 60.8(e). [PSD permit (SJ 98-01), X.G.4] Federally Enforceable Through Title V Permit

67. Recordkeeping and Reporting: A file shall be maintained of all measurements including continuous monitoring system evaluations, all continuous monitoring system or monitoring device calibration checks, adjustments and maintenance performed on these systems or devices, performance and all other information required by 40 CFR 60 or 75 recorded in a permanent form suitable for inspection. The file shall be retained for at least five (5) years following the date of such measurement, maintenance, reports, and records. [PSD permit (SJ 98-01), X.H.1] Federally Enforceable Through Title V Permit

68. Recordkeeping and Reporting: The Permittee shall maintain an operating log for each combustion turbine, which contains at a minimum, the following information: the start and finish times for all startup, shutdown and recommissioning periods. [PSD permit (SJ 98-01), X.H.3] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

69. Recordkeeping and Reporting: The permittee shall submit a written report of all excess emissions to EPA (Attn: AIR-5) for every calendar quarter. The report shall include the following: a. The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions; b. Specific identification of each period of excess emissions that occurs during startups, shutdown, recommissioning, and malfunctions of the engine exhaust systems. The nature and cause of any malfunction (if known) and the corrective action taken or preventative measures adopted shall also be reported; c. The date and time identifying each period during which a CEMS was inoperative, repaired, or adjusted, except for zero and span checks, and the nature of the system repairs or adjustments; d. When no excess emissions have occurred or the CEMS have not been inoperative, repaired, or adjusted, such information shall be stated in the report; e. Excess emissions shall be defined as any 1-hour period during which the average emissions of NOx, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.a of the PSD permit; f. Excess emissions shall be defined as any 3-hour period during which the average emissions of CO, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.b of the PSD permit. [PSD permit (SJ 98-01), X.H.4] Federally Enforceable Through Title V Permit

70. Recordkeeping and Reporting: The facility is subject to the recordkeeping and reporting requirements of the applicable New Source Performance Standards (NSPS) - 40 CFR Part 60, as described in this permit. [PSD permit (SJ 98-01), X.H.5] Federally Enforceable Through Title V Permit

71. New Source Performance Standards: The facility's combustion turbines are subject to the federal New Source Performance Standards (NSPS) - 40 CFR Part 60, Subpart GG, as well as the General Provisions of Subpart A. The owner/operator shall meet the applicable requirements of the aforementioned NSPS Subparts. [PSD permit (SJ 98-01), X.I] Federally Enforceable Through Title V Permit

72. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: District Rule 4801 and Kern County Rule 407 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

73. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.332, 60.333 (a) and (b); 40 CFR 60.334(a), (b)(2), (c), and 40 CFR 60.335(b); District Rule 4703 (as amended 9/20/07), Sections 5.1.1, 5.2, 6.1, 6.3.1, 6.3.3, 6.4, 6.4.5, and 6.4.6 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

74. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.7(b), 60.8, 60.8(d), 60.13, and 60.13(b); District Rules 1080 (as amended 12/17/92), Sections 6.3, 6.4, 6.5, 7.0, 7.1, 7.2, 7.3, 8.0, 9.0, 10.0, and 11.0; and 1081 (as amended 12/16/93) as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

75. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the applicable requirements of District Rule 4201 (as amended 12/17/92). A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

76. {2256} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.1] Federally Enforceable Through Title V Permit

77. Gas turbine engine exhaust shall be equipped with an additional continuous NOx analyzer located upstream of the SCR unit for purposes of monitoring ammonia slip (Ammonia Slip NOx Analyzer). This analyzer and shall be capable of monitoring NOx concentration at this location during startups and shutdowns as well as normal operating conditions. [District Rule 4102]

78. The Ammonia Slip NOx Analyzer shall conform to the specifications of Section 6.0, Performance Specification 2, 40 CFR 60, Appendix B. [District Rule 4102]

79. Calibration drift (CD) assessment for the Ammonia Slip NOx Analyzer shall be performed in accordance with requirements specified in section 4 of Appendix F to 40 CFR Part 60. [District Rule 4102]

80. A Cylinder Gas Audit (CGA) of the Ammonia Slip NOx Analyzer shall be performed each quarter in accordance with the procedures of specified in section 5 of Appendix F to 40 CFR Part 60. [District Rule 4102]

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CONDITIONS CONTINUE ON NEXT PAGE

81. Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required by this permit, the Ammonia Slip NOx Analyzer shall be in continuous operation. [District Rule 4102]

82. The Ammonia Slip NOx Analyzer shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. [District Rule 4102]

83. Emission data from the Ammonia Slip NOx Analyzer, including the calculated ammonia slip, shall be obtained for at least 18 hours in at least 22 out of 30 successive gas turbine operating days. [District Rule 4102]

84. Notification and record keeping for the Ammonia Slip NOx Analyzer shall be in accordance with the requirements specified in 40 CFR 60.7. [District Rule 4102]

85. An excess ammonia emissions and monitoring system performance report for the Ammonia Slip NOx Analyzer, in accordance with the requirements specified in 40 CFR 60.7, shall be submitted to the APCO for each calendar quarter. [District Rule 4102]

86. Although specific sections of 40 CFR 60 are referenced for convenience in permit conditions for the Ammonia Slip NOx Analyzer, the equipment is not subject to federal enforcement or other federal monitoring, reporting or recordkeeping requirements. [District Rule 4102]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

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PERMIT NO: S-3412-3-19 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: LA PALOMA GENERATING CO LLC
MAILING ADDRESS: PO BOX 175
MCKITTRICK, CA 93251

LOCATION: 1760 W SKYLINE ROAD
MCKITTRICK, CA 93251

SECTION: NE27 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:
MODIFICATION OF ABB GT-24 NATURAL GAS FIRED COMBINED CYCLE GAS TURBINE ENGINE/ELECTRICAL GENERATOR #3 WITH DRY LOW NOX COMBUSTORS, STEAM POWER AUGMENTATION, SELECTIVE CATALYTIC REDUCTION, STEAM TURBINE, AND ELECTRICAL GENERATOR (262 MW NOMINAL RATING): INSTALL INLET FOGGER

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Gas turbine engine and generator lube oil vents shall be equipped with mist eliminators. Visible emissions from lube oil vents shall not exceed 5% opacity, except for three minutes in any hour. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The gas turbine engine shall be equipped with continuously recording fuel gas flowmeter. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

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DAVID WARNER, Director of Permit Services
S-3412-3-19 : Dec 26 2012 10:15AM -- EDGEHILR : Joint Inspection NOT Required

5. Gas turbine engine exhaust shall be equipped with a continuously recording emissions monitor for NOx, CO and O2 downstream of the SCR catalyst dedicated to this unit. This continuous emission monitor shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as normal operating conditions. [District Rule 2201, 4703, and 40 CFR Part 64] Federally Enforceable Through Title V Permit

6. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201] Federally Enforceable Through Title V Permit

7. Heat recovery steam generator design shall provide space for additional selective catalytic reduction catalyst and oxidation catalyst if required to meet NOx and CO emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit

8. Permittee shall monitor and record exhaust gas temperature at selective catalytic reduction and oxidation catalyst inlets. [District Rule 2201] Federally Enforceable Through Title V Permit

9. Except during startup ignition, gas turbine engine shall be fired exclusively on pipeline quality natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry scf of natural gas. Gas turbine igniters may be fueled with propane or natural gas as part of startup sequence. Use of propane during startup process is limited to 6 grams per second, for a duration of no more than 30 seconds per startup on a design basis. Ignition occurs for the duration of time required to ignite and achieve a sustained flame on natural gas. [District Rule 2201, District Rule 4801, Kern County Rule 407, and PSD permit (SJ 98-01), X.C.1] Federally Enforceable Through Title V Permit

10. Recommissioning activities are defined as, but not limited to, all testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and LPGC contractors to insure safe and reliable steady state operation of the plant. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Recommissioning periods for this unit shall commence at first firing during major outage maintenance procedures. The recommissioning period shall terminate when the unit has completed performance testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers. [District Rule 2201] Federally Enforceable Through Title V Permit

12. Permittee shall notify the District at least seven (7) calendar days prior to start, and no more than 7 calendar days after the end, of recommissioning period for this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

13. Startup is defined as the period beginning with turbine light-off, or when the combustion turbine output is reduced to below minimum load (minimum megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the lb/hr and ppmv emission limits in Condition 21) to engage the steam turbine, until the unit again reaches minimum load. Shutdown is defined as the period beginning with initiation of turbine shutdown sequence and ending either with cessation of firing of the gas turbine engine, or when the unit ramps back up after an aborted shutdown and the unit reaches minimum load. Startup durations shall not exceed three hours, except during recommissioning periods for this unit, and shutdowns shall not exceed one hour, per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit

14. Permittee may inject ammonia during startup when the selective catalytic reduction system is at least 302 degrees F, however ammonia must be injected during startup when the selective catalytic reduction system catalyst temperature exceeds 500 degrees F and selective catalytic reduction system inlet concentrations exceed 2.5 ppmv NOx and as needed during normal operation to meet the NOx emissions limits. Permittee shall monitor and record catalyst temperature during periods of startup. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods. [District Rule 1081] Federally Enforceable Through Title V Permit

16. During startup and/or recommissioning of any gas turbine engines, combined emissions from the four gas turbine engines (S-3412-1, '-2, '-3 and '-4) heat recovery steam generator exhausts shall not exceed the following: NOx (as NO2): 900 lb and CO:2,500 lb in any one hour. [District Rule 2201] Federally Enforceable Through Title V Permit

17. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the combustors of this unit shall be tuned to minimize emissions. [District Rule 2201] Federally Enforceable Through Title V Permit

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18. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the oxidation catalyst shall be utilized to minimize CO emissions from this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

19. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the Selective Catalytic Reduction (SCR) system shall be utilized to control NOx whenever gas turbine operations are sufficiently stable and minimum catalyst temperature is achieved. [District Rule 2201] Federally Enforceable Through Title V Permit

20. During recommissioning periods for this unit, emission rates from gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 517.3 lb/hr and CO: 439.6 lb/hr. NOx (as NO2) emission limit is a one hour average. CO emission limit is a three-hour rolling average. [District Rule 2201] Federally Enforceable Through Title V Permit

21. Emission rates from the gas turbine engine heat recovery steam generator exhaust, except during startup and/or shutdown of this unit, shall not exceed the following: PM10: 11.0 lb/hr, SOx (as SO2): 3.89 lb/hr, NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15% O2, VOC (as propane): 2.80 lb/hr and 0.7 ppmvd @ 15% O2, and CO: 31.40 lb/hr and either 10 ppmvd @ 15% O2 at operating loads less than or equal to 221 MW (gross three hour average) or 6 ppmvd @ 15% O2 at operating loads greater than 221 MW (gross three hour average). NOx (as NO2) emission limit is a one hour average. All other emission limits are three hour rolling averages. NOx and CO emission limits shall not apply during recommissioning periods. [District Rule 2201; District Rule 4703, 5.1 and 5.2; and 40 CFR 60.332 and 60.333] Federally Enforceable Through Title V Permit

22. Except during recommissioning periods for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following on days when a startup or shutdown of the unit occurs: PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, NOx (as NO2): 511.4 lb/day, VOC: 139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

23. During recommissioning periods, for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 4,790.0 lb/day, PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, VOC:139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

24. Twelve month rolling average emissions from each gas turbine engine heat recovery steam generator exhaust shall not exceed the following PM10: 96,360 lb/year, SOx (as SO2): 30,517 lb/year, NOx (as NO2): 146,001 lb/year, VOC: 25,063 lb/year, and CO: 217,921 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

25. Ammonia emission rate shall not exceed 10 ppmvd @ 15% O2 on a twenty four hour rolling average. [District Rule 4102]

26. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O2 = ((a-(bxc/1,000,000)) x 1,0 00,000 / b) x d, where a = ammonia injection ratc(lb/hr)/17(lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol), c = change in measured NOx concentration ppmv at 15% O2 across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. [District Rule 4102]

27. Short term emissions shall be measured to demonstrate compliance with short term emission limits (lb/hr and ppmv @ 15% O2) annually by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm at full load conditions as follows - NOx: ppmvd @ 15% O2 and lb/hr, CO: ppmvd @ 15% O2 and lb/hr, VOC: ppmvd @ 15% O2 and lb/hr, PM10: lb/hr, and ammonia: ppmvd @ 15% O2. Sample collection for ammonia emissions shall be based on a two-hour or longer average. [District Rule 1081] Federally Enforceable Through Title V Permit

28. Cold start NOx, and CO mass emissions shall be measured, and measurement of cold start VOC emissions shall be performed for one of the gas turbines engines (S-3412-1, '2, '3, or '4) at least every seven years by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. [District Rule 1081] Federally Enforceable Through Title V Permit

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29. 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. [District Rules 1081; 2520, 9.3.2; and 2540] Federally Enforceable Through Title V Permit

30. The sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 3246. [District Rule 2520, 9.3.2 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit

31. Permittee shall maintain records of fuel sulfur content monitoring data and records documenting a constant supplier or source of fuel (a substantial change in fuel quality shall be considered a change in fuel supply). Permittee shall submit results of fuel sulfur content monitoring annually to the District with the Tittle V annual Certificate. Permittee shall notify the District of any changes in fuel supplier or source within 60 days of such change. [District Rules 1081 and 2540] Federally Enforceable Through Title V Permit

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

33. The following test methods shall be used NOx: EPA Method 7E or 20, CO: EPA method 10 or 10B, O2: EPA Method 3, 3A, or 20, VOC: EPA method 18, and PM10: EPA method 5 (front half and back half) or EPA methods 201A and 202. Alternative test methods as approved by the District and EPA may also be used to address the source testing requirements of this permit. [District Rules 1081 and 4703, 6.4; and 40 CFR 60.335] Federally Enforceable Through Title V Permit

34. Source testing for ammonia shall be performed using BAAQMD ST-1B. [District Rule 4102]

35. The permittee shall maintain hourly records of ammonia emission concentrations (ppmv @ 15% O2) [District Rule 4102]

36. The permittee shall maintain hourly records of NOx, and CO emission concentrations (ppmv @ 15% O2), and hourly, daily, and twelve month rolling average records of NOx and CO emissions. Compliance with the hourly, daily, and twelve month rolling average VOC emission limits shall be demonstrated by annual VOC source tests. [District Rule 2201] Federally Enforceable Through Title V Permit

37. The permittee shall maintain records of SOx lb/hr, lb/day, and lb/twelve month rolling average emission. SOx emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [District Rule 2201] Federally Enforceable Through Title V Permit

38. {2249} CEM cycling times shall be those specified in 40 CFR, Part 51, Appendix P, Sections 3.4, 3.4.1 and 3.4.2, or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the EPA. [District Rule 1080, 6.4] Federally Enforceable Through Title V Permit

39. {2250} The continuous NOx and O2 monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [District Rule 1080, 6.3, 6.5, 6.6 and 7.2] Federally Enforceable Through Title V Permit

40. {2251} The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary of data shall be in the form and the manner prescribed by the APCO. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit

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41. {2253} Operators of CEM systems installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; Applicable time and date of each period during which the CEM was inoperative, except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080, 8.0] Federally Enforceable Through Title V Permit

42. Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. Successive quarterly audits shall occur no closer than two months. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080, 6.2] Federally Enforceable Through Title V Permit

43. {2254} APCO or an authorized representative shall be allowed to inspect, as he or she determines to be necessary, the monitoring devices required by this rule to ensure that such devices are functioning properly. [District Rule 1080, 11.0] Federally Enforceable Through Title V Permit

44. Sulfur compound emissions shall not exceed 0.015% by volume at calculated at 15% O2 (150 ppmv @ 15% O2) on a dry basis averaged over 15 consecutive minutes. [District Rule 4801, Kern County Rule 407, and 40 CFR 60.333(a)] Federally Enforceable Through Title V Permit

45. {2270} All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device. [40 CFR 60.13(b)] Federally Enforceable Through Title V Permit

46. Continuous emission monitors shall meet applicable requirements of 40 CFR 60.13. [District Rule 4703, 5.1 & 6.4 and 40 CFR 60.13] Federally Enforceable Through Title V Permit

47. By two hours after turbine light-off the owner or operator shall not operate the gas turbine under load conditions, excluding shutdown or recommissioning periods for this unit, which results in the measured concentrations exceeding the following limits: 5 ppmv NOx (as NO2) @ 15% O2 or 200 ppmv CO @ 15% O2. [District Rule 4703, 5.1.2 and 5.2] Federally Enforceable Through Title V Permit

48. The HHV and LHV of the fuel combusted shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit

49. The owner or operator shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown, recommissioning period, malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEM system that has been installed pursuant to District Rule 1080 (as amended 12/17/92), emission measurements, total daily and annual hours of operation, hourly quantity of fuel used, and gross three hour average operating load. [District Rules 1080, 7.0; 2520, 9.3.2; 4703, 6.2; and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

50. {2271} The owner or 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, 9.4.2] Federally Enforceable Through Title V Permit

51. Air Pollution Control Equipment/Operation: The Permittee shall continuously operate and maintain the following air pollution controls and operations to minimize emissions at or below the levels specified in Conditions X-E of the PSD permit. The aforementioned "continuous" periods of operation do not include periods of startup, shutdown, and recommissioning, as defined in Section X.E.3, and X.F.1 of the PSD permit, or periods of malfunction as defined in Section IV.B.1 of the PSD permit. The Permittee shall continuously operate Selective Catalytic Reduction (SCR) systems on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 to meet the NOx emission limits specified in the PSD permit. The Permittee shall maintain an oxidation catalyst system on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 for control of CO. [PSD permit (SJ 98-01), X.B] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

52. Continuous Emission Monitoring: Prior to the date of startup and thereafter, the Permittee shall install, maintain, and operate the following Continuous Emissions Monitoring Systems (CEM) on each Combustion Turbine Generator (CTG) set exhaust vent stack: a. A continuous monitoring system to measure stack gas NOx concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B); and b. A continuous monitoring system to measure stack CO concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B). [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

53. Continuous Emission Monitoring: The permittee shall install, maintain, and operate a continuously recording fuel gas flow meter on each gas turbine engine. Exhaust gas flow rates shall then be determined from fuel gas flow using EPA Method 19. [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

54. Emission Limits: Emissions from each of the gas turbines (permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4) shall not exceed the following limits, except during periods of startup, shutdown and recommissioning: a. NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15 percent O2, based on a 1-hour average; b. 25.30 lb-CO/hr and 6 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads above 221 MW (gross 3-hour average) or 31.40 lb-CO/hr and 10 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads at or below 221 MW (gross 3-honr average). [PSD permit (SJ 98-01), X.E.1] Federally Enforceable Through Title V Permit

55. Emission Limits: Emission rates from each gas turbine shall not exceed the following daily and annual limits, including all periods of startup, shutdown and recommissioning, except NOx daily limits may be exceeded during recommissioning periods: NOx (as NO2): 511.4 lb/day, 73.0 tons/yr; CO: 1,873.0 lb/day, 109.0 tons/yr; SO2: 91.4 lb/day ,15.3 tons/yr. The annual limit is a 12-month rolling average. [PSD permit (SJ 98-01), X.E.2] Federally Enforceable Through Title V Permit

56. Emission Limits: The following definitions apply to the PSD permit: a. Startup of the combustion turbine is defined as the period beginning with combustion turbine light-off, until the unit reaches minimum load; b. Startup of the steam turbine is defined as the period when the combustion turbine output is reduced to below minimum load, in order to engage the steam turbine, until the unit again reaches minimum load; c. Shutdown is defined as the period beginning with initiation of combustion turbine shutdown sequence and ending either with the cessation of firing of the combustion turbine engine, or when the unit ramps back up after an aborted shutdown, until the unit reaches minimum load; d. Minimum load is defined as the minimum combustion turbine megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the ppmv emission limits in Condition X.E.1 of the PSD permit. [PSD permit (SJ 98-01), X.E.3] Federally Enforceable Through Title V Permit

57. Emission Limits: Each startup, whether of the combustion or steam turbine, shall not exceed three hours per occurrence. Each shutdown shall not exceed one hour per occnrrence. [PSD permit (SJ 98-01), X.E.4] Federally Enforceable Through Title V Permit

58. Recommissioning Periods: Recommissioning is defined as the period following an inspection, maintenance, repair and/or overhaul outage where the sonrce conducts operational and contractual testing and tuning to ensure the safe, efficient and reliable operation of the plant. A recommissioning period for any single outage shall not exceed 60 cumulative days of combustion turbine firing. [PSD permit (SJ 98-01), X.F.1] Federally Enforceable Through Title V Permit

59. Recommissioning Periods: Prior to commencing a recommissioning period, permittee shall perform a PSD applicability determination for the action(s) triggering the recommissioning period. [PSD permit (SJ 98-01), X.F.2] Federally Enforceable Through Title V Permit

60. Recommissioning Periods: Permittee shall maintain a copy of each PSD applicability determination on site. In addition, if the action(s) triggering the recommissioning period inclnde(s) the replacement of parts that could affect capacity or emissions, or an overhaul outage, then the permittee shall provide a copy of such determination to EPA prior to the start of the recommissioning period. [PSD permit (SJ 98-01), X.F.3] Federally Enforceable Through Title V Permit

61. Recommissioning Periods: Emission rates from each combustion turbine shall not exceed the following limits during a recommissioning period: 439.6 lbs-CO per hr; 517.3 lbs-NOx per hr; 4,790.0 lbs-NOx per day; 4,443.0 lbs-CO per recommissioning event; 8,545.0 lbs-NOx per recommissioning event. [PSD permit (SJ 98-01), X.F.4] Federally Enforceable Through Title V Permit

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62. Recommissioning Periods: The permittee shall maintain the following records for each recommissioning period: a. The number of days the combustion turbine is fired; b. Hourly and daily emissions, in lbs/hr and lbs/day, of NOx and CO emitted; c. Total emissions of NOx and CO emitted during the recommissioning period; d. Documentation of the testing and tuning activities which occurred during the recommissioning period. [PSD permit (SJ 98-01), X.F.5] Federally Enforceable Through Title V Permit

63. Recommissioning Periods: Pursuant to 40 CFR 60.8, within 30 days after the end of a recommissioning period, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. Upon written request and adequate justification from the Permittee, EPA may waive a performance test after a recommissioning period. [PSD permit (SJ 98-01), X.F.6] Federally Enforceable Through Title V Permit

64. Performance Tests: Pursuant to 40 CFR 60.8, within 60 days after achieving the maximum production rate of the affected emission units, but no later than 180 days after the initial startup of equipment (as defined in 40 CFR 60.2), and at such other times as specified by the Regional Administrator, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. The tests for NOx and CO shall be conducted on an annual basis and at the maximum operating capacity of the facilities being tested. Upon written request (Attn: AIR-5) from the Permittee, EPA may approve the conducting of performance tests at a lower specified production rate. After initial performance test and upon written request and adequate justification from the Permittee, EPA may waive a specified annual test for the facility. [PSD permit (SJ 98-01), X.G.1] Federally Enforceable Through Title V Permit

65. Performance Tests: Performance tests for the emissions of CO and NOx shall be conducted and the results reported in accordance with the test methods set forth in 40 CFR 60, Part 60.8 and Appendix A. The following test methods, or alternatives approved by EPA, shall be used: a. Performance tests of the emissions of CO shall be conducted using EPA Methods 1-4 and 10; b. Performance tests of the emissions of NOx shall be conducted using EPA Methods 1-4 and 7E; c. Natural gas sulfur content shall be tested according to ASTM D3246. The EPA (Attn: AIR-5) shall be notified in writing at least 30 days prior to such test to allow time for the 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 EPA 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 EPA. [PSD permit (SJ 98-01), X.G] Federally Enforceable Through Title V Permit

66. Performance Tests: For performance test purposes, sampling ports, platforms, and access shall be provided by the Permittee on the exhaust stack in accordance with 40 CFR 60.8(e). [PSD permit (SJ 98-01), X.G.4] Federally Enforceable Through Title V Permit

67. Recordkeeping and Reporting: A file shall be maintained of all measurements including continuous monitoring system evaluations, all continuous monitoring system or monitoring device calibration checks, adjustments and maintenance performed on these systems or devices, performance and all other information required by 40 CFR 60 or 75 recorded in a permanent form suitable for inspection. The file shall be retained for at least five (5) years following the date of such measurement, maintenance, reports, and records. [PSD permit (SJ 98-01), X.H.1] Federally Enforceable Through Title V Permit

68. Recordkeeping and Reporting: The Permittee shall maintain an operating log for each combustion turbine, which contains at a minimum, the following information: the start and finish times for all startup, shutdown and recommissioning periods. [PSD permit (SJ 98-01), X.H.3] Federally Enforceable Through Title V Permit

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69. Recordkeeping and Reporting: The permittee shall submit a written report of all excess emissions to EPA (Attn: AIR-5) for every calendar quarter. The report shall include the following: a. The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions; b. Specific identification of each period of excess emissions that occurs during startups, shutdown, recommissioning, and malfunctions of the engine exhaust systems. The nature and cause of any malfunction (if known) and the corrective action taken or preventative measures adopted shall also be reported; c. The date and time identifying each period during which a CEMS was inoperative, repaired, or adjusted, except for zero and span checks, and the nature of the system repairs or adjustments; d. When no excess emissions have occurred or the CEMS have not been inoperative, repaired, or adjusted, such information shall be stated in the report; e. Excess emissions shall be defined as any 1-hour period during which the average emissions of NOx, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.a of the PSD permit; f. Excess emissions shall be defined as any 3-hour period during which the average emissions of CO, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.b of the PSD permit. [PSD permit (SJ 98-01), X.H.4] Federally Enforceable Through Title V Permit

70. Recordkeeping and Reporting: The facility is subject to the recordkeeping and reporting requirements of the applicable New Source Performance Standards (NSPS) - 40 CFR Part 60, as described in this permit. [PSD permit (SJ 98-01), X.H.5] Federally Enforceable Through Title V Permit

71. New Source Performance Standards: The facility's combustion turbines are subject to the federal New Source Performance Standards (NSPS) - 40 CFR Part 60, Subpart GG, as well as the General Provisions of Subpart A. The owner/operator shall meet the applicable requirements of the aforementioned NSPS Subparts. [PSD permit (SJ 98-01), X.I] Federally Enforceable Through Title V Permit

72. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: District Rule 4801 and Kern County Rule 407 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

73. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.332, 60.333 (a) and (b); 40 CFR 60.334(a), (b)(2), (c), and 40 CFR 60.335(b); District Rule 4703 (as amended 9/20/07), Sections 5.1.1, 5.2, 6.1, 6.3.1, 6.3.3, 6.4, 6.4.5, and 6.4.6 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

74. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.7(b), 60.8, 60.8(d), 60.13, and 60.13(b); District Rules 1080 (as amended 12/17/92), Sections 6.3, 6.4, 6.5, 7.0, 7.1, 7.2, 7.3, 8.0, 9.0, 10.0, and 11.0; and 1081 (as amended 12/16/93) as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

75. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the applicable requirements of District Rule 4201 (as amended 12/17/92). A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

76. {2256} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.1] Federally Enforceable Through Title V Permit

77. Gas turbine engine exhaust shall be equipped with an additional continuous NOx analyzer located upstream of the SCR unit for purposes of monitoring ammonia slip (Ammonia Slip NOx Analyzer). This analyzer and shall be capable of monitoring NOx concentration at this location during startups and shutdowns as well as normal operating conditions. [District Rule 4102]

78. The Ammonia Slip NOx Analyzer shall conform to the specifications of Section 6.0, Performance Specification 2, 40 CFR 60, Appendix B. [District Rule 4102]

79. Calibration drift (CD) assessment for the Ammonia Slip NOx Analyzer shall be performed in accordance with requirements specified in section 4 of Appendix F to 40 CFR Part 60. [District Rule 4102]

80. A Cylinder Gas Audit (CGA) of the Ammonia Slip NOx Analyzer shall be performed each quarter in accordance with the procedures of specified in section 5 of Appendix F to 40 CFR Part 60. [District Rule 4102]

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CONDITIONS CONTINUE ON NEXT PAGE

81. Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required by this permit, the Ammonia Slip NOx Analyzer shall be in continuous operation. [District Rule 4102]

82. The Ammonia Slip NOx Analyzer shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. [District Rule 4102]

83. Emission data from the Ammonia Slip NOx Analyzer, including the calculated ammonia slip, shall be obtained for at least 18 hours in at least 22 out of 30 successive gas turbine operating days. [District Rule 4102]

84. Notification and record keeping for the Ammonia Slip NOx Analyzer shall be in accordance with the requirements specified in 40 CFR 60.7. [District Rule 4102]

85. An excess ammonia emissions and monitoring system performance report for the Ammonia Slip NOx Analyzer, in accordance with the requirements specified in 40 CFR 60.7, shall be submitted to the APCO for each calendar quarter. [District Rule 4102]

86. Although specific sections of 40 CFR 60 are referenced for convenience in permit conditions for the Ammonia Slip NOx Analyzer, the equipment is not subject to federal enforcement or other federal monitoring, reporting or recordkeeping requirements. [District Rule 4102]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

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PERMIT NO: S-3412-4-14 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: LA PALOMA GENERATING CO LLC
MAILING ADDRESS: PO BOX 175
MCKITTRICK, CA 93251

LOCATION: 1760 W SKYLINE ROAD
MCKITTRICK, CA 93251

SECTION: NE27 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:
MODIFICATION OF ABB GT-24 NATURAL GAS FIRED COMBINED CYCLE GAS TURBINE ENGINE/ELECTRICAL GENERATOR #4 WITH DRY LOW NOX COMBUSTORS, STEAM POWER AUGMENTATION, OXIDATION CATALYST, SELECTIVE CATALYTIC REDUCTION, STEAM TURBINE, AND ELECTRICAL GENERATOR (262 MW NOMINAL RATING): INSTALL AIR INLET FOGGER

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Gas turbine engine and generator lube oil vents shall be equipped with mist eliminators. Visible emissions from lube oil vents shall not exceed 5% opacity, except for three minutes in any hour. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The gas turbine engine shall be equipped with continuously recording fuel gas flowmeter. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

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DAVID WARNER, Director of Permit Services
S-3412-4-14 : Dec 26 2012 10:15AM – EDGEHILR : Joint Inspection NOT Required

5. Gas turbine engine exhaust shall be equipped with a continuously recording emissions monitor for NOx, CO and O2 downstream of the SCR catalyst dedicated to this unit. This continuous emission monitor shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as normal operating conditions. [District Rule 2201, 4703, and 40 CFR Part 64] Federally Enforceable Through Title V Permit

6. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201] Federally Enforceable Through Title V Permit

7. Heat recovery steam generator design shall provide space for additional selective catalytic reduction catalyst and oxidation catalyst if required to meet NOx and CO emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit

8. Permittee shall monitor and record exhaust gas temperature at selective catalytic reduction and oxidation catalyst inlets. [District Rule 2201] Federally Enforceable Through Title V Permit

9. Except during startup ignition, gas turbine engine shall be fired exclusively on pipeline quality natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry scf of natural gas. Gas turbine igniters may be fueled with propane or natural gas as part of startup sequence. Use of propane during startup process is limited to 6 grams per second, for a duration of no more than 30 seconds per startup on a design basis. Ignition occurs for the duration of time required to ignite and achieve a sustained flame on natural gas. [District Rule 2201, District Rule 4801, Kern County Rule 407, and PSD permit (SJ 98-01), X.C.1] Federally Enforceable Through Title V Permit

10. Recommissioning activities are defined as, but not limited to, all testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and LPGC contractors to insure safe and reliable steady state operation of the plant. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Recommissioning periods for this unit shall commence at first firing during major outage maintenance procedures. The recommissioning period shall terminate when the unit has completed performance testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers. [District Rule 2201] Federally Enforceable Through Title V Permit

12. Permittee shall notify the District at least seven (7) calendar days prior to start, and no more than 7 calendar days after the end, of recommissioning period for this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

13. Startup is defined as the period beginning with turbine light-off, or when the combustion turbine output is reduced to below minimum load (minimum megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the lb/hr and ppmv emission limits in Condition 21) to engage the steam turbine, until the unit again reaches minimum load. Shutdown is defined as the period beginning with initiation of turbine shutdown sequence and ending either with cessation of firing of the gas turbine engine, or when the unit ramps back up after an aborted shutdown and the unit reaches minimum load. Startup durations shall not exceed three hours, except during recommissioning periods for this unit, and shutdowns shall not exceed one hour, per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit

14. Permittee may inject ammonia during startup when the selective catalytic reduction system is at least 302 degrees F, however ammonia must be injected during startup when the selective catalytic reduction system catalyst temperature exceeds 500 degrees F and selective catalytic reduction system inlet concentrations exceed 2.5 ppmv NOx and as needed during normal operation to meet the NOx emissions limits. Permittee shall monitor and record catalyst temperature during periods of startup. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods. [District Rule 1081] Federally Enforceable Through Title V Permit

16. During startup and/or recommissioning of any gas turbine engines, combined emissions from the four gas turbine engines (S-3412-1, '-2, '-3 and '-4) heat recovery steam generator exhausts shall not exceed the following: NOx (as NO2): 900 lb and CO:2,500 lb in any one hour. [District Rule 2201] Federally Enforceable Through Title V Permit

17. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the combustors of this unit shall be tuned to minimize emissions. [District Rule 2201] Federally Enforceable Through Title V Permit

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18. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the oxidation catalyst shall be utilized to minimize CO emissions from this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

19. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the Selective Catalytic Reduction (SCR) system shall be utilized to control NOx whenever gas turbine operations are sufficiently stable and minimum catalyst temperature is achieved. [District Rule 2201] Federally Enforceable Through Title V Permit

20. During recommissioning periods for this unit, emission rates from gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 517.3 lb/hr and CO: 439.6 lb/hr. NOx (as NO2) emission limit is a one hour average. CO emission limit is a three-hour rolling average. [District Rule 2201] Federally Enforceable Through Title V Permit

21. Emission rates from the gas turbine engine heat recovery steam generator exhaust, except during startup and/or shutdown of this unit, shall not exceed the following: PM10: 11.0 lb/hr, SOx (as SO2): 3.89 lb/hr, NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15% O2, VOC (as propane): 2.80 lb/hr and 0.7 ppmvd @ 15% O2, and CO: 31.40 lb/hr and either 10 ppmvd @ 15% O2 at operating loads less than or equal to 221 MW (gross three hour average) or 6 ppmvd @ 15% O2 at operating loads greater than 221 MW (gross three hour average). NOx (as NO2) emission limit is a one hour average. All other emission limits are three hour rolling averages. NOx and CO emission limits shall not apply during recommissioning periods. [District Rule 2201; District Rule 4703, 5.1 and 5.2; and 40 CFR 60.332 and 60.333] Federally Enforceable Through Title V Permit

22. Except during recommissioning periods for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following on days when a startup or shutdown of the unit occurs: PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, NOx (as NO2): 511.4 lb/day, VOC: 139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

23. During recommissioning periods, for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 4,790.0 lb/day, PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, VOC:139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

24. Twelve month rolling average emissions from each gas turbine engine heat recovery steam generator exhaust shall not exceed the following PM10: 96,360 lb/year, SOx (as SO2): 30,517 lb/year, NOx (as NO2): 146,001 lb/year, VOC: 25,063 lb/year, and CO: 217,921 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

25. Ammonia emission rate shall not exceed 10 ppmvd @ 15% O2 on a twenty four hour rolling average. [District Rule 4102]

26. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O2 = ((a-(bxc/1,000,000)) x 1,0 00,000 / b) x d, where a = ammonia injection rate(lb/hr)/17(lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol), c = change in measured NOx concentration ppmv at 15% O2 across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. [District Rule 4102]

27. Short term emissions shall be measured to demonstrate compliance with short term emission limits (lb/hr and ppmv @ 15% O2) annually by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm at full load conditions as follows - NOx: ppmvd @ 15% O2 and lb/hr, CO: ppmvd @ 15% O2 and lb/hr, VOC: ppmvd @ 15% O2 and lb/hr, PM10: lb/hr, and ammonia: ppmvd @ 15% O2. Sample collection for ammonia emissions shall be based on a two-hour or longer average. [District Rule 1081] Federally Enforceable Through Title V Permit

28. Cold start NOx, and CO mass emissions shall be measured, and measurement of cold start VOC emissions shall be performed for one of the gas turbines engines (S-3412-1, '2, '3, or '4) at least every seven years by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. [District Rule 1081] Federally Enforceable Through Title V Permit

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29. 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. [District Rules 1081; 2520, 9.3.2; and 2540] Federally Enforceable Through Title V Permit

30. The sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 3246. [District Rule 2520, 9.3.2 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit

31. Permittee shall maintain records of fuel sulfur content monitoring data and records documenting a constant supplier or source of fuel (a substantial change in fuel quality shall be considered a change in fuel supply). Permittee shall submit results of fuel sulfur content monitoring annually to the District with the Tittle V annual Certificate. Permittee shall notify the District of any changes in fuel supplier or source within 60 days of such change. [District Rules 1081 and 2540] Federally Enforceable Through Title V Permit

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

33. The following test methods shall be used NOx: EPA Method 7E or 20, CO: EPA method 10 or 10B, O2: EPA Method 3, 3A, or 20, VOC: EPA method 18, and PM10: EPA metbod 5 (front half and back half) or EPA methods 201A and 202. Alternative test methods as approved by the District and EPA may also be used to address the source testing requirements of this permit. [District Rules 1081 and 4703, 6.4; and 40 CFR 60.335] Federally Enforceable Through Title V Permit

34. Source testing for ammonia shall be performed using BAAQMD ST-1B. [District Rule 4102]

35. The permittee shall maintain hourly records of ammonia emission concentrations (ppmv @ 15% O2) [District Rule 4102]

36. The permittee shall maintain hourly records of NOx, and CO emission concentrations (ppmv @ 15% O2), and hourly, daily, and twelve month rolling average records of NOx and CO emissions. Compliance with the hourly, daily, and twelve month rolling average VOC emission limits shall be demonstrated by annual VOC source tests. [District Rule 2201] Federally Enforceable Through Title V Permit

37. The permittee shall maintain records of SOx lb/hr, lb/day, and lb/twelve month rolling average emission. SOx emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [District Rule 2201] Federally Enforceable Through Title V Permit

38. {2249} CEM cycling times shall be those specified in 40 CFR, Part 51, Appendix P, Sections 3.4, 3.4.1 and 3.4.2, or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the EPA. [District Rule 1080, 6.4] Federally Enforceable Through Title V Permit

39. {2250} The continuous NOx and O2 monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [District Rule 1080, 6.3, 6.5, 6.6 and 7.2] Federally Enforceable Through Title V Permit

40. {2251} The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary of data shall be in the form and the manner prescribed by the APCO. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit

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41. {2253} Operators of CEM systems installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; Applicable time and date of each period during which the CEM was inoperative, except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080, 8.0] Federally Enforceable Through Title V Permit

42. Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. Successive quarterly audits shall occur no closer than two months. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080, 6.2] Federally Enforceable Through Title V Permit

43. {2254} APCO or an authorized representative shall be allowed to inspect, as he or she determines to be necessary, the monitoring devices required by this rule to ensure that such devices are functioning properly. [District Rule 1080, 11.0] Federally Enforceable Through Title V Permit

44. Sulfur compound emissions shall not exceed 0.015% by volume at calculated at 15% O2 (150 ppmv @ 15% O2) on a dry basis averaged over 15 consecutive minutes. [District Rule 4801, Kern County Rule 407, and 40 CFR 60.333(a)] Federally Enforceable Through Title V Permit

45. {2270} All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device. [40 CFR 60.13(b)] Federally Enforceable Through Title V Permit

46. Continuous emission monitors shall meet applicable requirements of 40 CFR 60.13. [District Rule 4703, 5.1 & 6.4 and 40 CFR 60.13] Federally Enforceable Through Title V Permit

47. By two hours after turbine light-off the owner or operator shall not operate the gas turbine under load conditions, excluding shutdown or recommissioning periods for this unit, which results in the measured concentrations exceeding the following limits: 5 ppmv NOx (as NO2) @ 15% O2 or 200 ppmv CO @ 15% O2. [District Rule 4703, 5.1.2 and 5.2] Federally Enforceable Through Title V Permit

48. The HHV and LHV of the fuel combusted shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit

49. The owner or operator shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown, recommissioning period, malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEM system that has been installed pursuant to District Rule 1080 (as amended 12/17/92), emission measurements, total daily and annual hours of operation, hourly quantity of fuel used, and gross three hour average operating load. [District Rules 1080, 7.0; 2520, 9.3.2; 4703, 6.2; and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

50. {2271} The owner or 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, 9.4.2] Federally Enforceable Through Title V Permit

51. Air Pollution Control Equipment/Operation: The Permittee shall continuously operate and maintain the following air pollution controls and operations to minimize emissions at or below the levels specified in Conditions X-E of the PSD permit. The aforementioned "continuous" periods of operation do not include periods of startup, shutdown, and recommissioning, as defined in Section X.E.3, and X.F.1 of the PSD permit, or periods of malfunction as defined in Section IV.B.1 of the PSD permit. The Permittee shall continuously operate Selective Catalytic Reduction (SCR) systems on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 to meet the NOx emission limits specified in the PSD permit. The Permittee shall maintain an oxidation catalyst system on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 for control of CO. [PSD permit (SJ 98-01), X.B] Federally Enforceable Through Title V Permit

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52. Continuous Emission Monitoring: Prior to the date of startup and thereafter, the Permittee shall install, maintain, and operate the following Continuous Emissions Monitoring Systems (CEM) on each Combustion Turbine Generator (CTG) set exhaust vent stack: a. A continuous monitoring system to measure stack gas NOx concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B); and b. A continuous monitoring system to measure stack CO concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B). [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

53. Continuous Emission Monitoring: The permittee shall install, maintain, and operate a continuously recording fuel gas flow meter on each gas turbine engine. Exhaust gas flow rates shall then be determined from fuel gas flow using EPA Method 19. [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

54. Emission Limits: Emissions from each of the gas turbines (permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4) shall not exceed the following limits, except during periods of startup, shutdown and recommissioning: a. NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15 percent O2, based on a 1-hour average; b. 25.30 lb-CO/hr and 6 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads above 221 MW (gross 3-hour average) or 31.40 lb-CO/hr and 10 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads at or below 221 MW (gross 3-hour average). [PSD permit (SJ 98-01), X.E.1] Federally Enforceable Through Title V Permit

55. Emission Limits: Emission rates from each gas turbine shall not exceed the following daily and annual limits, including all periods of startup, shutdown and recommissioning, except NOx daily limits may be exceeded during recommissioning periods: NOx (as NO2): 511.4 lb/day, 73.0 tons/yr; CO: 1,873.0 lb/day, 109.0 tons/yr; SO2: 91.4 lb/day ,15.3 tons/yr. The annual limit is a 12-month rolling average. [PSD permit (SJ 98-01), X.E.2] Federally Enforceable Through Title V Permit

56. Emission Limits: The following definitions apply to the PSD permit: a. Startup of the combustion turbine is defined as the period beginning with combustion turbine light-off, until the unit reaches minimum load; b. Startup of the steam turbine is defined as the period when the combustion turbine output is reduced to below minimum load, in order to engage the steam turbine, until the unit again reaches minimum load; c. Shutdown is defined as the period beginning with initiation of combustion turbine shutdown sequence and ending either with the cessation of firing of the combustion turbine engine, or when the unit ramps back up after an aborted shutdown, until the unit reaches minimum load; d. Minimum load is defined as the minimum combustion turbine megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the ppmv emission limits in Condition X.E.1 of the PSD permit. [PSD permit (SJ 98-01), X.E.3] Federally Enforceable Through Title V Permit

57. Emission Limits: Each startup, whether of the combustion or steam turbine, shall not exceed three hours per occurrence. Each shutdown shall not exceed one hour per occurrence. [PSD permit (SJ 98-01), X.E.4] Federally Enforceable Through Title V Permit

58. Recommissioning Periods: Recommissioning is defined as the period following an inspection, maintenance, repair and/or overhaul outage where the source conducts operational and contractual testing and tuning to ensure the safe, efficient and reliable operation of the plant. A recommissioning period for any single outage shall not exceed 60 cumulative days of combustion turbine firing. [PSD permit (SJ 98-01), X.F.1] Federally Enforceable Through Title V Permit

59. Recommissioning Periods: Prior to commencing a recommissioning period, permittee shall perform a PSD applicability determination for the action(s) triggering the recommissioning period. [PSD permit (SJ 98-01), X.F.2] Federally Enforceable Through Title V Permit

60. Recommissioning Periods: Permittee shall maintain a copy of each PSD applicability determination on site. In addition, if the action(s) triggering the recommissioning period include(s) the replacement of parts that could affect capacity or emissions, or an overhaul outage, then the permittee shall provide a copy of such determination to EPA prior to the start of the recommissioning period. [PSD permit (SJ 98-01), X.F.3] Federally Enforceable Through Title V Permit

61. Recommissioning Periods: Emission rates from each combustion turbine shall not exceed the following limits during a recommissioning period: 439.6 lbs-CO per hr; 517.3 lbs-NOx per hr; 4,790.0 lbs-NOx per day; 4,443.0 lbs-CO per recommissioning event; 8,545.0 lbs-NOx per recommissioning event. [PSD permit (SJ 98-01), X.F.4] Federally Enforceable Through Title V Permit

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62. Recommissioning Periods: The permittee shall maintain the following records for each recommissioning period: a. The number of days the combustion turbine is fired; b. Hourly and daily emissions, in lbs/hr and lbs/day, of NOx and CO emitted; c. Total emissions of NOx and CO emitted during the recommissioning period; d. Documentation of the testing and tuning activities which occurred during the recommissioning period. [PSD permit (SJ 98-01), X.F.5] Federally Enforceable Through Title V Permit

63. Recommissioning Periods: Pursuant to 40 CFR 60.8, within 30 days after the end of a recommissioning period, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. Upon written request and adequate justification from the Permittee, EPA may waive a performance test after a recommissioning period. [PSD permit (SJ 98-01), X.F.6] Federally Enforceable Through Title V Permit

64. Performance Tests: Pursuant to 40 CFR 60.8, within 60 days after achieving the maximum production rate of the affected emission units, but no later than 180 days after the initial startup of equipment (as defined in 40 CFR 60.2), and at such other times as specified by the Regional Administrator, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. The tests for NOx and CO shall be conducted on an annual basis and at the maximum operating capacity of the facilities being tested. Upon written request (Attn: AIR-5) from the Permittee, EPA may approve the conducting of performance tests at a lower specified production rate. After initial performance test and upon written request and adequate justification from the Permittee, EPA may waive a specified annual test for the facility. [PSD permit (SJ 98-01), X.G.1] Federally Enforceable Through Title V Permit

65. Performance Tests: Performance tests for the emissions of CO and NOx shall be conducted and the results reported in accordance with the test methods set forth in 40 CFR 60, Part 60.8 and Appendix A. The following test methods, or alternatives approved by EPA, shall be used: a. Performance tests of the emissions of CO shall be conducted using EPA Methods 1-4 and 10; b. Performance tests of the emissions of NOx shall be conducted using EPA Methods 1-4 and 7E; c. Natural gas sulfur content shall be tested according to ASTM D3246. The EPA (Attn: AIR-5) shall be notified in writing at least 30 days prior to such test to allow time for the 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 EPA 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 EPA. [PSD permit (SJ 98-01), X.G] Federally Enforceable Through Title V Permit

66. Performance Tests: For performance test purposes, sampling ports, platforms, and access shall be provided by the Permittee on the exhaust stack in accordance with 40 CFR 60.8(e). [PSD permit (SJ 98-01), X.G.4] Federally Enforceable Through Title V Permit

67. Recordkeeping and Reporting: A file shall be maintained of all measurements including continuous monitoring system evaluations, all continuous monitoring system or monitoring device calibration checks, adjustments and maintenance performed on these systems or devices, performance and all other information required by 40 CFR 60 or 75 recorded in a permanent form suitable for inspection. The file shall be retained for at least five (5) years following the date of such measurement, maintenance, reports, and records. [PSD permit (SJ 98-01), X.H.1] Federally Enforceable Through Title V Permit

68. Recordkeeping and Reporting: The Permittee shall maintain an operating log for each combustion turbine, which contains at a minimum, the following information: the start and finish times for all startup, shutdown and recommissioning periods. [PSD permit (SJ 98-01), X.H.3] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

69. Recordkeeping and Reporting: The permittee shall submit a written report of all excess emissions to EPA (Attn: AIR-5) for every calendar quarter. The report shall include the following: a. The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions; b. Specific identification of each period of excess emissions that occurs during startups, shutdown, recommissioning, and malfunctions of the engine exhaust systems. The nature and cause of any malfunction (if known) and the corrective action taken or preventative measures adopted shall also be reported; c. The date and time identifying each period during which a CEMS was inoperative, repaired, or adjusted, except for zero and span checks, and the nature of the system repairs or adjustments; d. When no excess emissions have occurred or the CEMS have not been inoperative, repaired, or adjusted, such information shall be stated in the report; e. Excess emissions shall be defined as any 1-hour period during which the average emissions of NOx, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.a of the PSD permit; f. Excess emissions shall be defined as any 3-hour period during which the average emissions of CO, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.b of the PSD permit. [PSD permit (SJ 98-01), X.H.4] Federally Enforceable Through Title V Permit

70. Recordkeeping and Reporting: The facility is subject to the recordkeeping and reporting requirements of the applicable New Source Performance Standards (NSPS) - 40 CFR Part 60, as described in this permit. [PSD permit (SJ 98-01), X.H.5] Federally Enforceable Through Title V Permit

71. New Source Performance Standards: The facility's combustion turbines are subject to the federal New Source Performance Standards (NSPS) - 40 CFR Part 60, Subpart GG, as well as the General Provisions of Subpart A. The owner/operator shall meet the applicable requirements of the aforementioned NSPS Subparts. [PSD permit (SJ 98-01), X.I] Federally Enforceable Through Title V Permit

72. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: District Rule 4801 and Kern County Rule 407 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

73. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.332, 60.333 (a) and (b); 40 CFR 60.334(a), (b)(2), (c), and 40 CFR 60.335(b); District Rule 4703 (as amended 9/20/07), Sections 5.1.1, 5.2, 6.1, 6.3.1, 6.3.3, 6.4, 6.4.5, and 6.4.6 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

74. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.7(b), 60.8, 60.8(d), 60.13, and 60.13(b); District Rules 1080 (as amended 12/17/92), Sections 6.3, 6.4, 6.5, 7.0, 7.1, 7.2, 7.3, 8.0, 9.0, 10.0, and 11.0; and 1081 (as amended 12/16/93) as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

75. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the applicable requirements of District Rule 4201 (as amended 12/17/92). A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

76. {2256} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.1] Federally Enforceable Through Title V Permit

77. Gas turbine engine exhaust shall be equipped with an additional continuous NOx analyzer located upstream of the SCR unit for purposes of monitoring ammonia slip (Ammonia Slip NOx Analyzer). This analyzer and shall be capable of monitoring NOx concentration at this location during startups and shutdowns as well as normal operating conditions. [District Rule 4102]

78. The Ammonia Slip NOx Analyzer shall conform to the specifications of Section 6.0, Performance Specification 2, 40 CFR 60, Appendix B. [District Rule 4102]

79. Calibration drift (CD) assessment for the Ammonia Slip NOx Analyzer shall be performed in accordance with requirements specified in section 4 of Appendix F to 40 CFR Part 60. [District Rule 4102]

80. A Cylinder Gas Audit (CGA) of the Ammonia Slip NOx Analyzer shall be performed each quarter in accordance with the procedures of specified in section 5 of Appendix F to 40 CFR Part 60. [District Rule 4102]

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CONDITIONS CONTINUE ON NEXT PAGE

81. Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required by this permit, the Ammonia Slip NOx Analyzer shall be in continuous operation. [District Rule 4102]

82. The Ammonia Slip NOx Analyzer shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. [District Rule 4102]

83. Emission data from the Ammonia Slip NOx Analyzer, including the calculated ammonia slip, shall be obtained for at least 18 hours in at least 22 out of 30 successive gas turbine operating days. [District Rule 4102]

84. Notification and record keeping for the Ammonia Slip NOx Analyzer shall be in accordance with the requirements specified in 40 CFR 60.7. [District Rule 4102]

85. An excess ammonia emissions and monitoring system performance report for the Ammonia Slip NOx Analyzer, in accordance with the requirements specified in 40 CFR 60.7, shall be submitted to the APCO for each calendar quarter. [District Rule 4102]

86. Although specific sections of 40 CFR 60 are referenced for convenience in permit conditions for the Ammonia Slip NOx Analyzer, the equipment is not subject to federal enforcement or other federal monitoring, reporting or recordkeeping requirements. [District Rule 4102]

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ATTACHMENT 3

Final ATCs issued by SJVAPD on January 24, 2013

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

AUTHORITY TO CONSTRUCT

PERMIT NO: S-3412-1-18 **ISSUANCE DATE:** 01/24/2013

LEGAL OWNER OR OPERATOR: LA PALOMA GENERATING CO LLC
MAILING ADDRESS: PO BOX 175
MCKITTRICK, CA 93251

LOCATION: 1760 W SKYLINE ROAD
MCKITTRICK, CA 93251

SECTION: NE27 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:
MODIFICATION OF ABB GT-24 NATURAL GAS FIRED COMBINED CYCLE GAS TURBINE ENGINE/ELECTRICAL GENERATOR #1 WITH DRY LOW NOX COMBUSTORS, STEAM POWER AUGMENTATION, SELECTIVE CATALYTIC REDUCTION, STEAM TURBINE, AND ELECTRICAL GENERATOR (262 MW NOMINAL RATING):INSTALL AIR INLET FOGGER

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Gas turbine engine and generator lube oil vents shall be equipped with mist eliminators. Visible emissions from lube oil vents shall not exceed 5% opacity, except for three minutes in any hour. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The gas turbine engine shall be equipped with continuously recording fuel gas flowmeter. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
S-3412-1-18 : Jan 24 2013 4:22PM -- EDGEHILR : Joint Inspection NOT Required

5. Gas turbine engine exhaust shall be equipped with a continuously recording emissions monitor for NOx, CO and O2 downstream of the SCR catalyst dedicated to this unit. This continuous emission monitor shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as normal operating conditions. [District Rule 2201, 4703, and 40 CFR Part 64] Federally Enforceable Through Title V Permit

6. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201] Federally Enforceable Through Title V Permit

7. Heat recovery steam generator design shall provide space for additional selective catalytic reduction catalyst and oxidation catalyst if required to meet NOx and CO emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit

8. Permittee shall monitor and record exhaust gas temperature at selective catalytic reduction and oxidation catalyst inlets. [District Rule 2201] Federally Enforceable Through Title V Permit

9. Except during startup ignition, gas turbine engine shall be fired exclusively on pipeline quality natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry scf of natural gas. Gas turbine igniters may be fueled with propane or natural gas as part of startup sequence. Use of propane during startup process is limited to 6 grams per second, for a duration of no more than 30 seconds per startup on a design basis. Ignition occurs for the duration of time required to ignite and achieve a sustained flame on natural gas. [District Rule 2201, District Rule 4801, Kern County Rule 407, and PSD permit (SJ 98-01), X.C.1] Federally Enforceable Through Title V Permit

10. Recommissioning activities are defined as, but not limited to, all testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and LPGC contractors to insure safe and reliable steady state operation of the plant. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Recommissioning periods for this unit shall commence at first firing during major outage maintenance procedures. The recommissioning period shall terminate when the unit has completed performance testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers. [District Rule 2201] Federally Enforceable Through Title V Permit

12. Permittee shall notify the District at least seven (7) calendar days prior to start, and no more than 7 calendar days after the end, of recommissioning period for this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

13. Startup is defined as the period beginning with turbine light-off, or when the combustion turbine output is reduced to below minimum load (minimum megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the lb/hr and ppmv emission limits in Condition 21) to engage the steam turbine, until the unit again reaches minimum load. Shutdown is defined as the period beginning with initiation of turbine shutdown sequence and ending either with cessation of firing of the gas turbine engine, or when the unit ramps back up after an aborted shutdown and the unit reaches minimum load. Startup durations shall not exceed three hours, except during recommissioning periods for this unit, and shutdowns shall not exceed one hour, per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit

14. Permittee may inject ammonia during startup when the selective catalytic reduction system is at least 302 degrees F, however ammonia must be injected during startup when the selective catalytic reduction system catalyst temperature exceeds 500 degrees F and selective catalytic reduction system inlet concentrations exceed 2.5 ppmv NOx and as needed during normal operation to meet the NOx emissions limits. Permittee shall monitor and record catalyst temperature during periods of startup. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods. [District Rule 1081] Federally Enforceable Through Title V Permit

16. During startup and/or recommissioning of any gas turbine engines, combined emissions from the four gas turbine engines (S-3412-1, '-2, '-3 and '-4) heat recovery steam generator exhausts shall not exceed the following: NOx (as NO2): 900 lb and CO:2,500 lb in any one hour. [District Rule 2201] Federally Enforceable Through Title V Permit

17. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the combustors of this unit shall be tuned to minimize emissions. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

18. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the oxidation catalyst shall be utilized to minimize CO emissions from this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

19. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the Selective Catalytic Reduction (SCR) system shall be utilized to control NOx whenever gas turbine operations are sufficiently stable and minimum catalyst temperature is achieved. [District Rule 2201] Federally Enforceable Through Title V Permit

20. During recommissioning periods for this unit, emission rates from gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 517.3 lb/hr and CO: 439.6 lb/hr. NOx (as NO2) emission limit is a one hour average. CO emission limit is a three-hour rolling average. [District Rule 2201] Federally Enforceable Through Title V Permit

21. Emission rates from the gas turbine engine heat recovery steam generator exhaust, except during startup and/or shutdown of this unit, shall not exceed the following: PM10: 11.0 lb/hr, SOx (as SO2): 3.89 lb/hr, NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15% O2, VOC (as propane): 2.80 lb/hr and 0.7 ppmvd @ 15% O2, and CO: 31.40 lb/hr and either 10 ppmvd @ 15% O2 at operating loads less than or equal to 221 MW (gross three hour average) or 6 ppmvd @ 15% O2 at operating loads greater than 221 MW (gross three hour average). NOx (as NO2) emission limit is a one hour average. All other emission limits are three hour rolling averages. NOx and CO emission limits shall not apply during recommissioning periods. [District Rule 2201; District Rule 4703, 5.1 and 5.2; and 40 CFR 60.332 and 60.333] Federally Enforceable Through Title V Permit

22. Except during recommissioning periods for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following on days when a startup or shutdown of the unit occurs: PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, NOx (as NO2): 511.4 lb/day, VOC: 139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

23. During recommissioning periods, for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 4,790.0 lb/day, PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, VOC:139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

24. Twelve month rolling average emissions from each gas turbine engine heat recovery steam generator exhaust shall not exceed the following PM10: 96,360 lb/year, SOx (as SO2): 30,517 lb/year, NOx (as NO2): 146,001 lb/year, VOC: 25,063 lb/year, and CO: 217,921 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

25. Ammonia emission rate shall not exceed 10 ppmvd @ 15% O2 on a twenty four hour rolling average. [District Rule 4102]

26. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O2 = ((a-(bxc/1,000,000)) x 1,0 00,000 / b) x d, where a = ammonia injection rate(lb/hr)/17(lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol), c = change in measured NOx concentration ppmv at 15% O2 across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. [District Rule 4102]

27. Short term emissions shall be measured to demonstrate compliance with short term emission limits (lb/hr and ppmv @ 15% O2) annually by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm at full load conditions as follows - NOx: ppmvd @ 15% O2 and lb/hr, CO: ppmvd @ 15% O2 and lb/hr, VOC: ppmvd @ 15% O2 and lb/hr, PM10: lb/hr, and ammonia: ppmvd @ 15% O2. Sample collection for ammonia emissions shall be based on a two-hour or longer average. [District Rule 1081] Federally Enforceable Through Title V Permit

28. Cold start NOx, and CO mass emissions shall be measured, and measurement of cold start VOC emissions shall be performed for one of the gas turbines engines (S-3412-1, '2, '3, or '4) at least every seven years by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. [District Rule 1081] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

29. 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. [District Rules 1081; 2520, 9.3.2; and 2540] Federally Enforceable Through Title V Permit

30. The sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 3246. [District Rule 2520, 9.3.2 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit

31. Permittee shall maintain records of fuel sulfur content monitoring data and records documenting a constant supplier or source of fuel (a substantial change in fuel quality shall be considered a change in fuel supply). Permittee shall submit results of fuel sulfur content monitoring annually to the District with the Title V Annual Certificate. Permittee shall notify the District of any changes in fuel supplier or source within 60 days of such change. [District Rules 1081 and 2540] Federally Enforceable Through Title V Permit

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

33. The following test methods shall be used NOx: EPA Method 7E or 20, CO: EPA method 10 or 10B, O2: EPA Method 3, 3A, or 20, VOC: EPA method 18, and PM10: EPA method 5 (front half and back half) or EPA methods 201A and 202. Alternative test methods as approved by the District and EPA may also be used to address the source testing requirements of this permit. [District Rules 1081 and 4703, 6.4; and 40 CFR 60.335] Federally Enforceable Through Title V Permit

34. Source testing for ammonia shall be performed using BAAQMD ST-1B. [District Rule 4102]

35. The permittee shall maintain hourly records of ammonia emission concentrations (ppmv @ 15% O2) [District Rule 4102]

36. The permittee shall maintain hourly records of NOx, and CO emission concentrations (ppmv @ 15% O2), and hourly, daily, and twelve month rolling average records of NOx and CO emissions. Compliance with the hourly, daily, and twelve month rolling average VOC emission limits shall be demonstrated by annual VOC source tests. [District Rule 2201] Federally Enforceable Through Title V Permit

37. The permittee shall maintain records of SOx lb/hr, lb/day, and lb/twelve month rolling average emission. SOx emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [District Rule 2201] Federally Enforceable Through Title V Permit

38. CEM cycling times shall be those specified in 40 CFR, Part 51, Appendix P, Sections 3.4, 3.4.1 and 3.4.2, or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the EPA. [District Rule 1080, 6.4] Federally Enforceable Through Title V Permit

39. The continuous NOx and O2 monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [District Rule 1080, 6.3, 6.5, 6.6 and 7.2] Federally Enforceable Through Title V Permit

40. The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary of data shall be in the form and the manner prescribed by the APCO. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

41. Operators of CEM systems installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; Applicable time and date of each period during which the CEM was inoperative, except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080, 8.0] Federally Enforceable Through Title V Permit

42. Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. Successive quarterly audits shall occur no closer than two months. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080, 6.2] Federally Enforceable Through Title V Permit

43. APCO or an authorized representative shall be allowed to inspect, as he or she determines to be necessary, the monitoring devices required by this rule to ensure that such devices are functioning properly. [District Rule 1080, 11.0] Federally Enforceable Through Title V Permit

44. Sulfur compound emissions shall not exceed 0.015% by volume at calculated at 15% O2 (150 ppmv @ 15% O2) on a dry basis averaged over 15 consecutive minutes. [District Rule 4801, Kern County Rule 407, and 40 CFR 60.333(a)] Federally Enforceable Through Title V Permit

45. All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device. [40 CFR 60.13(b)] Federally Enforceable Through Title V Permit

46. Continuous emission monitors shall meet applicable requirements of 40 CFR 60.13. [District Rule 4703, 5.1 & 6.4 and 40 CFR 60.13] Federally Enforceable Through Title V Permit

47. By two hours after turbine light-off the owner or operator shall not operate the gas turbine under load conditions, excluding shutdown or recommissioning periods for this unit, which results in the measured concentrations exceeding the following limits: 5 ppmv NOx (as NO2) @ 15% O2 or 200 ppmv CO @ 15% O2. [District Rule 4703, 5.1.2 and 5.2] Federally Enforceable Through Title V Permit

48. The HHV and LHV of the fuel combusted shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit

49. The owner or operator shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown, recommissioning period, malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEM system that has been installed pursuant to District Rule 1080 (as amended 12/17/92), emission measurements, total daily and annual hours of operation, hourly quantity of fuel used, and gross three hour average operating load. [District Rules 1080, 7.0; 2520, 9.3.2; 4703, 6.2; and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

50. The owner or 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, 9.4.2] Federally Enforceable Through Title V Permit

51. Air Pollution Control Equipment/Operation: The Permittee shall continuously operate and maintain the following air pollution controls and operations to minimize emissions at or below the levels specified in Conditions X-E of the PSD permit. The aforementioned "continuous" periods of operation do not include periods of startup, shutdown, and recommissioning, as defined in Section X.E.3, and X.F.1 of the PSD permit, or periods of malfunction as defined in Section IV.B.1 of the PSD permit. The Permittee shall continuously operate Selective Catalytic Reduction (SCR) systems on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 to meet the NOx emission limits specified in the PSD permit. The Permittee shall maintain an oxidation catalyst system on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 for control of CO. [PSD permit (SJ 98-01), X.B] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

52. Continuous Emission Monitoring: Prior to the date of startup and thereafter, the Permittee shall install, maintain, and operate the following Continuous Emissions Monitoring Systems (CEM) on each Combustion Turbine Generator (CTG) set exhaust vent stack: a. A continuous monitoring system to measure stack gas NOx concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B); and b. A continuous monitoring system to measure stack CO concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B). [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

53. Continuous Emission Monitoring: The permittee shall install, maintain, and operate a continuously recording fuel gas flow meter on each gas turbine engine. Exhaust gas flow rates shall then be determined from fuel gas flow using EPA Method 19. [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

54. Emission Limits: Emissions from each of the gas turbines (permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4) shall not exceed the following limits, except during periods of startup, shutdown and recommissioning: a. NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15 percent O2, based on a 1-hour average; b. 25.30 lb-CO/hr and 6 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads above 221 MW (gross 3-hour average) or 31.40 lb-CO/hr and 10 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads at or below 221 MW (gross 3-hour average). [PSD permit (SJ 98-01), X.E.1] Federally Enforceable Through Title V Permit

55. Emission Limits: Emission rates from each gas turbine shall not exceed the following daily and annual limits, including all periods of startup, shutdown and recommissioning, except NOx daily limits may be exceeded during recommissioning periods: NOx (as NO2): 511.4 lb/day, 73.0 tons/yr; CO: 1,873.0 lb/day, 109.0 tons/yr; SO2: 91.4 lb/day ,15.3 tons/yr. The annual limit is a 12-month rolling average. [PSD permit (SJ 98-01), X.E.2] Federally Enforceable Through Title V Permit

56. Emission Limits: The following definitions apply to the PSD permit: a. Startup of the combustion turbine is defined as the period beginning with combustion turbine light-off, until the unit reaches minimum load; b. Startup of the steam turbine is defined as the period when the combustion turbine output is reduced to below minimum load, in order to engage the steam turbine, until the unit again reaches minimum load; c. Shutdown is defined as the period beginning with initiation of combustion turbine shutdown sequence and ending either with the cessation of firing of the combustion turbine engine, or when the unit ramps back up after an aborted shutdown, until the unit reaches minimum load; d. Minimum load is defined as the minimum combustion turbine megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the ppmv emission limits in Condition X.E.1 of the PSD permit. [PSD permit (SJ 98-01), X.E.3] Federally Enforceable Through Title V Permit

57. Emission Limits: Each startup, whether of the combustion or steam turbine, shall not exceed three hours per occurrence. Each shutdown shall not exceed one hour per occurrence. [PSD permit (SJ 98-01), X.E.4] Federally Enforceable Through Title V Permit

58. Recommissioning Periods: Recommissioning is defined as the period following an inspection, maintenance, repair and/or overhaul outage where the source conducts operational and contractual testing and tuning to ensure the safe, efficient and reliable operation of the plant. A recommissioning period for any single outage shall not exceed 60 cumulative days of combustion turbine firing. [PSD permit (SJ 98-01), X.F.1] Federally Enforceable Through Title V Permit

59. Recommissioning Periods: Prior to commencing a recommissioning period, permittee shall perform a PSD applicability determination for the action(s) triggering the recommissioning period. [PSD permit (SJ 98-01), X.F.2] Federally Enforceable Through Title V Permit

60. Recommissioning Periods: Permittee shall maintain a copy of each PSD applicability determination on site. In addition, if the action(s) triggering the recommissioning period include(s) the replacement of parts that could affect capacity or emissions, or an overhaul outage, then the permittee shall provide a copy of such determination to EPA prior to the start of the recommissioning period. [PSD permit (SJ 98-01), X.F.3] Federally Enforceable Through Title V Permit

61. Recommissioning Periods: Emission rates from each combustion turbine shall not exceed the following limits during a recommissioning period: 439.6 lbs-CO per hr; 517.3 lbs-NOx per hr; 4,790.0 lbs-NOx per day; 4,443.0 lbs-CO per recommissioning event; 8,545.0 lbs-NOx per recommissioning event. [PSD permit (SJ 98-01), X.F.4] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

62. Recommissioning Periods: The permittee shall maintain the following records for each recommissioning period: a. The number of days the combustion turbine is fired; b. Hourly and daily emissions, in lbs/hr and lbs/day, of NOx and CO emitted; c. Total emissions of NOx and CO emitted during the recommissioning period; d. Documentation of the testing and tuning activities which occurred during the recommissioning period. [PSD permit (SJ 98-01), X.F.5] Federally Enforceable Through Title V Permit

63. Recommissioning Periods: Pursuant to 40 CFR 60.8, within 30 days after the end of a recommissioning period, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. Upon written request and adequate justification from the Permittee, EPA may waive a performance test after a recommissioning period. [PSD permit (SJ 98-01), X.F.6] Federally Enforceable Through Title V Permit

64. Performance Tests: Pursuant to 40 CFR 60.8, within 60 days after achieving the maximum production rate of the affected emission units, but no later than 180 days after the initial startup of equipment (as defined in 40 CFR 60.2), and at such other times as specified by the Regional Administrator, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. The tests for NOx and CO shall be conducted on an annual basis and at the maximum operating capacity of the facilities being tested. Upon written request (Attn: AIR-5) from the Permittee, EPA may approve the conducting of performance tests at a lower specified production rate. After initial performance test and upon written request and adequate justification from the Permittee, EPA may waive a specified annual test for the facility. [PSD permit (SJ 98-01), X.G.1] Federally Enforceable Through Title V Permit

65. Performance Tests: Performance tests for the emissions of CO and NOx shall be conducted and the results reported in accordance with the test methods set forth in 40 CFR 60, Part 60.8 and Appendix A. The following test methods, or alternatives approved by EPA, shall be used: a. Performance tests of the emissions of CO shall be conducted using EPA Methods 1-4 and 10; b. Performance tests of the emissions of NOx shall be conducted using EPA Methods 1-4 and 7E; c. Natural gas sulfur content shall be tested according to ASTM D3246. The EPA (Attn: AIR-5) shall be notified in writing at least 30 days prior to such test to allow time for the 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 EPA 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 EPA. [PSD permit (SJ 98-01), X.G] Federally Enforceable Through Title V Permit

66. Performance Tests: For performance test purposes, sampling ports, platforms, and access shall be provided by the Permittee on the exhaust stack in accordance with 40 CFR 60.8(e). [PSD permit (SJ 98-01), X.G.4] Federally Enforceable Through Title V Permit

67. Recordkeeping and Reporting: A file shall be maintained of all measurements including continuous monitoring system evaluations, all continuous monitoring system or monitoring device calibration checks, adjustments and maintenance performed on these systems or devices, performance and all other information required by 40 CFR 60 or 75 recorded in a permanent form suitable for inspection. The file shall be retained for at least five (5) years following the date of such measurement, maintenance, reports, and records. [PSD permit (SJ 98-01), X.H.1] Federally Enforceable Through Title V Permit

68. Recordkeeping and Reporting: The Permittee shall maintain an operating log for each combustion turbine, which contains at a minimum, the following information: the start and finish times for all startup, shutdown and recommissioning periods. [PSD permit (SJ 98-01), X.H.3] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

69. Recordkeeping and Reporting: The permittee shall submit a written report of all excess emissions to EPA (Attn: AIR-5) for every calendar quarter. The report shall include the following: a. The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions; b. Specific identification of each period of excess emissions that occurs during startups, shutdown, recommissioning, and malfunctions of the engine exhaust systems. The nature and cause of any malfunction (if known) and the corrective action taken or preventative measures adopted shall also be reported; c. The date and time identifying each period during which a CEMS was inoperative, repaired, or adjusted, except for zero and span checks, and the nature of the system repairs or adjustments; d. When no excess emissions have occurred or the CEMS have not been inoperative, repaired, or adjusted, such information shall be stated in the report; e. Excess emissions shall be defined as any 1-hour period during which the average emissions of NOx, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.a of the PSD permit; f. Excess emissions shall be defined as any 3-hour period during which the average emissions of CO, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.b of the PSD permit. [PSD permit (SJ 98-01), X.H.4] Federally Enforceable Through Title V Permit

70. Recordkeeping and Reporting: The facility is subject to the recordkeeping and reporting requirements of the applicable New Source Performance Standards (NSPS) - 40 CFR Part 60, as described in this permit. [PSD permit (SJ 98-01), X.H.5] Federally Enforceable Through Title V Permit

71. New Source Performance Standards: The facility's combustion turbines are subject to the federal New Source Performance Standards (NSPS) - 40 CFR Part 60, Subpart GG, as well as the General Provisions of Subpart A. The owner/operator shall meet the applicable requirements of the aforementioned NSPS Subparts. [PSD permit (SJ 98-01), X.I] Federally Enforceable Through Title V Permit

72. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: District Rule 4801 and Kern County Rule 407 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

73. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.332, 60.333 (a) and (b); 40 CFR 60.334(a), (b)(2), (c), and 40 CFR 60.335(b); District Rule 4703 (as amended 9/20/07), Sections 5.1.1, 5.2, 6.1, 6.3.1, 6.3.3, 6.4, 6.4.5, and 6.4.6 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

74. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.7(b), 60.8, 60.8(d), 60.13, and 60.13(b); District Rules 1080 (as amended 12/17/92), Sections 6.3, 6.4, 6.5, 7.0, 7.1, 7.2, 7.3, 8.0, 9.0, 10.0, and 11.0; and 1081 (as amended 12/16/93) as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

75. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the applicable requirements of District Rule 4201 (as amended 12/17/92). A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

76. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.1] Federally Enforceable Through Title V Permit

77. Gas turbine engine exhaust shall be equipped with an additional continuous NOx analyzer located upstream of the SCR unit for purposes of monitoring ammonia slip (Ammonia Slip NOx Analyzer). This analyzer and shall be capable of monitoring NOx concentration at this location during startups and shutdowns as well as normal operating conditions. [District Rule 4102]

78. The Ammonia Slip NOx Analyzer shall conform to the specifications of Section 6.0, Performance Specification 2, 40 CFR 60, Appendix B. [District Rule 4102]

79. Calibration drift (CD) assessment for the Ammonia Slip NOx Analyzer shall be performed in accordance with requirements specified in section 4 of Appendix F to 40 CFR Part 60. [District Rule 4102]

80. A Cylinder Gas Audit (CGA) of the Ammonia Slip NOx Analyzer shall be performed each quarter in accordance with the procedures of specified in section 5 of Appendix F to 40 CFR Part 60. [District Rule 4102]

CONDITIONS CONTINUE ON NEXT PAGE

81. Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required by this permit, the Ammonia Slip NOx Analyzer shall be in continuous operation. [District Rule 4102]

82. The Ammonia Slip NOx Analyzer shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. [District Rule 4102]

83. Emission data from the Ammonia Slip NOx Analyzer, including the calculated ammonia slip, shall be obtained for at least 18 hours in at least 22 out of 30 successive gas turbine operating days. [District Rule 4102]

84. Notification and record keeping for the Ammonia Slip NOx Analyzer shall be in accordance with the requirements specified in 40 CFR 60.7. [District Rule 4102]

85. An excess ammonia emissions and monitoring system performance report for the Ammonia Slip NOx Analyzer, in accordance with the requirements specified in 40 CFR 60.7, shall be submitted to the APCO for each calendar quarter. [District Rule 4102]

86. Although specific sections of 40 CFR 60 are referenced for convenience in permit conditions for the Ammonia Slip NOx Analyzer, the equipment is not subject to federal enforcement or other federal monitoring, reporting or recordkeeping requirements. [District Rule 4102]

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

AUTHORITY TO CONSTRUCT

PERMIT NO: S-3412-2-19 **ISSUANCE DATE:** 01/24/2013

LEGAL OWNER OR OPERATOR: LA PALOMA GENERATING CO LLC
MAILING ADDRESS: PO BOX 175
MCKITTRICK, CA 93251

LOCATION: 1760 W SKYLINE ROAD
MCKITTRICK, CA 93251

SECTION: NE27 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:
MODIFICATION OF ABB GT-24 NATURAL GAS FIRED COMBINED CYCLE GAS TURBINE ENGINE/ELECTRICAL GENERATOR #2 WITH DRY LOW NOX COMBUSTORS, STEAM POWER AUGMENTATION, SELECTIVE CATALYTIC REDUCTION, STEAM TURBINE AND ELECTRICAL GENERATOR (262 MW NOMINAL RATING): INSTALL AIR INLET FOGGER

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Gas turbine engine and generator lube oil vents shall be equipped with mist eliminators. Visible emissions from lube oil vents shall not exceed 5% opacity, except for three minutes in any hour. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The gas turbine engine shall be equipped with continuously recording fuel gas flowmeter. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
S-3412-2-19 : Jan 24 2013 4:22PM – EDGEHILR : Joint Inspection NOT Required

5. Gas turbine engine exhaust shall be equipped with a continuously recording emissions monitor for NOx, CO and O2 downstream of the SCR catalyst dedicated to this unit. This continuous emission monitor shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as normal operating conditions. [District Rule 2201, 4703, and 40 CFR Part 64] Federally Enforceable Through Title V Permit

6. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201] Federally Enforceable Through Title V Permit

7. Heat recovery steam generator design shall provide space for additional selective catalytic reduction catalyst and oxidation catalyst if required to meet NOx and CO emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit

8. Permittee shall monitor and record exhaust gas temperature at selective catalytic reduction and oxidation catalyst inlets. [District Rule 2201] Federally Enforceable Through Title V Permit

9. Except during startup ignition, gas turbine engine shall be fired exclusively on pipeline quality natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry scf of natural gas. Gas turbine igniters may be fueled with propane or natural gas as part of startup sequence. Use of propane during startup process is limited to 6 grams per second, for a duration of no more than 30 seconds per startup on a design basis. Ignition occurs for the duration of time required to ignite and achieve a sustained flame on natural gas. [District Rule 2201, District Rule 4801, Kern County Rule 407, and PSD permit (SJ 98-01), X.C.1] Federally Enforceable Through Title V Permit

10. Recommissioning activities are defined as, but not limited to, all testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and LPGC contractors to insure safe and reliable steady state operation of the plant. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Recommissioning periods for this unit shall commence at first firing during major outage maintenance procedures. The recommissioning period shall terminate when the unit has completed performance testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers. [District Rule 2201] Federally Enforceable Through Title V Permit

12. Permittee shall notify the District at least seven (7) calendar days prior to start, and no more than 7 calendar days after the end, of recommissioning period for this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

13. Startup is defined as the period beginning with turbine light-off, or when the combustion turbine output is reduced to below minimum load (minimum megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the lb/hr and ppmv emission limits in Condition 21) to engage the steam turbine, until the unit again reaches minimum load. Shutdown is defined as the period beginning with initiation of turbine shutdown sequence and ending either with cessation of firing of the gas turbine engine, or when the unit ramps back up after an aborted shutdown and the unit reaches minimum load. Startup durations shall not exceed three hours, except during recommissioning periods for this unit, and shutdowns shall not exceed one hour, per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit

14. Permittee may inject ammonia during startup when the selective catalytic reduction system is at least 302 degrees F, however ammonia must be injected during startup when the selective catalytic reduction system catalyst temperature exceeds 500 degrees F and selective catalytic reduction system inlet concentrations exceed 2.5 ppmv NOx and as needed during normal operation to meet the NOx emissions limits. Permittee shall monitor and record catalyst temperature during periods of startup. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods. [District Rule 1081] Federally Enforceable Through Title V Permit

16. During startup and/or recommissioning of any gas turbine engines, combined emissions from the four gas turbine engines (S-3412-1, '-2, '-3 and '-4) heat recovery steam generator exhausts shall not exceed the following: NOx (as NO2): 900 lb and CO:2,500 lb in any one hour. [District Rule 2201] Federally Enforceable Through Title V Permit

17. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the combustors of this unit shall be tuned to minimize emissions. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

18. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the oxidation catalyst shall be utilized to minimize CO emissions from this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

19. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the Selective Catalytic Reduction (SCR) system shall be utilized to control NOx whenever gas turbine operations are sufficiently stable and minimum catalyst temperature is achieved. [District Rule 2201] Federally Enforceable Through Title V Permit

20. During recommissioning periods for this unit, emission rates from gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 517.3 lb/hr and CO: 439.6 lb/hr. NOx (as NO2) emission limit is a one hour average. CO emission limit is a three-hour rolling average. [District Rule 2201] Federally Enforceable Through Title V Permit

21. Emission rates from the gas turbine engine heat recovery steam generator exhaust, except during startup and/or shutdown of this unit, shall not exceed the following: PM10: 11.0 lb/hr, SOx (as SO2): 3.89 lb/hr, NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15% O2, VOC (as propane): 2.80 lb/hr and 0.7 ppmvd @ 15% O2, and CO: 31.40 lb/hr and either 10 ppmvd @ 15% O2 at operating loads less than or equal to 221 MW (gross three hour average) or 6 ppmvd @ 15% O2 at operating loads greater than 221 MW (gross three hour average). NOx (as NO2) emission limit is a one hour average. All other emission limits are three hour rolling averages. NOx and CO emission limits shall not apply during recommissioning periods. [District Rule 2201; District Rule 4703, 5.1 and 5.2; and 40 CFR 60.332 and 60.333] Federally Enforceable Through Title V Permit

22. Except during recommissioning periods for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following on days when a startup or shutdown of the unit occurs: PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, NOx (as NO2): 511.4 lb/day, VOC: 139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

23. During recommissioning periods, for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 4,790.0 lb/day, PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, VOC:139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

24. Twelve month rolling average emissions from each gas turbine engine heat recovery steam generator exhaust shall not exceed the following PM10: 96,360 lb/year, SOx (as SO2): 30,517 lb/year, NOx (as NO2): 146,001 lb/year, VOC: 25,063 lb/year, and CO: 217,921 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

25. Ammonia emission rate shall not exceed 10 ppmvd @ 15% O2 on a twenty four hour rolling average. [District Rule 4102]

26. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O2 = ((a-(bxc/1,000,000)) x 1,0 00,000 / b) x d, where a = ammonia injection rate(lb/hr)/17(lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol), c = change in measured NOx concentration ppmv at 15% O2 across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. [District Rule 4102]

27. Short term emissions shall be measured to demonstrate compliance with short term emission limits (lb/hr and ppmv @ 15% O2) annually by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm at full load conditions as follows - NOx: ppmvd @ 15% O2 and lb/hr, CO: ppmvd @ 15% O2 and lb/hr, VOC: ppmvd @ 15% O2 and lb/hr, PM10: lb/hr, and ammonia: ppmvd @ 15% O2. Sample collection for ammonia emissions shall be based on a two-hour or longer average. [District Rule 1081] Federally Enforceable Through Title V Permit

28. Cold start NOx, and CO mass emissions shall be measured, and measurement of cold start VOC emissions shall be performed for one of the gas turbines engines (S-3412-1, '2, '3, or '4) at least every seven years by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. [District Rule 1081] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

29. 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. [District Rules 1081; 2520, 9.3.2; and 2540] Federally Enforceable Through Title V Permit

30. The sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 3246. [District Rule 2520, 9.3.2 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit

31. Permittee shall maintain records of fuel sulfur content monitoring data and records documenting a constant supplier or source of fuel (a substantial change in fuel quality shall be considered a change in fuel supply). Permittee shall submit results of fuel sulfur content monitoring annually to the District with the Tittle V annual Certificate. Permittee shall notify the District of any changes in fuel supplier or source within 60 days of such change. [District Rules 1081 and 2540] Federally Enforceable Through Title V Permit

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

33. The following test methods shall be used NOx: EPA Method 7E or 20, CO: EPA method 10 or 10B, O2: EPA Method 3, 3A, or 20, VOC: EPA method 18, and PM10: EPA method 5 (front half and back half) or EPA methods 201A and 202. Alternative test methods as approved by the District and EPA may also be used to address the source testing requirements of this permit. [District Rules 1081 and 4703, 6.4; and 40 CFR 60.335] Federally Enforceable Through Title V Permit

34. Source testing for ammonia shall be performed using BAAQMD ST-1B. [District Rule 4102]

35. The permittee shall maintain hourly records of ammonia emission concentrations (ppmv @ 15% O2) [District Rule 4102]

36. The permittee shall maintain hourly records of NOx, and CO emission concentrations (ppmv @ 15% O2), and hourly, daily, and twelve month rolling average records of NOx and CO emissions. Compliance with the hourly, daily, and twelve month rolling average VOC emission limits shall be demonstrated by annual VOC source tests. [District Rule 2201] Federally Enforceable Through Title V Permit

37. The permittee shall maintain records of SOx lb/hr, lb/day, and lb/twelve month rolling average emission. SOx emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [District Rule 2201] Federally Enforceable Through Title V Permit

38. CEM cycling times shall be those specified in 40 CFR, Part 51, Appendix P, Sections 3.4, 3.4.1 and 3.4.2, or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the EPA. [District Rule 1080, 6.4] Federally Enforceable Through Title V Permit

39. The continuous NOx and O2 monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [District Rule 1080, 6.3, 6.5, 6.6 and 7.2] Federally Enforceable Through Title V Permit

40. The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary of data shall be in the form and the manner prescribed by the APCO. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

41. Operators of CEM systems installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; Applicable time and date of each period during which the CEM was inoperative, except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080, 8.0] Federally Enforceable Through Title V Permit

42. Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. Successive quarterly audits shall occur no closer than two months. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080, 6.2] Federally Enforceable Through Title V Permit

43. APCO or an authorized representative shall be allowed to inspect, as he or she determines to be necessary, the monitoring devices required by this rule to ensure that such devices are functioning properly. [District Rule 1080, 11.0] Federally Enforceable Through Title V Permit

44. Sulfur compound emissions shall not exceed 0.015% by volume at calculated at 15% O2 (150 ppmv @ 15% O2) on a dry basis averaged over 15 consecutive minutes. [District Rule 4801, Kern County Rule 407, and 40 CFR 60.333(a)] Federally Enforceable Through Title V Permit

45. All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device. [40 CFR 60.13(b)] Federally Enforceable Through Title V Permit

46. Continuous emission monitors shall meet applicable requirements of 40 CFR 60.13. [District Rule 4703, 5.1 & 6.4 and 40 CFR 60.13] Federally Enforceable Through Title V Permit

47. By two hours after turbine light-off the owner or operator shall not operate the gas turbine under load conditions, excluding shutdown or recommissioning periods for this unit, which results in the measured concentrations exceeding the following limits: 5 ppmv NOx (as NO2) @ 15% O2 or 200 ppmv CO @ 15% O2. [District Rule 4703, 5.1.2 and 5.2] Federally Enforceable Through Title V Permit

48. The HHV and LHV of the fuel combusted shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit

49. The owner or operator shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown, recommissioning period, malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEM system that has been installed pursuant to District Rule 1080 (as amended 12/17/92), emission measurements, total daily and annual hours of operation, hourly quantity of fuel used, and gross three hour average operating load. [District Rules 1080, 7.0; 2520, 9.3.2; 4703, 6.2; and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

50. The owner or 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, 9.4.2] Federally Enforceable Through Title V Permit

51. Air Pollution Control Equipment/Operation: The Permittee shall continuously operate and maintain the following air pollution controls and operations to minimize emissions at or below the levels specified in Conditions X-E of the PSD permit. The aforementioned "continuous" periods of operation do not include periods of startup, shutdown, and recommissioning, as defined in Section X.E.3, and X.F.1 of the PSD permit, or periods of malfunction as defined in Section IV.B.1 of the PSD permit. The Permittee shall continuously operate Selective Catalytic Reduction (SCR) systems on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 to meet the NOx emission limits specified in the PSD permit. The Permittee shall maintain an oxidation catalyst system on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 for control of CO. [PSD permit (SJ 98-01), X.B] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

52. Continuous Emission Monitoring: Prior to the date of startup and thereafter, the Permittee shall install, maintain, and operate the following Continuous Emissions Monitoring Systems (CEM) on each Combustion Turbine Generator (CTG) set exhaust vent stack: a. A continuous monitoring system to measure stack gas NOx concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B); and b. A continuous monitoring system to measure stack CO concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B). [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

53. Continuous Emission Monitoring: The permittee shall install, maintain, and operate a continuously recording fuel gas flow meter on each gas turbine engine. Exhaust gas flow rates shall then be determined from fuel gas flow using EPA Method 19. [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

54. Emission Limits: Emissions from each of the gas turbines (permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4) shall not exceed the following limits, except during periods of startup, shutdown and recommissioning: a. NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15 percent O2, based on a 1-hour average; b. 25.30 lb-CO/hr and 6 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads above 221 MW (gross 3-hour average) or 31.40 lb-CO/hr and 10 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads at or below 221 MW (gross 3-hour average). [PSD permit (SJ 98-01), X.E.1] Federally Enforceable Through Title V Permit

55. Emission Limits: Emission rates from each gas turbine shall not exceed the following daily and annual limits, including all periods of startup, shutdown and recommissioning, except NOx daily limits may be exceeded during recommissioning periods: NOx (as NO2): 511.4 lb/day, 73.0 tons/yr; CO: 1,873.0 lb/day, 109.0 tons/yr; SO2: 91.4 lb/day ,15.3 tons/yr. The annual limit is a 12-month rolling average. [PSD permit (SJ 98-01), X.E.2] Federally Enforceable Through Title V Permit

56. Emission Limits: The following definitions apply to the PSD permit: a. Startup of the combustion turbine is defined as the period beginning with combustion turbine light-off, until the unit reaches minimum load; b. Startup of the steam turbine is defined as the period when the combustion turbine output is reduced to below minimum load, in order to engage the steam turbine, until the unit again reaches minimum load; c. Shutdown is defined as the period beginning with initiation of combustion turbine shutdown sequence and ending either with the cessation of firing of the combustion turbine engine, or when the unit ramps back up after an aborted shutdown, until the unit reaches minimum load; d. Minimum load is defined as the minimum combustion turbine megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the ppmv emission limits in Condition X.E.1 of the PSD permit. [PSD permit (SJ 98-01), X.E.3] Federally Enforceable Through Title V Permit

57. Emission Limits: Each startup, whether of the combustion or steam turbine, shall not exceed three hours per occurrence. Each shutdown shall not exceed one hour per occurrence. [PSD permit (SJ 98-01), X.E.4] Federally Enforceable Through Title V Permit

58. Recommissioning Periods: Recommissioning is defined as the period following an inspection, maintenance, repair and/or overhaul outage where the source conducts operational and contractual testing and tuning to ensure the safe, efficient and reliable operation of the plant. A recommissioning period for any single outage shall not exceed 60 cumulative days of combustion turbine firing. [PSD permit (SJ 98-01), X.F.1] Federally Enforceable Through Title V Permit

59. Recommissioning Periods: Prior to commencing a recommissioning period, permittee shall perform a PSD applicability determination for the action(s) triggering the recommissioning period. [PSD permit (SJ 98-01), X.F.2] Federally Enforceable Through Title V Permit

60. Recommissioning Periods: Permittee shall maintain a copy of each PSD applicability determination on site. In addition, if the action(s) triggering the recommissioning period include(s) the replacement of parts that could affect capacity or emissions, or an overhaul outage, then the permittee shall provide a copy of such determination to EPA prior to the start of the recommissioning period. [PSD permit (SJ 98-01), X.F.3] Federally Enforceable Through Title V Permit

61. Recommissioning Periods: Emission rates from each combustion turbine shall not exceed the following limits during a recommissioning period: 439.6 lbs-CO per hr; 517.3 lbs-NOx per hr; 4,790.0 lbs-NOx per day; 4,443.0 lbs-CO per recommissioning event; 8,545.0 lbs-NOx per recommissioning event. [PSD permit (SJ 98-01), X.F.4] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

62. Recommissioning Periods: The permittee shall maintain the following records for each recommissioning period: a. The number of days the combustion turbine is fired; b. Hourly and daily emissions, in lbs/hr and lbs/day, of NOx and CO emitted; c. Total emissions of NOx and CO emitted during the recommissioning period; d. Documentation of the testing and tuning activities which occurred during the recommissioning period. [PSD permit (SJ 98-01), X.F.5] Federally Enforceable Through Title V Permit

63. Recommissioning Periods: Pursuant to 40 CFR 60.8, within 30 days after the end of a recommissioning period, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. Upon written request and adequate justification from the Permittee, EPA may waive a performance test after a recommissioning period. [PSD permit (SJ 98-01), X.F.6] Federally Enforceable Through Title V Permit

64. Performance Tests: Pursuant to 40 CFR 60.8, within 60 days after achieving the maximum production rate of the affected emission units, but no later than 180 days after the initial startup of equipment (as defined in 40 CFR 60.2), and at such other times as specified by the Regional Administrator, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. The tests for NOx and CO shall be conducted on an annual basis and at the maximum operating capacity of the facilities being tested. Upon written request (Attn: AIR-5) from the Permittee, EPA may approve the conducting of performance tests at a lower specified production rate. After initial performance test and upon written request and adequate justification from the Permittee, EPA may waive a specified annual test for the facility. [PSD permit (SJ 98-01), X.G.1] Federally Enforceable Through Title V Permit

65. Performance Tests: Performance tests for the emissions of CO and NOx shall be conducted and the results reported in accordance with the test methods set forth in 40 CFR 60, Part 60.8 and Appendix A. The following test methods, or alternatives approved by EPA, shall be used: a. Performance tests of the emissions of CO shall be conducted using EPA Methods 1-4 and 10; b. Performance tests of the emissions of NOx shall be conducted using EPA Methods 1-4 and 7E; c. Natural gas sulfur content shall be tested according to ASTM D3246. The EPA (Attn: AIR-5) shall be notified in writing at least 30 days prior to such test to allow time for the 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 EPA 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 EPA. [PSD permit (SJ 98-01), X.G] Federally Enforceable Through Title V Permit

66. Performance Tests: For performance test purposes, sampling ports, platforms, and access shall be provided by the Permittee on the exhaust stack in accordance with 40 CFR 60.8(e). [PSD permit (SJ 98-01), X.G.4] Federally Enforceable Through Title V Permit

67. Recordkeeping and Reporting: A file shall be maintained of all measurements including continuous monitoring system evaluations, all continuous monitoring system or monitoring device calibration checks, adjustments and maintenance performed on these systems or devices, performance and all other information required by 40 CFR 60 or 75 recorded in a permanent form suitable for inspection. The file shall be retained for at least five (5) years following the date of such measurement, maintenance, reports, and records. [PSD permit (SJ 98-01), X.H.1] Federally Enforceable Through Title V Permit

68. Recordkeeping and Reporting: The Permittee shall maintain an operating log for each combustion turbine, which contains at a minimum, the following information: the start and finish times for all startup, shutdown and recommissioning periods. [PSD permit (SJ 98-01), X.H.3] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

69. Recordkeeping and Reporting: The permittee shall submit a written report of all excess emissions to EPA (Attn: AIR-5) for every calendar quarter. The report shall include the following: a. The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions; b. Specific identification of each period of excess emissions that occurs during startups, shutdown, recommissioning, and malfunctions of the engine exhaust systems. The nature and cause of any malfunction (if known) and the corrective action taken or preventative measures adopted shall also be reported; c. The date and time identifying each period during which a CEMS was inoperative, repaired, or adjusted, except for zero and span checks, and the nature of the system repairs or adjustments; d. When no excess emissions have occurred or the CEMS have not been inoperative, repaired, or adjusted, such information shall be stated in the report; e. Excess emissions shall be defined as any 1-hour period during which the average emissions of NOx, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.a of the PSD permit; f. Excess emissions shall be defined as any 3-hour period during which the average emissions of CO, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.b of the PSD permit. [PSD permit (SJ 98-01), X.H.4] Federally Enforceable Through Title V Permit

70. Recordkeeping and Reporting: The facility is subject to the recordkeeping and reporting requirements of the applicable New Source Performance Standards (NSPS) - 40 CFR Part 60, as described in this permit. [PSD permit (SJ 98-01), X.H.5] Federally Enforceable Through Title V Permit

71. New Source Performance Standards: The facility's combustion turbines are subject to the federal New Source Performance Standards (NSPS) - 40 CFR Part 60, Subpart GG, as well as the General Provisions of Subpart A. The owner/operator shall meet the applicable requirements of the aforementioned NSPS Subparts. [PSD permit (SJ 98-01), X.I] Federally Enforceable Through Title V Permit

72. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: District Rule 4801 and Kern County Rule 407 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

73. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.332, 60.333 (a) and (b); 40 CFR 60.334(a), (b)(2), (c), and 40 CFR 60.335(b); District Rule 4703 (as amended 9/20/07), Sections 5.1.1, 5.2, 6.1, 6.3.1, 6.3.3, 6.4, 6.4.5, and 6.4.6 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

74. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.7(b), 60.8, 60.8(d), 60.13, and 60.13(b); District Rules 1080 (as amended 12/17/92), Sections 6.3, 6.4, 6.5, 7.0, 7.1, 7.2, 7.3, 8.0, 9.0, 10.0, and 11.0; and 1081 (as amended 12/16/93) as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

75. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the applicable requirements of District Rule 4201 (as amended 12/17/92). A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

76. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.1] Federally Enforceable Through Title V Permit

77. Gas turbine engine exhaust shall be equipped with an additional continuous NOx analyzer located upstream of the SCR unit for purposes of monitoring ammonia slip (Ammonia Slip NOx Analyzer). This analyzer and shall be capable of monitoring NOx concentration at this location during startups and shutdowns as well as normal operating conditions. [District Rule 4102]

78. The Ammonia Slip NOx Analyzer shall conform to the specifications of Section 6.0, Performance Specification 2, 40 CFR 60, Appendix B. [District Rule 4102]

79. Calibration drift (CD) assessment for the Ammonia Slip NOx Analyzer shall be performed in accordance with requirements specified in section 4 of Appendix F to 40 CFR Part 60. [District Rule 4102]

80. A Cylinder Gas Audit (CGA) of the Ammonia Slip NOx Analyzer shall be performed each quarter in accordance with the procedures of specified in section 5 of Appendix F to 40 CFR Part 60. [District Rule 4102]

CONDITIONS CONTINUE ON NEXT PAGE

81. Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required by this permit, the Ammonia Slip NOx Analyzer shall be in continuous operation. [District Rule 4102]

82. The Ammonia Slip NOx Analyzer shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. [District Rule 4102]

83. Emission data from the Ammonia Slip NOx Analyzer, including the calculated ammonia slip, shall be obtained for at least 18 hours in at least 22 out of 30 successive gas turbine operating days. [District Rule 4102]

84. Notification and record keeping for the Ammonia Slip NOx Analyzer shall be in accordance with the requirements specified in 40 CFR 60.7. [District Rule 4102]

85. An excess ammonia emissions and monitoring system performance report for the Ammonia Slip NOx Analyzer, in accordance with the requirements specified in 40 CFR 60.7, shall be submitted to the APCO for each calendar quarter. [District Rule 4102]

86. Although specific sections of 40 CFR 60 are referenced for convenience in permit conditions for the Ammonia Slip NOx Analyzer, the equipment is not subject to federal enforcement or other federal monitoring, reporting or recordkeeping requirements. [District Rule 4102]

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

AUTHORITY TO CONSTRUCT

PERMIT NO: S-3412-3-19 **ISSUANCE DATE:** 01/24/2013

LEGAL OWNER OR OPERATOR: LA PALOMA GENERATING CO LLC
MAILING ADDRESS: PO BOX 175
MCKITTRICK, CA 93251

LOCATION: 1760 W SKYLINE ROAD
MCKITTRICK, CA 93251

SECTION: NE27 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:
MODIFICATION OF ABB GT-24 NATURAL GAS FIRED COMBINED CYCLE GAS TURBINE ENGINE/ELECTRICAL GENERATOR #3 WITH DRY LOW NOX COMBUSTORS, STEAM POWER AUGMENTATION, SELECTIVE CATALYTIC REDUCTION, STEAM TURBINE, AND ELECTRICAL GENERATOR (262 MW NOMINAL RATING): INSTALL INLET FOGGER

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Gas turbine engine and generator lube oil vents shall be equipped with mist eliminators. Visible emissions from lube oil vents shall not exceed 5% opacity, except for three minutes in any hour. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The gas turbine engine shall be equipped with continuously recording fuel gas flowmeter. [District Rule 2201] Federally Enforceable Through Title V Permit

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

Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
S-3412-3-19 : Jan 24 2013 4:22PM -- EDGEHILR : Joint Inspection NOT Required

5. Gas turbine engine exhaust shall be equipped with a continuously recording emissions monitor for NOx, CO and O2 downstream of the SCR catalyst dedicated to this unit. This continuous emission monitor shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as normal operating conditions. [District Rule 2201, 4703, and 40 CFR Part 64] Federally Enforceable Through Title V Permit

6. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201] Federally Enforceable Through Title V Permit

7. Heat recovery steam generator design shall provide space for additional selective catalytic reduction catalyst and oxidation catalyst if required to meet NOx and CO emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit

8. Permittee shall monitor and record exhaust gas temperature at selective catalytic reduction and oxidation catalyst inlets. [District Rule 2201] Federally Enforceable Through Title V Permit

9. Except during startup ignition, gas turbine engine shall be fired exclusively on pipeline quality natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry scf of natural gas. Gas turbine igniters may be fueled with propane or natural gas as part of startup sequence. Use of propane during startup process is limited to 6 grams per second, for a duration of no more than 30 seconds per startup on a design basis. Ignition occurs for the duration of time required to ignite and achieve a sustained flame on natural gas. [District Rule 2201, District Rule 4801, Kern County Rule 407, and PSD permit (SJ 98-01), X.C.1] Federally Enforceable Through Title V Permit

10. Recommissioning activities are defined as, but not limited to, all testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and LPGC contractors to insure safe and reliable steady state operation of the plant. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Recommissioning periods for this unit shall commence at first firing during major outage maintenance procedures. The recommissioning period shall terminate when the unit has completed performance testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers. [District Rule 2201] Federally Enforceable Through Title V Permit

12. Permittee shall notify the District at least seven (7) calendar days prior to start, and no more than 7 calendar days after the end, of recommissioning period for this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

13. Startup is defined as the period beginning with turbine light-off, or when the combustion turbine output is reduced to below minimum load (minimum megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the lb/hr and ppmv emission limits in Condition 21) to engage the steam turbine, until the unit again reaches minimum load. Shutdown is defined as the period beginning with initiation of turbine shutdown sequence and ending either with cessation of firing of the gas turbine engine, or when the unit ramps back up after an aborted shutdown and the unit reaches minimum load. Startup durations shall not exceed three hours, except during recommissioning periods for this unit, and shutdowns shall not exceed one hour, per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit

14. Permittee may inject ammonia during startup when the selective catalytic reduction system is at least 302 degrees F, however ammonia must be injected during startup when the selective catalytic reduction system catalyst temperature exceeds 500 degrees F and selective catalytic reduction system inlet concentrations exceed 2.5 ppmv NOx and as needed during normal operation to meet the NOx emissions limits. Permittee shall monitor and record catalyst temperature during periods of startup. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods. [District Rule 1081] Federally Enforceable Through Title V Permit

16. During startup and/or recommissioning of any gas turbine engines, combined emissions from the four gas turbine engines (S-3412-1, '-2, '-3 and '-4) heat recovery steam generator exhausts shall not exceed the following: NOx (as NO2): 900 lb and CO:2,500 lb in any one hour. [District Rule 2201] Federally Enforceable Through Title V Permit

17. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the combustors of this unit shall be tuned to minimize emissions. [District Rule 2201] Federally Enforceable Through Title V Permit

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18. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the oxidation catalyst shall be utilized to minimize CO emissions from this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

19. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the Selective Catalytic Reduction (SCR) system shall be utilized to control NOx whenever gas turbine operations are sufficiently stable and minimum catalyst temperature is achieved. [District Rule 2201] Federally Enforceable Through Title V Permit

20. During recommissioning periods for this unit, emission rates from gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 517.3 lb/hr and CO: 439.6 lb/hr. NOx (as NO2) emission limit is a one hour average. CO emission limit is a three-hour rolling average. [District Rule 2201] Federally Enforceable Through Title V Permit

21. Emission rates from the gas turbine engine heat recovery steam generator exhaust, except during startup and/or shutdown of this unit, shall not exceed the following: PM10: 11.0 lb/hr, SOx (as SO2): 3.89 lb/hr, NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15% O2, VOC (as propane): 2.80 lb/hr and 0.7 ppmvd @ 15% O2, and CO: 31.40 lb/hr and either 10 ppmvd @ 15% O2 at operating loads less than or equal to 221 MW (gross three hour average) or 6 ppmvd @ 15% O2 at operating loads greater than 221 MW (gross three hour average). NOx (as NO2) emission limit is a one hour average. All other emission limits are three hour rolling averages. NOx and CO emission limits shall not apply during recommissioning periods. [District Rule 2201; District Rule 4703, 5.1 and 5.2; and 40 CFR 60.332 and 60.333] Federally Enforceable Through Title V Permit

22. Except during recommissioning periods for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following on days when a startup or shutdown of the unit occurs: PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, NOx (as NO2): 511.4 lb/day, VOC: 139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

23. During recommissioning periods, for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 4,790.0 lb/day, PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, VOC:139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

24. Twelve month rolling average emissions from each gas turbine engine heat recovery steam generator exhaust shall not exceed the following PM10: 96,360 lb/year, SOx (as SO2): 30,517 lb/year, NOx (as NO2): 146,001 lb/year, VOC: 25,063 lb/year, and CO: 217,921 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

25. Ammonia emission rate shall not exceed 10 ppmvd @ 15% O2 on a twenty four hour rolling average. [District Rule 4102]

26. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O2 = ((a-(bxc/1,000,000)) x 1,0 00,000 / b) x d, where a = ammonia injection rate(lb/hr)/17(lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol), c = change in measured NOx concentration ppmv at 15% O2 across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. [District Rule 4102]

27. Short term emissions shall be measured to demonstrate compliance with short term emission limits (lb/hr and ppmv @ 15% O2) annually by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm at full load conditions as follows - NOx: ppmvd @ 15% O2 and lb/hr, CO: ppmvd @ 15% O2 and lb/hr, VOC: ppmvd @ 15% O2 and lb/hr, PM10: lb/hr, and ammonia: ppmvd @ 15% O2. Sample collection for ammonia emissions shall be based on a two-hour or longer average. [District Rule 1081] Federally Enforceable Through Title V Permit

28. Cold start NOx, and CO mass emissions shall be measured, and measurement of cold start VOC emissions shall be performed for one of the gas turbines engines (S-3412-1, '2, '3, or '4) at least every seven years by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. [District Rule 1081] Federally Enforceable Through Title V Permit

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29. 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. [District Rules 1081; 2520, 9.3.2; and 2540] Federally Enforceable Through Title V Permit

30. The sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 3246. [District Rule 2520, 9.3.2 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit

31. Permittee shall maintain records of fuel sulfur content monitoring data and records documenting a constant supplier or source of fuel (a substantial change in fuel quality shall be considered a change in fuel supply). Permittee shall submit results of fuel sulfur content monitoring annually to the District with the Tittle V annual Certificate. Permittee shall notify the District of any changes in fuel supplier or source within 60 days of such change. [District Rules 1081 and 2540] Federally Enforceable Through Title V Permit

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

33. The following test methods shall be used NOx: EPA Method 7E or 20, CO: EPA method 10 or 10B, O2: EPA Method 3, 3A, or 20, VOC: EPA method 18, and PM10: EPA method 5 (front half and back half) or EPA methods 201A and 202. Alternative test methods as approved by the District and EPA may also be used to address the source testing requirements of this permit. [District Rules 1081 and 4703, 6.4; and 40 CFR 60.335] Federally Enforceable Through Title V Permit

34. Source testing for ammonia shall be performed using BAAQMD ST-1B. [District Rule 4102]

35. The permittee shall maintain hourly records of ammonia emission concentrations (ppmv @ 15% O2) [District Rule 4102]

36. The permittee shall maintain hourly records of NOx, and CO emission concentrations (ppmv @ 15% O2), and hourly, daily, and twelve month rolling average records of NOx and CO emissions. Compliance with the hourly, daily, and twelve month rolling average VOC emission limits shall be demonstrated by annual VOC source tests. [District Rule 2201] Federally Enforceable Through Title V Permit

37. The permittee shall maintain records of SOx lb/hr, lb/day, and lb/twelve month rolling average emission. SOx emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [District Rule 2201] Federally Enforceable Through Title V Permit

38. CEM cycling times shall be those specified in 40 CFR, Part 51, Appendix P, Sections 3.4, 3.4.1 and 3.4.2, or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the EPA. [District Rule 1080, 6.4] Federally Enforceable Through Title V Permit

39. The continuous NOx and O2 monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [District Rule 1080, 6.3, 6.5, 6.6 and 7.2] Federally Enforceable Through Title V Permit

40. The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary of data shall be in the form and the manner prescribed by the APCO. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit

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41. Operators of CEM systems installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; Applicable time and date of each period during which the CEM was inoperative, except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080, 8.0] Federally Enforceable Through Title V Permit

42. Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. Successive quarterly audits shall occur no closer than two months. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080, 6.2] Federally Enforceable Through Title V Permit

43. APCO or an authorized representative shall be allowed to inspect, as he or she determines to be necessary, the monitoring devices required by this rule to ensure that such devices are functioning properly. [District Rule 1080, 11.0] Federally Enforceable Through Title V Permit

44. Sulfur compound emissions shall not exceed 0.015% by volume at calculated at 15% O2 (150 ppmv @ 15% O2) on a dry basis averaged over 15 consecutive minutes. [District Rule 4801, Kern County Rule 407, and 40 CFR 60.333(a)] Federally Enforceable Through Title V Permit

45. All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device. [40 CFR 60.13(b)] Federally Enforceable Through Title V Permit

46. Continuous emission monitors shall meet applicable requirements of 40 CFR 60.13. [District Rule 4703, 5.1 & 6.4 and 40 CFR 60.13] Federally Enforceable Through Title V Permit

47. By two hours after turbine light-off the owner or operator shall not operate the gas turbine under load conditions, excluding shutdown or recommissioning periods for this unit, which results in the measured concentrations exceeding the following limits: 5 ppmv NOx (as NO2) @ 15% O2 or 200 ppmv CO @ 15% O2. [District Rule 4703, 5.1.2 and 5.2] Federally Enforceable Through Title V Permit

48. The HHV and LHV of the fuel combusted shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit

49. The owner or operator shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown, recommissioning period, malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEM system that has been installed pursuant to District Rule 1080 (as amended 12/17/92), emission measurements, total daily and annual hours of operation, hourly quantity of fuel used, and gross three hour average operating load. [District Rules 1080, 7.0; 2520, 9.3.2; 4703, 6.2; and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

50. The owner or 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, 9.4.2] Federally Enforceable Through Title V Permit

51. Air Pollution Control Equipment/Operation: The Permittee shall continuously operate and maintain the following air pollution controls and operations to minimize emissions at or below the levels specified in Conditions X-E of the PSD permit. The aforementioned "continuous" periods of operation do not include periods of startup, shutdown, and recommissioning, as defined in Section X.E.3, and X.F.1 of the PSD permit, or periods of malfunction as defined in Section IV.B.1 of the PSD permit. The Permittee shall continuously operate Selective Catalytic Reduction (SCR) systems on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 to meet the NOx emission limits specified in the PSD permit. The Permittee shall maintain an oxidation catalyst system on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 for control of CO. [PSD permit (SJ 98-01), X.B] Federally Enforceable Through Title V Permit

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52. Continuous Emission Monitoring: Prior to the date of startup and thereafter, the Permittee shall install, maintain, and operate the following Continuous Emissions Monitoring Systems (CEM) on each Combustion Turbine Generator (CTG) set exhaust vent stack: a. A continuous monitoring system to measure stack gas NOx concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B); and b. A continuous monitoring system to measure stack CO concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B). [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

53. Continuous Emission Monitoring: The permittee shall install, maintain, and operate a continuously recording fuel gas flow meter on each gas turbine engine. Exhaust gas flow rates shall then be determined from fuel gas flow using EPA Method 19. [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

54. Emission Limits: Emissions from each of the gas turbines (permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4) shall not exceed the following limits, except during periods of startup, shutdown and recommissioning: a. NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15 percent O2, based on a 1-hour average; b. 25.30 lb-CO/hr and 6 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads above 221 MW (gross 3-hour average) or 31.40 lb-CO/hr and 10 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads at or below 221 MW (gross 3-hour average). [PSD permit (SJ 98-01), X.E.1] Federally Enforceable Through Title V Permit

55. Emission Limits: Emission rates from each gas turbine shall not exceed the following daily and annual limits, including all periods of startup, shutdown and recommissioning, except NOx daily limits may be exceeded during recommissioning periods: NOx (as NO2): 511.4 lb/day, 73.0 tons/yr; CO: 1,873.0 lb/day, 109.0 tons/yr; SO2: 91.4 lb/day ,15.3 tons/yr. The annual limit is a 12-month rolling average. [PSD permit (SJ 98-01), X.E.2] Federally Enforceable Through Title V Permit

56. Emission Limits: The following definitions apply to the PSD permit: a. Startup of the combustion turbine is defined as the period beginning with combustion turbine light-off, until the unit reaches minimum load; b. Startup of the steam turbine is defined as the period when the combustion turbine output is reduced to below minimum load, in order to engage the steam turbine, until the unit again reaches minimum load; c. Shutdown is defined as the period beginning with initiation of combustion turbine shutdown sequence and ending either with the cessation of firing of the combustion turbine engine, or when the unit ramps back up after an aborted shutdown, until the unit reaches minimum load; d. Minimum load is defined as the minimum combustion turbine megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the ppmv emission limits in Condition X.E.1 of the PSD permit. [PSD permit (SJ 98-01), X.E.3] Federally Enforceable Through Title V Permit

57. Emission Limits: Each startup, whether of the combustion or steam turbine, shall not exceed three hours per occurrence. Each shutdown shall not exceed one hour per occurrence. [PSD permit (SJ 98-01), X.E.4] Federally Enforceable Through Title V Permit

58. Recommissioning Periods: Recommissioning is defined as the period following an inspection, maintenance, repair and/or overhaul outage where the source conducts operational and contractual testing and tuning to ensure the safe, efficient and reliable operation of the plant. A recommissioning period for any single outage shall not exceed 60 cumulative days of combustion turbine firing. [PSD permit (SJ 98-01), X.F.1] Federally Enforceable Through Title V Permit

59. Recommissioning Periods: Prior to commencing a recommissioning period, permittee shall perform a PSD applicability determination for the action(s) triggering the recommissioning period. [PSD permit (SJ 98-01), X.F.2] Federally Enforceable Through Title V Permit

60. Recommissioning Periods: Permittee shall maintain a copy of each PSD applicability determination on site. In addition, if the action(s) triggering the recommissioning period include(s) the replacement of parts that could affect capacity or emissions, or an overhaul outage, then the permittee shall provide a copy of such determination to EPA prior to the start of the recommissioning period. [PSD permit (SJ 98-01), X.F.3] Federally Enforceable Through Title V Permit

61. Recommissioning Periods: Emission rates from each combustion turbine shall not exceed the following limits during a recommissioning period: 439.6 lbs-CO per hr; 517.3 lbs-NOx per hr; 4,790.0 lbs-NOx per day; 4,443.0 lbs-CO per recommissioning event; 8,545.0 lbs-NOx per recommissioning event. [PSD permit (SJ 98-01), X.F.4] Federally Enforceable Through Title V Permit

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62. Recommissioning Periods: The permittee shall maintain the following records for each recommissioning period: a. The number of days the combustion turbine is fired; b. Hourly and daily emissions, in lbs/hr and lbs/day, of NOx and CO emitted; c. Total emissions of NOx and CO emitted during the recommissioning period; d. Documentation of the testing and tuning activities which occurred during the recommissioning period. [PSD permit (SJ 98-01), X.F.5] Federally Enforceable Through Title V Permit

63. Recommissioning Periods: Pursuant to 40 CFR 60.8, within 30 days after the end of a recommissioning period, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. Upon written request and adequate justification from the Permittee, EPA may waive a performance test after a recommissioning period. [PSD permit (SJ 98-01), X.F.6] Federally Enforceable Through Title V Permit

64. Performance Tests: Pursuant to 40 CFR 60.8, within 60 days after achieving the maximum production rate of the affected emission units, but no later than 180 days after the initial startup of equipment (as defined in 40 CFR 60.2), and at such other times as specified by the Regional Administrator, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. The tests for NOx and CO shall be conducted on an annual basis and at the maximum operating capacity of the facilities being tested. Upon written request (Attn: AIR-5) from the Permittee, EPA may approve the conducting of performance tests at a lower specified production rate. After initial performance test and upon written request and adequate justification from the Permittee, EPA may waive a specified annual test for the facility. [PSD permit (SJ 98-01), X.G.1] Federally Enforceable Through Title V Permit

65. Performance Tests: Performance tests for the emissions of CO and NOx shall be conducted and the results reported in accordance with the test methods set forth in 40 CFR 60, Part 60.8 and Appendix A. The following test methods, or alternatives approved by EPA, shall be used: a. Performance tests of the emissions of CO shall be conducted using EPA Methods 1-4 and 10; b. Performance tests of the emissions of NOx shall be conducted using EPA Methods 1-4 and 7E; c. Natural gas sulfur content shall be tested according to ASTM D3246. The EPA (Attn: AIR-5) shall be notified in writing at least 30 days prior to such test to allow time for the 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 EPA 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 EPA. [PSD permit (SJ 98-01), X.G] Federally Enforceable Through Title V Permit

66. Performance Tests: For performance test purposes, sampling ports, platforms, and access shall be provided by the Permittee on the exhaust stack in accordance with 40 CFR 60.8(e). [PSD permit (SJ 98-01), X.G.4] Federally Enforceable Through Title V Permit

67. Recordkeeping and Reporting: A file shall be maintained of all measurements including continuous monitoring system evaluations, all continuous monitoring system or monitoring device calibration checks, adjustments and maintenance performed on these systems or devices, performance and all other information required by 40 CFR 60 or 75 recorded in a permanent form suitable for inspection. The file shall be retained for at least five (5) years following the date of such measurement, maintenance, reports, and records. [PSD permit (SJ 98-01), X.H.1] Federally Enforceable Through Title V Permit

68. Recordkeeping and Reporting: The Permittee shall maintain an operating log for each combustion turbine, which contains at a minimum, the following information: the start and finish times for all startup, shutdown and recommissioning periods. [PSD permit (SJ 98-01), X.H.3] Federally Enforceable Through Title V Permit

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69. Recordkeeping and Reporting: The permittee shall submit a written report of all excess emissions to EPA (Attn: AIR-5) for every calendar quarter. The report shall include the following: a. The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions; b. Specific identification of each period of excess emissions that occurs during startups, shutdown, recommissioning, and malfunctions of the engine exhaust systems. The nature and cause of any malfunction (if known) and the corrective action taken or preventative measures adopted shall also be reported; c. The date and time identifying each period during which a CEMS was inoperative, repaired, or adjusted, except for zero and span checks, and the nature of the system repairs or adjustments; d. When no excess emissions have occurred or the CEMS have not been inoperative, repaired, or adjusted, such information shall be stated in the report; e. Excess emissions shall be defined as any 1-hour period during which the average emissions of NOx, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.a of the PSD permit; f. Excess emissions shall be defined as any 3-hour period during which the average emissions of CO, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.b of the PSD permit. [PSD permit (SJ 98-01), X.H.4] Federally Enforceable Through Title V Permit

70. Recordkeeping and Reporting: The facility is subject to the recordkeeping and reporting requirements of the applicable New Source Performance Standards (NSPS) - 40 CFR Part 60, as described in this permit. [PSD permit (SJ 98-01), X.H.5] Federally Enforceable Through Title V Permit

71. New Source Performance Standards: The facility's combustion turbines are subject to the federal New Source Performance Standards (NSPS) - 40 CFR Part 60, Subpart GG, as well as the General Provisions of Subpart A. The owner/operator shall meet the applicable requirements of the aforementioned NSPS Subparts. [PSD permit (SJ 98-01), X.I] Federally Enforceable Through Title V Permit

72. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: District Rule 4801 and Kern County Rule 407 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

73. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.332, 60.333 (a) and (b); 40 CFR 60.334(a), (b)(2), (c), and 40 CFR 60.335(b); District Rule 4703 (as amended 9/20/07), Sections 5.1.1, 5.2, 6.1, 6.3.1, 6.3.3, 6.4, 6.4.5, and 6.4.6 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

74. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.7(b), 60.8, 60.8(d), 60.13, and 60.13(b); District Rules 1080 (as amended 12/17/92), Sections 6.3, 6.4, 6.5, 7.0, 7.1, 7.2, 7.3, 8.0, 9.0, 10.0, and 11.0; and 1081 (as amended 12/16/93) as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

75. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the applicable requirements of District Rule 4201 (as amended 12/17/92). A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

76. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.1] Federally Enforceable Through Title V Permit

77. Gas turbine engine exhaust shall be equipped with an additional continuous NOx analyzer located upstream of the SCR unit for purposes of monitoring ammonia slip (Ammonia Slip NOx Analyzer). This analyzer and shall be capable of monitoring NOx concentration at this location during startups and shutdowns as well as normal operating conditions. [District Rule 4102]

78. The Ammonia Slip NOx Analyzer shall conform to the specifications of Section 6.0, Performance Specification 2, 40 CFR 60, Appendix B. [District Rule 4102]

79. Calibration drift (CD) assessment for the Ammonia Slip NOx Analyzer shall be performed in accordance with requirements specified in section 4 of Appendix F to 40 CFR Part 60. [District Rule 4102]

80. A Cylinder Gas Audit (CGA) of the Ammonia Slip NOx Analyzer shall be performed each quarter in accordance with the procedures of specified in section 5 of Appendix F to 40 CFR Part 60. [District Rule 4102]

CONDITIONS CONTINUE ON NEXT PAGE

81. Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required by this permit, the Ammonia Slip NOx Analyzer shall be in continuous operation. [District Rule 4102]

82. The Ammonia Slip NOx Analyzer shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. [District Rule 4102]

83. Emission data from the Ammonia Slip NOx Analyzer, including the calculated ammonia slip, shall be obtained for at least 18 hours in at least 22 out of 30 successive gas turbine operating days. [District Rule 4102]

84. Notification and record keeping for the Ammonia Slip NOx Analyzer shall be in accordance with the requirements specified in 40 CFR 60.7. [District Rule 4102]

85. An excess ammonia emissions and monitoring system performance report for the Ammonia Slip NOx Analyzer, in accordance with the requirements specified in 40 CFR 60.7, shall be submitted to the APCO for each calendar quarter. [District Rule 4102]

86. Although specific sections of 40 CFR 60 are referenced for convenience in permit conditions for the Ammonia Slip NOx Analyzer, the equipment is not subject to federal enforcement or other federal monitoring, reporting or recordkeeping requirements. [District Rule 4102]

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

AUTHORITY TO CONSTRUCT

PERMIT NO: S-3412-4-14 **ISSUANCE DATE:** 01/24/2013

LEGAL OWNER OR OPERATOR: LA PALOMA GENERATING CO LLC
MAILING ADDRESS: PO BOX 175
MCKITTRICK, CA 93251

LOCATION: 1760 W SKYLINE ROAD
MCKITTRICK, CA 93251

SECTION: NE27 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:
MODIFICATION OF ABB GT-24 NATURAL GAS FIRED COMBINED CYCLE GAS TURBINE ENGINE/ELECTRICAL GENERATOR #4 WITH DRY LOW NOX COMBUSTORS, STEAM POWER AUGMENTATION, OXIDATION CATALYST, SELECTIVE CATALYTIC REDUCTION, STEAM TURBINE, AND ELECTRICAL GENERATOR (262 MW NOMINAL RATING): INSTALL AIR INLET FOGGER

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Gas turbine engine and generator lube oil vents shall be equipped with mist eliminators. Visible emissions from lube oil vents shall not exceed 5% opacity, except for three minutes in any hour. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The gas turbine engine shall be equipped with continuously recording fuel gas flowmeter. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
S-3412-4-14 : Jan 24 2013 4:22PM -- EDGEHILR : Joint Inspection NOT Required

5. Gas turbine engine exhaust shall be equipped with a continuously recording emissions monitor for NOx, CO and O2 downstream of the SCR catalyst dedicated to this unit. This continuous emission monitor shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as normal operating conditions. [District Rule 2201, 4703, and 40 CFR Part 64] Federally Enforceable Through Title V Permit

6. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201] Federally Enforceable Through Title V Permit

7. Heat recovery steam generator design shall provide space for additional selective catalytic reduction catalyst and oxidation catalyst if required to meet NOx and CO emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit

8. Permittee shall monitor and record exhaust gas temperature at selective catalytic reduction and oxidation catalyst inlets. [District Rule 2201] Federally Enforceable Through Title V Permit

9. Except during startup ignition, gas turbine engine shall be fired exclusively on pipeline quality natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry scf of natural gas. Gas turbine igniters may be fueled with propane or natural gas as part of startup sequence. Use of propane during startup process is limited to 6 grams per second, for a duration of no more than 30 seconds per startup on a design basis. Ignition occurs for the duration of time required to ignite and achieve a sustained flame on natural gas. [District Rule 2201, District Rule 4801, Kern County Rule 407, and PSD permit (SJ 98-01), X.C.1] Federally Enforceable Through Title V Permit

10. Recommissioning activities are defined as, but not limited to, all testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and LPGC contractors to insure safe and reliable steady state operation of the plant. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Recommissioning periods for this unit shall commence at first firing during major outage maintenance procedures. The recommissioning period shall terminate when the unit has completed performance testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers. [District Rule 2201] Federally Enforceable Through Title V Permit

12. Permittee shall notify the District at least seven (7) calendar days prior to start, and no more than 7 calendar days after the end, of recommissioning period for this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

13. Startup is defined as the period beginning with turbine light-off, or when the combustion turbine output is reduced to below minimum load (minimum megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the lb/hr and ppmv emission limits in Condition 21) to engage the steam turbine, until the unit again reaches minimum load. Shutdown is defined as the period beginning with initiation of turbine shutdown sequence and ending either with cessation of firing of the gas turbine engine, or when the unit ramps back up after an aborted shutdown and the unit reaches minimum load. Startup durations shall not exceed three hours, except during recommissioning periods for this unit, and shutdowns shall not exceed one hour, per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit

14. Permittee may inject ammonia during startup when the selective catalytic reduction system is at least 302 degrees F, however ammonia must be injected during startup when the selective catalytic reduction system catalyst temperature exceeds 500 degrees F and selective catalytic reduction system inlet concentrations exceed 2.5 ppmv NOx and as needed during normal operation to meet the NOx emissions limits. Permittee shall monitor and record catalyst temperature during periods of startup. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods. [District Rule 1081] Federally Enforceable Through Title V Permit

16. During startup and/or recommissioning of any gas turbine engines, combined emissions from the four gas turbine engines (S-3412-1, '-2, '-3 and '-4) heat recovery steam generator exhausts shall not exceed the following: NOx (as NO2): 900 lb and CO:2,500 lb in any one hour. [District Rule 2201] Federally Enforceable Through Title V Permit

17. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the combustors of this unit shall be tuned to minimize emissions. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

18. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the oxidation catalyst shall be utilized to minimize CO emissions from this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

19. During recommissioning periods, at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the Selective Catalytic Reduction (SCR) system shall be utilized to control NOx whenever gas turbine operations are sufficiently stable and minimum catalyst temperature is achieved. [District Rule 2201] Federally Enforceable Through Title V Permit

20. During recommissioning periods for this unit, emission rates from gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 517.3 lb/hr and CO: 439.6 lb/hr. NOx (as NO2) emission limit is a one hour average. CO emission limit is a three-hour rolling average. [District Rule 2201] Federally Enforceable Through Title V Permit

21. Emission rates from the gas turbine engine heat recovery steam generator exhaust, except during startup and/or shutdown of this unit, shall not exceed the following: PM10: 11.0 lb/hr, SOx (as SO2): 3.89 lb/hr, NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15% O2, VOC (as propane): 2.80 lb/hr and 0.7 ppmvd @ 15% O2, and CO: 31.40 lb/hr and either 10 ppmvd @ 15% O2 at operating loads less than or equal to 221 MW (gross three hour average) or 6 ppmvd @ 15% O2 at operating loads greater than 221 MW (gross three hour average). NOx (as NO2) emission limit is a one hour average. All other emission limits are three hour rolling averages. NOx and CO emission limits shall not apply during recommissioning periods. [District Rule 2201; District Rule 4703, 5.1 and 5.2; and 40 CFR 60.332 and 60.333] Federally Enforceable Through Title V Permit

22. Except during recommissioning periods for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following on days when a startup or shutdown of the unit occurs: PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, NOx (as NO2): 511.4 lb/day, VOC: 139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

23. During recommissioning periods, for this unit, emission rates from the gas turbine engine heat recovery steam generator exhaust shall not exceed the following: NOx (as NO2): 4,790.0 lb/day, PM10: 264.0 lb/day, SOx (as SO2): 91.4 lb/day, VOC:139.8 lb/day, and CO: 1,873.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

24. Twelve month rolling average emissions from each gas turbine engine heat recovery steam generator exhaust shall not exceed the following PM10: 96,360 lb/year, SOx (as SO2): 30,517 lb/year, NOx (as NO2): 146,001 lb/year, VOC: 25,063 lb/year, and CO: 217,921 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

25. Ammonia emission rate shall not exceed 10 ppmvd @ 15% O2 on a twenty four hour rolling average. [District Rule 4102]

26. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O2 = ((a-(bxc/1,000,000)) x 1,0 00,000 / b) x d, where a = ammonia injection rate(lb/hr)/17(lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol), c = change in measured NOx concentration ppmv at 15% O2 across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. [District Rule 4102]

27. Short term emissions shall be measured to demonstrate compliance with short term emission limits (lb/hr and ppmv @ 15% O2) annually by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm at full load conditions as follows - NOx: ppmvd @ 15% O2 and lb/hr, CO: ppmvd @ 15% O2 and lb/hr, VOC: ppmvd @ 15% O2 and lb/hr, PM10: lb/hr, and ammonia: ppmvd @ 15% O2. Sample collection for ammonia emissions shall be based on a two-hour or longer average. [District Rule 1081] Federally Enforceable Through Title V Permit

28. Cold start NOx, and CO mass emissions shall be measured, and measurement of cold start VOC emissions shall be performed for one of the gas turbines engines (S-3412-1, '2, '3, or '4) at least every seven years by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. [District Rule 1081] Federally Enforceable Through Title V Permit

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29. 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. [District Rules 1081; 2520, 9.3.2; and 2540] Federally Enforceable Through Title V Permit

30. The sulfur content of the natural gas being fired in the turbine shall be determined using ASTM method D 3246. [District Rule 2520, 9.3.2 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit

31. Permittee shall maintain records of fuel sulfur content monitoring data and records documenting a constant supplier or source of fuel (a substantial change in fuel quality shall be considered a change in fuel supply). Permittee shall submit results of fuel sulfur content monitoring annually to the District with the Tittle V annual Certificate. Permittee shall notify the District of any changes in fuel supplier or source within 60 days of such change. [District Rules 1081 and 2540] Federally Enforceable Through Title V Permit

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

33. The following test methods shall be used NOx: EPA Method 7E or 20, CO: EPA method 10 or 10B, O2: EPA Method 3, 3A, or 20, VOC: EPA method 18, and PM10: EPA method 5 (front half and back half) or EPA methods 201A and 202. Alternative test methods as approved by the District and EPA may also be used to address the source testing requirements of this permit. [District Rules 1081 and 4703, 6.4; and 40 CFR 60.335] Federally Enforceable Through Title V Permit

34. Source testing for ammonia shall be performed using BAAQMD ST-1B. [District Rule 4102]

35. The permittee shall maintain hourly records of ammonia emission concentrations (ppmv @ 15% O2) [District Rule 4102]

36. The permittee shall maintain hourly records of NOx, and CO emission concentrations (ppmv @ 15% O2), and hourly, daily, and twelve month rolling average records of NOx and CO emissions. Compliance with the hourly, daily, and twelve month rolling average VOC emission limits shall be demonstrated by annual VOC source tests. [District Rule 2201] Federally Enforceable Through Title V Permit

37. The permittee shall maintain records of SOx lb/hr, lb/day, and lb/twelve month rolling average emission. SOx emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [District Rule 2201] Federally Enforceable Through Title V Permit

38. CEM cycling times shall be those specified in 40 CFR, Part 51, Appendix P, Sections 3.4, 3.4.1 and 3.4.2, or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the EPA. [District Rule 1080, 6.4] Federally Enforceable Through Title V Permit

39. The continuous NOx and O2 monitoring system shall meet the performance specification requirements in 40 CFR 60, Appendix F, 40 CFR 51, Appendix P, and Part 60, Appendix B, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [District Rule 1080, 6.3, 6.5, 6.6 and 7.2] Federally Enforceable Through Title V Permit

40. The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary of data shall be in the form and the manner prescribed by the APCO. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

41. Operators of CEM systems installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; Applicable time and date of each period during which the CEM was inoperative, except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080, 8.0] Federally Enforceable Through Title V Permit

42. Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. Successive quarterly audits shall occur no closer than two months. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080, 6.2] Federally Enforceable Through Title V Permit

43. APCO or an authorized representative shall be allowed to inspect, as he or she determines to be necessary, the monitoring devices required by this rule to ensure that such devices are functioning properly. [District Rule 1080, 11.0] Federally Enforceable Through Title V Permit

44. Sulfur compound emissions shall not exceed 0.015% by volume at calculated at 15% O2 (150 ppmv @ 15% O2) on a dry basis averaged over 15 consecutive minutes. [District Rule 4801, Kern County Rule 407, and 40 CFR 60.333(a)] Federally Enforceable Through Title V Permit

45. All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device. [40 CFR 60.13(b)] Federally Enforceable Through Title V Permit

46. Continuous emission monitors shall meet applicable requirements of 40 CFR 60.13. [District Rule 4703, 5.1 & 6.4 and 40 CFR 60.13] Federally Enforceable Through Title V Permit

47. By two hours after turbine light-off the owner or operator shall not operate the gas turbine under load conditions, excluding shutdown or recommissioning periods for this unit, which results in the measured concentrations exceeding the following limits: 5 ppmv NOx (as NO2) @ 15% O2 or 200 ppmv CO @ 15% O2. [District Rule 4703, 5.1.2 and 5.2] Federally Enforceable Through Title V Permit

48. The HHV and LHV of the fuel combusted shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit

49. The owner or operator shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown, recommissioning period, malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEM system that has been installed pursuant to District Rule 1080 (as amended 12/17/92), emission measurements, total daily and annual hours of operation, hourly quantity of fuel used, and gross three hour average operating load. [District Rules 1080, 7.0; 2520, 9.3.2; 4703, 6.2; and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

50. The owner or 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, 9.4.2] Federally Enforceable Through Title V Permit

51. Air Pollution Control Equipment/Operation: The Permittee shall continuously operate and maintain the following air pollution controls and operations to minimize emissions at or below the levels specified in Conditions X-E of the PSD permit. The aforementioned "continuous" periods of operation do not include periods of startup, shutdown, and recommissioning, as defined in Section X.E.3, and X.F.1 of the PSD permit, or periods of malfunction as defined in Section IV.B.1 of the PSD permit. The Permittee shall continuously operate Selective Catalytic Reduction (SCR) systems on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 to meet the NOx emission limits specified in the PSD permit. The Permittee shall maintain an oxidation catalyst system on permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4 for control of CO. [PSD permit (SJ 98-01), X.B] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

52. Continuous Emission Monitoring: Prior to the date of startup and thereafter, the Permittee shall install, maintain, and operate the following Continuous Emissions Monitoring Systems (CEM) on each Combustion Turbine Generator (CTG) set exhaust vent stack: a. A continuous monitoring system to measure stack gas NOx concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B); and b. A continuous monitoring system to measure stack CO concentrations. The system shall meet EPA monitoring performance specifications (40 CFR 60, Appendix B). [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

53. Continuous Emission Monitoring: The permittee shall install, maintain, and operate a continuously recording fuel gas flow meter on each gas turbine engine. Exhaust gas flow rates shall then be determined from fuel gas flow using EPA Method 19. [PSD permit (SJ 98-01), X.D] Federally Enforceable Through Title V Permit

54. Emission Limits: Emissions from each of the gas turbines (permit units S-3412-1, S-3412-2, S-3412-3, and S-3412-4) shall not exceed the following limits, except during periods of startup, shutdown and recommissioning: a. NOx (as NO2): 17.30 lb/hr and 2.5 ppmvd @ 15 percent O2, based on a 1-hour average; b. 25.30 lb-CO/hr and 6 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads above 221 MW (gross 3-hour average) or 31.40 lb-CO/hr and 10 ppmvd @ 15 percent O2, based on a 3-hour average, whenever the combined-cycle combustion turbine is operating at loads at or below 221 MW (gross 3-hour average). [PSD permit (SJ 98-01), X.E.1] Federally Enforceable Through Title V Permit

55. Emission Limits: Emission rates from each gas turbine shall not exceed the following daily and annual limits, including all periods of startup, shutdown and recommissioning, except NOx daily limits may be exceeded during recommissioning periods: NOx (as NO2): 511.4 lb/day, 73.0 tons/yr; CO: 1,873.0 lb/day, 109.0 tons/yr; SO2: 91.4 lb/day ,15.3 tons/yr. The annual limit is a 12-month rolling average. [PSD permit (SJ 98-01), X.E.2] Federally Enforceable Through Title V Permit

56. Emission Limits: The following definitions apply to the PSD permit: a. Startup of the combustion turbine is defined as the period beginning with combustion turbine light-off, until the unit reaches minimum load; b. Startup of the steam turbine is defined as the period when the combustion turbine output is reduced to below minimum load, in order to engage the steam turbine, until the unit again reaches minimum load; c. Shutdown is defined as the period beginning with initiation of combustion turbine shutdown sequence and ending either with the cessation of firing of the combustion turbine engine, or when the unit ramps back up after an aborted shutdown, until the unit reaches minimum load; d. Minimum load is defined as the minimum combustion turbine megawatt output at which the combustion turbine achieves stable operation and maintains compliance with the ppmv emission limits in Condition X.E.1 of the PSD permit. [PSD permit (SJ 98-01), X.E.3] Federally Enforceable Through Title V Permit

57. Emission Limits: Each startup, whether of the combustion or steam turbine, shall not exceed three hours per occurrence. Each shutdown shall not exceed one hour per occurrence. [PSD permit (SJ 98-01), X.E.4] Federally Enforceable Through Title V Permit

58. Recommissioning Periods: Recommissioning is defined as the period following an inspection, maintenance, repair and/or overhaul outage where the source conducts operational and contractual testing and tuning to ensure the safe, efficient and reliable operation of the plant. A recommissioning period for any single outage shall not exceed 60 cumulative days of combustion turbine firing. [PSD permit (SJ 98-01), X.F.1] Federally Enforceable Through Title V Permit

59. Recommissioning Periods: Prior to commencing a recommissioning period, permittee shall perform a PSD applicability determination for the action(s) triggering the recommissioning period. [PSD permit (SJ 98-01), X.F.2] Federally Enforceable Through Title V Permit

60. Recommissioning Periods: Permittee shall maintain a copy of each PSD applicability determination on site. In addition, if the action(s) triggering the recommissioning period include(s) the replacement of parts that could affect capacity or emissions, or an overhaul outage, then the permittee shall provide a copy of such determination to EPA prior to the start of the recommissioning period. [PSD permit (SJ 98-01), X.F.3] Federally Enforceable Through Title V Permit

61. Recommissioning Periods: Emission rates from each combustion turbine shall not exceed the following limits during a recommissioning period: 439.6 lbs-CO per hr; 517.3 lbs-NOx per hr; 4,790.0 lbs-NOx per day; 4,443.0 lbs-CO per recommissioning event; 8,545.0 lbs-NOx per recommissioning event. [PSD permit (SJ 98-01), X.F.4] Federally Enforceable Through Title V Permit

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62. Recommissioning Periods: The permittee shall maintain the following records for each recommissioning period: a. The number of days the combustion turbine is fired; b. Hourly and daily emissions, in lbs/hr and lbs/day, of NOx and CO emitted; c. Total emissions of NOx and CO emitted during the recommissioning period; d. Documentation of the testing and tuning activities which occurred during the recommissioning period. [PSD permit (SJ 98-01), X.F.5] Federally Enforceable Through Title V Permit

63. Recommissioning Periods: Pursuant to 40 CFR 60.8, within 30 days after the end of a recommissioning period, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. Upon written request and adequate justification from the Permittee, EPA may waive a performance test after a recommissioning period. [PSD permit (SJ 98-01), X.F.6] Federally Enforceable Through Title V Permit

64. Performance Tests: Pursuant to 40 CFR 60.8, within 60 days after achieving the maximum production rate of the affected emission units, but no later than 180 days after the initial startup of equipment (as defined in 40 CFR 60.2), and at such other times as specified by the Regional Administrator, the owner/operator shall conduct or cause to be conducted performance tests (as described in 40 CFR 60.8) for NOx and CO and furnish the EPA (Attn: AIR-5) a written report of the results of such test. The tests for NOx and CO shall be conducted on an annual basis and at the maximum operating capacity of the facilities being tested. Upon written request (Attn: AIR-5) from the Permittee, EPA may approve the conducting of performance tests at a lower specified production rate. After initial performance test and upon written request and adequate justification from the Permittee, EPA may waive a specified annual test for the facility. [PSD permit (SJ 98-01), X.G.1] Federally Enforceable Through Title V Permit

65. Performance Tests: Performance tests for the emissions of CO and NOx shall be conducted and the results reported in accordance with the test methods set forth in 40 CFR 60, Part 60.8 and Appendix A. The following test methods, or alternatives approved by EPA, shall be used: a. Performance tests of the emissions of CO shall be conducted using EPA Methods 1-4 and 10; b. Performance tests of the emissions of NOx shall be conducted using EPA Methods 1-4 and 7E; c. Natural gas sulfur content shall be tested according to ASTM D3246. The EPA (Attn: AIR-5) shall be notified in writing at least 30 days prior to such test to allow time for the 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 EPA 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 EPA. [PSD permit (SJ 98-01), X.G] Federally Enforceable Through Title V Permit

66. Performance Tests: For performance test purposes, sampling ports, platforms, and access shall be provided by the Permittee on the exhaust stack in accordance with 40 CFR 60.8(e). [PSD permit (SJ 98-01), X.G.4] Federally Enforceable Through Title V Permit

67. Recordkeeping and Reporting: A file shall be maintained of all measurements including continuous monitoring system evaluations, all continuous monitoring system or monitoring device calibration checks, adjustments and maintenance performed on these systems or devices, performance and all other information required by 40 CFR 60 or 75 recorded in a permanent form suitable for inspection. The file shall be retained for at least five (5) years following the date of such measurement, maintenance, reports, and records. [PSD permit (SJ 98-01), X.H.1] Federally Enforceable Through Title V Permit

68. Recordkeeping and Reporting: The Permittee shall maintain an operating log for each combustion turbine, which contains at a minimum, the following information: the start and finish times for all startup, shutdown and recommissioning periods. [PSD permit (SJ 98-01), X.H.3] Federally Enforceable Through Title V Permit

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69. Recordkeeping and Reporting: The permittee shall submit a written report of all excess emissions to EPA (Attn: AIR-5) for every calendar quarter. The report shall include the following: a. The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions; b. Specific identification of each period of excess emissions that occurs during startups, shutdown, recommissioning, and malfunctions of the engine exhaust systems. The nature and cause of any malfunction (if known) and the corrective action taken or preventative measures adopted shall also be reported; c. The date and time identifying each period during which a CEMS was inoperative, repaired, or adjusted, except for zero and span checks, and the nature of the system repairs or adjustments; d. When no excess emissions have occurred or the CEMS have not been inoperative, repaired, or adjusted, such information shall be stated in the report; e. Excess emissions shall be defined as any 1-hour period during which the average emissions of NOx, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.a of the PSD permit; f. Excess emissions shall be defined as any 3-hour period during which the average emissions of CO, as measured by the CEM, exceeds the maximum emissions limits set forth in Condition X.E.1.b of the PSD permit. [PSD permit (SJ 98-01), X.H.4] Federally Enforceable Through Title V Permit

70. Recordkeeping and Reporting: The facility is subject to the recordkeeping and reporting requirements of the applicable New Source Performance Standards (NSPS) - 40 CFR Part 60, as described in this permit. [PSD permit (SJ 98-01), X.H.5] Federally Enforceable Through Title V Permit

71. New Source Performance Standards: The facility's combustion turbines are subject to the federal New Source Performance Standards (NSPS) - 40 CFR Part 60, Subpart GG, as well as the General Provisions of Subpart A. The owner/operator shall meet the applicable requirements of the aforementioned NSPS Subparts. [PSD permit (SJ 98-01), X.I] Federally Enforceable Through Title V Permit

72. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: District Rule 4801 and Kern County Rule 407 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

73. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.332, 60.333 (a) and (b); 40 CFR 60.334(a), (b)(2), (c), and 40 CFR 60.335(b); District Rule 4703 (as amended 9/20/07), Sections 5.1.1, 5.2, 6.1, 6.3.1, 6.3.3, 6.4, 6.4.5, and 6.4.6 as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

74. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the following applicable requirements: 40 CFR 60.7(b), 60.8, 60.8(d), 60.13, and 60.13(b); District Rules 1080 (as amended 12/17/92), Sections 6.3, 6.4, 6.5, 7.0, 7.1, 7.2, 7.3, 8.0, 9.0, 10.0, and 11.0; and 1081 (as amended 12/16/93) as of the date of permit issuance. A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

75. Compliance with permit conditions in the Title V permit for this unit shall be deemed compliance with the applicable requirements of District Rule 4201 (as amended 12/17/92). A permit shield from these requirements is granted to this unit. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

76. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.1] Federally Enforceable Through Title V Permit

77. Gas turbine engine exhaust shall be equipped with an additional continuous NOx analyzer located upstream of the SCR unit for purposes of monitoring ammonia slip (Ammonia Slip NOx Analyzer). This analyzer and shall be capable of monitoring NOx concentration at this location during startups and shutdowns as well as normal operating conditions. [District Rule 4102]

78. The Ammonia Slip NOx Analyzer shall conform to the specifications of Section 6.0, Performance Specification 2, 40 CFR 60, Appendix B. [District Rule 4102]

79. Calibration drift (CD) assessment for the Ammonia Slip NOx Analyzer shall be performed in accordance with requirements specified in section 4 of Appendix F to 40 CFR Part 60. [District Rule 4102]

80. A Cylinder Gas Audit (CGA) of the Ammonia Slip NOx Analyzer shall be performed each quarter in accordance with the procedures of specified in section 5 of Appendix F to 40 CFR Part 60. [District Rule 4102]

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81. Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required by this permit, the Ammonia Slip NOx Analyzer shall be in continuous operation. [District Rule 4102]

82. The Ammonia Slip NOx Analyzer shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. [District Rule 4102]

83. Emission data from the Ammonia Slip NOx Analyzer, including the calculated ammonia slip, shall be obtained for at least 18 hours in at least 22 out of 30 successive gas turbine operating days. [District Rule 4102]

84. Notification and record keeping for the Ammonia Slip NOx Analyzer shall be in accordance with the requirements specified in 40 CFR 60.7. [District Rule 4102]

85. An excess ammonia emissions and monitoring system performance report for the Ammonia Slip NOx Analyzer, in accordance with the requirements specified in 40 CFR 60.7, shall be submitted to the APCO for each calendar quarter. [District Rule 4102]

86. Although specific sections of 40 CFR 60 are referenced for convenience in permit conditions for the Ammonia Slip NOx Analyzer, the equipment is not subject to federal enforcement or other federal monitoring, reporting or recordkeeping requirements. [District Rule 4102]