ELLISON, SCHNEIDER & HARRIS L.L.P.

ANNE J. SCHNEIDER
1947-2010

CHRISTOPHER T. ELLISON
JEFFERY D. HARRIS
DOUGLAS K. KERNER
ROBERT E. DONLAN
ANDREW B. BROWN
GREGGORY L. WHEATLAND
CHRISTOPHER M. SANDERS
LYNN M. HAUG
PETER J. KIEL

ATTORNEYS AT LAW
2600 CAPITOL AVENUE, SUITE 400
SACRAMENTO, CALIFORNIA 95816
TELEPHONE: (916) 447-2166
FACSIMILE: (916) 447-3512
http://www.eslawfirm.com

BRIAN S. BIERING
CRAIG A. CARNES, JR.
JEDEDIAH J. GIBSON
CHASE B. KAPPEL
SHANE E. C. McCOIN
SAMANTHA G. POTTENGER

OF COUNSEL:
ELIZABETH P. EWENS
MARGARET G. LEAVITT
RONALD LIEBERT

November 19, 2012

California Energy Commission
DOCKETED
01-AFC-12C
TN # 68574
NOV. 19 2012

Christine Stora
Compliance Project Manager
Siting, Transmission and Environmental Protection Division
California Energy Commission
1516 Ninth Street, MS 2000
Sacramento, CA 95814

Re: Los Esteros Critical Energy Facility 01-AFC-12C
Amendment No. 5

Dear Ms. Stora:

On behalf of Los Esteros Critical Energy Facility, LLC, we are submitting this Petition for Modification No. 5 for the Los Esteros Critical Energy Facility (01-AFC-12C). By this amendment, Los Esteros Critical Energy Facility, LLC proposes modifications to certain Air Quality Conditions of Certification to make non-substantive clarifications and administrative amendments to provisions governing monitoring and initial source testing and to conform with the corresponding conditions in the Authority to Construct air permit issued by the Bay Area Air Quality Management District.

If you have any questions, please contact me at (916) 447-2166.

Sincerely,

Chase Kappel

Chase B. Kappel

enclosure

Los Esteros Critical Energy Facility

(01-AFC-12C)

Amendment No. 5

Submitted by

Los Esteros Critical Energy Facility, LLC

November 2012

Contents

Contents ii
Executive Summary iii
1.0 Introduction 1
1.1 Overview 1
1.2 Summary of Environmental Impacts 2
2.0 Description of Project Changes 3
2.1 Changes to Air Quality Conditions of Certification 3
2.2 Necessity of Proposed Changes 4
3.0 Environmental Analysis of Proposed Project Changes and Consistency with LORS 5
3.1 Air Quality Conditions of Certification 5
3.1.1 Air Quality 5
3.1.2 Biological Resources 6
3.1.3 Cultural Resources 6
3.1.4 Geology and Paleontology 6
3.1.5 Hazardous Materials Management 6
3.1.6 Land Use 6
3.1.7 Noise and Vibration 6
3.1.8 Public Health 6
3.1.9 Socioeconomics 7
3.1.10 Soil and Water Resources 7
3.1.11 Traffic and Transportation 7
3.1.12 Visual Resources 7
3.1.13 Waste Management 7
3.1.14 Worker Safety and Fire Protection 7
3.2 Consistency of Amendment with the Certification and LORS 7
4.0 Potential Effects on the Public 8
5.0 List of Property Owners and Potential Effects on Property Owners 9
5.1 List of Property Owners 9
5.2 Potential Effects on Property Owners 9
6.0 Proposed Changes to Air Quality Conditions of Certification 10

Tables

1 Informational Requirements for Post Certification Amendments and Changes

Executive Summary

Los Esteros Critical Energy Facility, LLC, as project owner, petitions the California Energy Commission ("CEC" or "Commission") to amend the certification for the Los Esteros Critical Energy Facility ("LECEF"). This Amendment includes the following components:

- Various non-substantive administrative changes to the Air Quality Conditions of Certification to clarify certain terms concerning monitoring and test methods and timing for initial source testing and to conform to the conditions in the Authority to Construct ("ATC") air permit issued by the Bay Area Air Quality Management District ("BAAQMD").

Section 1.0 provides an overview of the Amendment and a review of the ownership of the project. Section 2.0 provides a complete description of the proposed modifications and the necessity for the proposed changes. Section 3.0 assesses the potential environmental effects of the proposed changes, the project's continued compliance with all laws, ordinances, regulations and standards, and the consistency of the changes with the Commission Decision certifying the facility. This assessment indicates that adoption of the Amendment will not result in any significant, unmitigated adverse environmental impacts. The project will continue to comply with all applicable laws, ordinances, regulations and standards. The findings and conclusions contained in the Commission Decision certifying Phase 2 of LECEF, as amended by the Commission's February 2, 2011 order, are still applicable to the project.

The proposed changes to the relevant Conditions of Certification are included in Section 6.0 of the Amendment.

1.0 Introduction

1.1 Overview

The Los Esteros Critical Energy Facility ("LECEF") is a natural gas fired power plant located in the City of San Jose. The facility consists of an operational 180 megawatt ("MW") simple-cycle power plant (LECEF Phase 1) that is currently being converted into a 320 MW combined-cycle plant (LECEF Phase 2). Los Esteros Critical Energy Facility, LLC, hereinafter "project owner," is a wholly-owned subsidiary of Calpine Corporation.

On December 30, 2003, the project owner filed an Application for Certification with the Commission to convert the project from a 180 MW simple-cycle plant to a 320 MW combined-cycle plant. (Order No. 06-1011-05, adopting Commission Decision in 03-AFC-2, hereinafter "Decision".) The Decision was subsequently amended, including amendment of Air Quality Conditions of Certification, by the Commission on January 2, 2011. (Order No. 11-0202-6, amending the Energy Commission Decision, Docket No. 03-AFC-2C, hereinafter "Amendment No. 4.") Changes to the Air Quality Conditions of Certification in Amendment No. 4 were made to match the conditions of the LECEF license to changes to Bay Area Air Quality Management District ("BAAQMD") emission standards, and are therefore consistent with the facility's authority to construct ("ATC") air permit. On October 25, 2012, the project owner submitted a request for minor amendments to the ATC air permit.

By this Amendment Los Esteros Critical Energy Facility, LLC, petitions the Commission to amend the certification for the project as follows:

- Modify certain Air Quality Conditions of Certification to make non-substantive clarifications and administrative amendments to provisions governing monitoring and initial source testing and to conform with the corresponding conditions in the Authority to Construct air permit issued by BAAQMD.

This Amendment contains all of the information that is required pursuant to the CEC's Siting Regulations (California Code of Regulations [CCR] Title 20, Section 1769, Post Certification Amendments and Changes). The information necessary to fulfill the requirements of Section 1769 is contained in Sections 1.0 through 6.0 as summarized in Table 1 below.

TABLE 1
Informational Requirements for Post-Certification Amendments and Changes

Section 1769 Requirement	Section of Petition Fulfilling Requirement
(A) A complete description of the proposed modifications, including new language for any conditions that will be affected	Section 2.0—Proposed modifications Sections 6.0—Proposed changes to conditions of certification
(B) A discussion of the necessity for the proposed modifications	Section 2.2

TABLE 1
Informational Requirements for Post-Certification Amendments and Changes

Section 1769 Requirement	Section of Petition Fulfilling Requirement
(C) If the modification is based on information that was known by the petitioner during the certification proceeding, an explanation why the issue was not raised at that time	Section 2.2
(D) If the modification is based on new information that changes or undermines the assumptions, rationale, findings, or other bases of the final decision, an explanation of why the change should be permitted	Sections 3.2
(E) An analysis of the impacts the modification may have on the environment and proposed measures to mitigate any significant adverse impacts	Section 3.1
(F) A discussion of the impact of the modification on the facility's ability to comply with applicable laws, ordinances, regulations, and standards;	Section 3.2
(G) A discussion of how the modification affects the public	Section 4.0
(H) A list of property owners potentially affected by the modification	Section 5.1
(I) A discussion of the potential effect on nearby property owners, the public and the parties in the application proceedings.	Section 5.2

1.2 Summary of Environmental Impacts

The CEC Siting Regulations require that an analysis be conducted to address the potential impacts the proposed project change may have on the environment and proposed measures to mitigate any potentially significant adverse impacts (Title 20, CCR, Section 1769 [a][1][E]). The regulations also require a discussion of the impact of the proposed change on the facility's ability to comply with applicable laws, ordinances, regulations and standards ("LORS") (Title 20, CCR Section 1769 [1][a][F]).

Section 3.0 of this Amendment includes a discussion of the potential environmental impacts associated with the modifications to the Air Quality Conditions of Certification and a discussion of the consistency of the modification with LORS. Section 3.0 concludes that there would be no significant environmental impacts associated with implementing the changes to the Air Quality Conditions of Certification proposed herein and that the project as modified would comply with all applicable LORS.

Clarifications and amendments to the Air Quality Conditions of Certification will have no significant adverse impact on the environment because these changes are all minor and non-substantive in nature and do not modify any currently licensed limits on emissions.

2.0 Description of Project Changes

This section includes a complete description of the proposed project changes consistent with CEC Siting Regulations (Title 20, CCR, Section 1769 [a][1][A]).

2.1 Changes to Air Quality Conditions of Certification

This Amendment requests various changes to the Air Quality Conditions of Certification. These changes address certain monitoring and testing requirements and reflect certain non-substantive clarifications and amendments of those requirements.

BAAQMD issued a renewed ATC for LECEF Phase 2 in August 2007, which expired in August 2009.[1] The following ATC permit renewal in February 2011 incorporated new Best Available Control Technology ("BACT") standards for the project, and lowered the emission limits for certain pollutants. Amendment No. 4 of the LECEF license incorporates these changes to the ATC permit's standards into the Air Quality Conditions of Certification. The February 2011 ATC permit was issued for a two-year period from the expiration of the prior ATC permit in August 2009. LECEF demonstrated substantial use of the current ATC permit prior to its August 21, 2011 expiration and BAAQMD subsequently renewed the ATC for Phase 2 for another two-year period, until August 21, 2013.

This Amendment requests certain non-substantive changes to the Air Quality Conditions of Certification to clarify certain monitoring and testing requirements, but makes no change to any of the applicable emissions limits. The LECEF project owner is concurrently requesting that the BAAQMD modify the currently effective ATC permit conditions, so they would conform to the amended Conditions of Certification.[2] Additional changes are requested to extend the timing for conducting initial source testing, make certain corrections to permit language and otherwise assure consistency between the Air Quality Conditions of Certification and the ATC permit. None of the modifications being proposed affect the permitted limitations on emissions. As an example, the definition of "Gas Turbine Start-up Mode" is being revised so that start-up is complete when continuous emissions monitoring can show compliance with ammonia limits as well with limits for oxides of nitrogen (NOx) and carbon monoxide (CO). Additionally, the reference to precursor organic compounds ("POC") has been struck because they are not subject to continuous emissions monitoring ("CEM") and therefore cannot be used for determining when start-up is complete.

AQ-11 currently calls on the project owner to analyze POCs for methane and ethane. The project owner is proposing deletion of the requirement that POC be tested for methane and ethane because the project owner typically uses an EPA methodology that makes monitoring for methane and ethane unnecessary, is more accurate, and has a lower detection limit than other testing methods. Changes proposed for AQ-25(c) clarify that

[1] Prior and effective air permits for Los Esteros Critical Energy Facility are available at: http://www.baaqmd.gov/Divisions/Engineering/Public-Notices-on-Permits/Selected-Public-Notices-Before-2009/Los-Esteros-Critical-Energy-Facility/Los-Esteros-Critical-Energy-Facility.aspx.

[2] Los Esteros Critical Energy Facility Proposed Revisions to Condition No. 23688, Application No. 8859, October 25, 2012.

only CEM for CO is required to comply with rules for the New Source Performance Standards, 40 CFR part 60, while the CEMS for NOx and oxygen (O2) must meet the requirements of the acid rain program, 40 CFR Part 75.

The project owner is seeking an increase in the deadline for conducting source testing from 60 or 90 days (as the case may be) to 120 days from startup, which is considered to be first fire, because the timing sequence for commissioning activities is such that the project will not be finished with the work necessary to perform source testing within 90 days of first fire. Therefore, extending the source testing deadline to 120 days from startup allows the project to safely complete the necessary commissioning activities and results in no additional emissions or environmental impacts.

Changes to the Air Quality Conditions of Certification are provided in Section 6.0.

2.2 Necessity of Proposed Changes

The CEC Siting Regulations require a discussion of the necessity for the proposed revision to LECEF and whether the modification is based on information known by the petitioner during the certification proceeding (Title 20, CCR, Sections 1769 [a][1][B] and [C]).

Changes to the Air Quality Conditions of Certification are necessary to make minor non-substantive clarifications in certain monitoring and testing requirements and assure consistency between the project's CEC license and the conditions of the ATC permit. Certain administrative changes, e.g., clarification for how emissions limits are to be averaged or missing data treated, are needed to specify how monitoring and testing for compliance with the applicable emissions limits will be conducted. The necessity of these proposed changes could not be anticipated at the time when Amendment No. 4 was approved by the Commission because the need for clarification did not arise until the data acquisition system (DAS) that will be used to monitor compliance was being designed and its programming logic established by the construction contractor and equipment vendors. Other changes, such as the need for additional time to complete source testing, were not known until the sequencing of the commissioning process was established by the construction contractor.

Therefore, the LECEF project owner did not know at the time of approval of Amendment No. 4 that certain administrative amendments to the Air Quality Conditions of Certification would be needed to clarify monitoring and testing requirements and assure consistency with the corresponding conditions of the ATC permit.

3.0 Environmental Analysis of Proposed Project Changes and Consistency with LORS

The proposed project changes are evaluated below according to the type of change. The following sections describe the impacts of each of the changes on the Air Quality Conditions of Certification.

Within each of the following sections, an environmental analysis for each of the 14 different discipline areas addresses whether there are any significant potential changes to environmental impacts of the project that are a result of this Amendment. Each section includes an environmental analysis. The environmental disciplines are addressed, as follows:

3.1 Air Quality
3.2 Biological Resources
3.3 Cultural Resources
3.4 Geology and Paleontology
3.5 Hazardous Materials Management
3.6 Land Use
3.7 Noise and Vibration
3.8 Public Health
3.9 Socioeconomics
3.10 Soil and Water Resources
3.11 Traffic and Transportation
3.12 Visual Resources
3.13 Waste Management
3.14 Worker Safety and Fire Protection

At the end of this section, the Amendment addresses the consistency of the proposed changes to the Air Quality Conditions of Certification with LORS.

3.1 Air Quality Conditions of Certification

3.1.1 Air Quality

None of the changes to the Air Quality Conditions of Certification will have a significant effect on air quality. The changes proposed to these conditions do not affect the levels of emission permitted for the project or alter the project operator's duty to test emission levels in any significant way. Rather, the changes are administrative in nature and reflect needed clarifications to specify how monitoring and testing will be conducted to demonstrate compliance with applicable emissions limits.

Additionally, the project owner is requesting that the Commission and BAAQMD change the time allowed for the project to complete source testing from 60 or 90 days (depending on

the condition) from startup to 120 days from startup. This change will not significantly affect air emissions as it does not result in an increase in the emissions permitted for the project. The Amendment only provides the project owner sufficient time to finish activities necessary to perform an accurate source test and will not have a significant impact on air quality.

Other changes reflect clerical amendments intended to clarify the requirements, eliminate redundancy and assure consistency with the conditions of both the ATC, as well as the PSD permit. None of these changes will have any significant impact on air quality or any other environmental impacts.

3.1.2 Biological Resources

The proposed changes to the Air Quality Conditions of Certification proposed in this Amendment will not cause any adverse impacts to biological resources.

3.1.3 Cultural Resources

The proposed changes to the Air Quality Conditions of Certification proposed in this Amendment will not have any effect on cultural resources in the area of the project site.

3.1.4 Geology and Paleontology

The proposed changes to the Air Quality Conditions of Certification will not have any effect on geological resources or paleontological resources.

3.1.5 Hazardous Materials Management

This Amendment's proposed modifications to the Air Quality Conditions of Certification will not result in changes to the chemical inventory and quantities of chemicals for the project set forth in HAZ-1 and Appendix B of the Hazardous Materials section of the Commission Decision. Therefore, the proposed changes to the Air Quality Conditions of Certification will not result in changes to any Hazardous Materials Management conditions, findings or conclusions of the Commission Decision.

3.1.6 Land Use

The proposed changes to the Air Quality Conditions of Certification will not result in changes to the Decision's conditions, findings or conclusions regarding land use.

3.1.7 Noise and Vibration

The proposed changes to the Air Quality Conditions of Certification will not result in changes to the Decision's conditions, findings or conclusions regarding noise.

3.1.8 Public Health

The proposed changes to the Air Quality Conditions of Certification will not change the public health analysis previously conducted because all the emission limits will be equal to the existing permit limits.

3.1.9 Socioeconomics

The proposed changes to the Air Quality Conditions of Certification will have no effect on socioeconomics.

3.1.10 Soil and Water Resources

The proposed changes to the Air Quality Conditions of Certification will not impact soil and water resources.

3.1.11 Traffic and Transportation

The proposed changes to the Air Quality Conditions of Certification will not impact traffic.

3.1.12 Visual Resources

The proposed changes to the Air Quality Conditions of Certification will not impact visual resources.

3.1.13 Waste Management

The proposed changes to the Air Quality Conditions of Certification will not change or impact waste management practices or the types or quantities of waste generated by the construction or operation of the project.

3.1.14 Worker Safety and Fire Protection

The proposed changes to the Air Quality Conditions of Certification will not result in any impacts different than those analyzed by the CEC during certification, and the proposed changes do not affect the Commission Decision's conditions, findings or conclusions regarding worker safety and fire protection.

3.2 Consistency of Amendment with the Certification and LORS

The CEC Siting Regulations require a discussion of the consistency of the proposed project revision with the applicable laws, ordinances, regulations, and standards (LORS) and whether the modifications are based upon new information that changes or undermines the assumptions, rationale, findings, or other bases of the final decision (Title 14, CCR Section 1769 [a][1][D]). If the project is no longer consistent with the certification, the petition for project change must provide an explanation for why the modification should be permitted.

This Amendment is consistent with all applicable LORS and is not based on new information that changes or undermines any bases for the final decision. The changes proposed for the Air Quality conditions clarify how the project owner will demonstrate compliance with applicable emissions limits and assure consistency between the Air Quality Conditions of Certification and the corresponding conditions of the ATC and PSD permit. Accordingly, such changes are consistent with LORS. The findings and conclusions contained in the Commission Decision, as amended, for LECEF are still applicable to the project as modified.

4.0 Potential Effects on the Public

This section discusses the potential effects on the public that may result from the modifications proposed in this petition, per CEC Siting Regulations (Title 20, CCR, Section 1769[a][1][G]).

The modifications proposed in this Amendment will not affect the public or local economy, and therefore this Amendment poses no significant adverse effects on the public.

Specifically, the changes to the Air Quality Conditions of Certification involve minor clerical amendments to certain monitoring and testing requirements and to assure consistency between the Conditions of Certification and the ATC permit. There will be no change in air emissions, and there are therefore no potential effects on the public that would result from this Amendment.

5.0 List of Property Owners and Potential Effects on Property Owners

5.1 List of Property Owners

In accordance with the CEC Siting Regulations (Title 20, CCR, Section 1769[a][1][H]), the project owner shall provide the Compliance Project Manager for the project a list of all property owners whose property is located within 500 feet of the project. This list shall be provided under separate cover.

5.2 Potential Effects on Property Owners

This section addresses potential effects of the project changes proposed in this Amendment on nearby property owners, the public, and parties in the application proceeding, per CEC Siting Regulations (Title 20, CCR, Section 1769 [a][1][I]).

As described in this Amendment, there would be no significant adverse environmental impacts from the adoption of changes to the Air Quality Conditions of Certification. Therefore, no significant adverse effects on property owners would result from the adoption of the changes proposed in this Amendment.

6.0 Proposed Changes to Air Quality Conditions of Certification

PERMITTED EQUIPMENT DESIGNATIONS

S-1 Combustion Gas Turbine #1 with Water Injection, General Electric LM6000PC Sprint, natural gas fired, 49.4 MW, 500 MM BTU/hr (HHV) maximum heat input rating; abated by A-1 Oxidation Catalyst and A-2 Selective Catalytic Reduction System.

S-2 Combustion Gas Turbine #2 with Water Injection, General Electric LM6000PC Sprint, natural gas fired, 49.4 MW, 500 MM BTU/hr (HHV) maximum heat input rating; abated by A-3 Oxidation Catalyst and A-4 Selective Catalytic Reduction System.

S-3 Combustion Gas Turbine #3 with Water Injection, General Electric LM6000PC Sprint, natural gas fired, 49.4 MW, 500 MM BTU/hr (HHV maximum heat input rating; abated by A-5 Oxidation Catalyst and A-6 Selective Catalytic Reduction System.

S-4 Combustion Gas Turbine #4 with Water Injection, General Electric LM6000PC Sprint, natural gas fired, 49.4 MW, 500 MM BTU/hr (HHV) maximum heat input rating; abated by A-7 Oxidation Catalyst and A-8 Selective Catalytic Reduction System.

S-5 Fire Pump Diesel Engine, **~~John Deere~~** **Clark** Model **~~JDFP-06WR~~JW6H-UF40 or equivalent model of higher tier rating**, **~~290~~** **300** bhp, **~~13.5~~** **14.5** gal/hr.

S-7 Heat Recovery Steam Generator #1, equipped with low-NOx Duct Burners, 139 MM BTU/hr abated by A-1 Oxidation Catalyst and A-2 Selective Catalytic Reduction System.

S-8 Heat Recovery Steam Generator #2, equipped with low-NOx Duct Burners, 139 MM BTU/hr abated by A-3 Oxidation Catalyst and A-4 Selective Catalytic Reduction System.

S-9 Heat Recovery Steam Generator #3, equipped with low-NOx Duct Burners, 139 MM BTU/hr abated by A-5 Oxidation Catalyst and A-6 Selective Catalytic Reduction System.

S-10 Heat Recovery Steam Generator #4, equipped with low-NOx Duct Burners, 139 MM BTU/hr abated by A-7 Oxidation Catalyst and A-8 Selective Catalytic Reduction System.

S-11 Six-Cell Cooling Tower, 73,000 gallons per minute.

AQ-11 Within **one hundred and twenty** **~~sixty~~** **(120~~60~~**) days of startup, the owner/operator shall conduct a District approved source test using external continuous emission monitors to determine compliance with AQ-**19~~10~~ and AQ-20**. The source test shall determine NOx, CO, and POC emissions during start-up and shutdown of the gas turbines. **~~The POC emissions shall be analyzed for methane and ethane to account for the presence of unburned natural gas.~~** The source test shall include a minimum of three start-up and three shutdown periods. Thirty (30) days before the execution

of the source tests, the owner/operator shall submit to the District a detailed source test plan designed to satisfy the requirements of this part. The owner/operator shall be notified of any necessary modifications to the plan within twenty (20) working days of receipt of the plan; otherwise, the plan shall be deemed approved. The Owner/Operator shall incorporate the District comments into the test plan. The owner/operator shall notify the District within ten (10) days prior to the planned source testing date. Source test results shall be submitted to the District within sixty (60) days of the source testing date. These results can be used to satisfy applicable source testing requirements in AQ-26 below. (Basis: offsets.)

Verification: The project owner/operator shall submit the source test plan and results as required in the time frames indicated in this Condition of Certification.

Normal Operation Permit Conditions:

AQ-19 Emissions Limits: The project owner shall operate the facility such that none of the following limits are exceeded:

a. The emissions of oxides of nitrogen (as NO2) from emission points P-1, P-2, P-3, and P-4 (combined exhaust of gas turbine/HRSG power trains S-1 & S-7, S-2 & S-8, S-3 & S-9, and S-4 & S-10,respectively) each shall not exceed 2.0 ppmvd @ 15% O2 (1-hour ~~**rolling**~~ average), except during periods of gas turbine startup and shutdown and shall not exceed 4.68 lb/hour (1-hour ~~**rolling**~~ average) except during periods of gas turbine startup as defined in this permit. The NOx emission concentration shall be verified by a District-approved continuous emission monitoring system (CEMS) and during any required source test. (Basis: BACT.)

b. Emissions of ammonia from emission points P-1, P-2, P-3, and P-4 (combined exhaust of gas turbine/HRSG power trains S-1 & S-7, S-2 & S-8, S-3 & S-9, and S-4 & S-10, respectively) each shall not exceed 5 ppmvd @ 15% O2 (3-hour rolling average), except during periods of start-up or shut-down as defined in this permit. The ammonia emission concentration shall be verified by the continuous recording of the ratio of the ammonia injection rate to the NOx inlet rate into the SCR control system (**using a District-approved ammonia slip calculation and/or other method approved by the District** ~~**molar ratio**~~). ~~**The maximum allowable NH3/NOx molar ratio shall be determined during any required source** test, and shall not be exceeded until reestablished through another valid source test~~. (Basis: BAAQMD Toxics Risk Regulation 2-5**)**

c. Emissions of carbon monoxide (CO) from emission points P-1, P-2, P-3, and P-4 (combined exhaust of gas turbine/HRSG power trains S-1 & S-7, S-2 & S-8, S-3 & S-9, and S-4 & S-10, respectively) each shall not exceed 2.0 ppmvd @ 15 % O2 (1-hour ~~**rolling**~~ average), except during periods of start-up or shut-down as defined in this permit; and shall not exceed 2.85 lb/hr (1-hour ~~**rolling**~~ average) except during periods of start-up as defined in this permit. The CO emission

concentration shall be verified by a District-approved CEMS and during any required source test. (Basis: BACT.)

d. Emissions of precursor organic compounds (POC) from emission points P-1, P-2, P-3, and P-4 (combined exhaust of gas turbine/HRSG power trains S-1 & S-7, S-2 & S-8, S-3 & S-9, and S-4 & S-10, respectively) each shall not exceed 1 ppmvd @ 15% O2 (1-hour ~~rolling~~ average), except during periods of gas turbine start-up or shut-down as defined in this permit; and shall not exceed 0.81 lb/hr (1-hour ~~rolling~~ average) except during periods of start-up as defined in this permit. The POC emission concentration shall be verified during any required source test. (Basis: BACT.)

Verification: The project owner shall verify compliance with this Condition of Certification in each quarterly report required by Condition of Certification AQ-34.

AQ-20 Turbine Start-up: The project owner shall ensure that the regulated air pollutant mass emission rates from each of the Gas Turbines (S-1**, S-2,** ~~&~~ S-3**, and S-4**) during a start-up does not exceed the limits established below. (Basis: Cumulative increase, BACT)

	Duration (Minutes)	NOx (lb/Event)	CO (lb/event)	POC (lb/event)
Start-Up	120	41	20	2

Verification: The project owner shall verify compliance with this Condition of Certification in each quarterly report required by Condition of Certification AQ-34.

AQ-21 Turbine Shutdown: The project owner shall operate the gas turbines so that the duration of **operation in Gas Turbine** ~~a~~ **S**~~s~~hutdown **Mode** does not exceed 30 minutes per event, or other time period based on good engineering practice that has been approved in advance by the BAAQMD. ~~**Shutdown begins with the initiation of the turbine shutdown sequence and ends with the cessation of turbine firing.**~~ (Basis: Cumulative increase)

Verification: The project owner shall verify compliance with this Condition of Certification in each quarterly report required by Condition of Certification AQ-34.

AQ-22 Mass Emission Limits: The project owner shall operate the LECEF so that the mass emissions from the S-1, S-2, S-3 & S-4 Gas Turbines and S-7, S-8, S-9, & S-10 HRSGs do not exceed the daily and annual mass emission limits specified below. The project owner shall implement process computer data logging that includes running emission totals to demonstrate compliance with these limits so that no further calculations are required.

Mass Emission Limits (Including Gas Turbine Start-ups and Shutdowns)

Pollutant	Each Turbine/HRSG Power Train (lb/day)	All 4 Turbine/HRSG Power Trains (lb/day)	All 4 Turbine/HRSG Power Trains (ton/yr)
NOx (as NO_2)	175.6	702.4	94.1
POC	20.2	80.8	12.3
CO	97.0	388.0	53.4
SOx (as SO_2)			6.43
PM_{10}			38.5
NH_3	104	416	56.9

The daily mass limits are based upon calendar day per the definitions section of the permit conditions. Compliance with the daily limits shall be based on ~~calendar average~~ one-hour readings through the use of process monitors (e.g., fuel use meters)**,** CEMS, source test results, and the monitoring, record keeping and reporting conditions of this permit. If any part of the CEM involved in the mass emission calculations is inoperative for **any entire clock hour** ~~more than three consecutive hours~~ of plant operation, the mass data for the period of inoperat**ion**~~ive~~ shall be calculated using **missing data procedures** ~~a District-approved alternate calculation method~~. The annual mass limits are based upon a rolling **12-calendar month period** ~~8,760-hour period ending on the last hour. Compliance with the annual limits for NOx, POC, and SOx shall be demonstrated in the same manner as for the daily limits~~. Compliance with the ~~annual~~ emissions limits for PM_{10}**,** ~~and~~ SO_2**, and POC** from each gas turbine shall be calculated by multiplying turbine fuel usage times an emission factor determined by source testing of the turbine conducted in accordance with Part 26 of the BAAQMD permit. The emission factor for each turbine shall be based on the average of the emissions rates observed during the 4 most recent source tests on that turbine (or, prior to the completion of 4 source tests on a turbine, on the average of the emission rates observed during all source tests on the turbine). (Basis: cumulative increase, record keeping.)

Verification: The project owner shall verify compliance with this Condition of Certification in each quarterly report required by Condition of Certification AQ-34.

AQ-24 Operational Limits: In order to comply with the mass emission limits of this rule, the project owner shall operate the gas turbines and HRSGs so that they comply with the following operational limits:

a. Heat input limits (Higher Heating Value):

	Each Gas Turbine w/o Duct Burner	Each Gas Turbine w/Duct Burner
Hourly:	500 MM BTU/hr	639 MM BTU/hr
Daily:	12,000 MM BTU/day	15,336 MM BTU/day

Four Turbine/HRSG Power Trains combined:	18,215,000 MM BTU/year

b. Only PUC-Quality natural gas (General Order 58-a) shall be used to fire the gas turbines and HRSGs. The total sulfur content of the natural gas shall not exceed 1.0 gr/100 scf. To demonstrate compliance with this sulfur content limit, the project owner shall **obtain** ~~**sample and analyze the gas from each supply source at least monthly to determine**~~ the sulfur content **from each source of fuel gas at least monthly** ~~**of the gas, in addition to any monitoring requirements specified in condition 29**~~. (Basis: BACT for SO_2 and PM_{10}.)

c. The project owner of the gas turbines and HRSGs shall demonstrate compliance with the daily and annual NOx and CO emission limits listed in AQ-22 by maintaining running mass emission totals based on CEM data.(Basis: Cumulative increase)

Verification: The project owner shall verify compliance with this Condition of Certification in each quarterly report required by Condition of Certification AQ-34.

AQ-25 Monitoring Requirements: The owner/operator shall ensure that each gas turbine/HRSG power train complies with the following monitoring requirements:

a. The gas turbine/HRSG exhaust stack shall be equipped with permanent fixtures to enable the collection of stack gas samples consistent with EPA test methods.

b. The ammonia injection system shall be equipped with **1)** an operational ammonia flow meter **accurate to plus or minus five percent at full scale and shall be calibrated at least once every twelve months,** and **2) an** injection pressure indicator ~~**accurate to plus or minus five percent at full scale and shall be calibrated at least once every twelve months**~~.

c. The gas turbine/HRSG exhaust stacks shall be equipped with continuously recording emissions monitor(s) for NOx, CO and O_2. Continuous emissions monitors **for CO** shall comply with the requirements of 40 CFR Part 60, Appendices B and F**.** ~~**,**~~ **Continuous emissions monitors for NOx and O_2 shall comply with the requirements of** ~~**and**~~ 40 CFR Part 75**.** ~~**, and**~~ **All such monitors** shall be capable of monitoring concentrations and mass emissions during normal operating conditions and during gas turbine startups and shutdowns.

d. The fuel heat input rate shall be continuously recorded using District-approved fuel flow meters along with quarterly fuel compositional analyses for the fuel's higher heating value (wet basis).

Verification: The owner/operators shall make access available to the facility and records upon request as set forth in Condition of Certification AQ-15.

AQ-26 Source Testing/RATA: Within **one hundred and twenty** ~~**ninety**~~ (**120**~~**90**~~) days of the startup of the gas turbines and HRSGs, and at a minimum **of every 4th 40 CFR Part 75 operating quarter** ~~**on an annual basis**~~ thereafter, the owner/operator shall

perform a relative accuracy test audit (RATA) on the **CO analyzer in accordance with 40 CFR Part 60 and the NOx and O_2 analyzers in accordance with 40 CFR Part 75.** ~~**CEMS in accordance with 40 CFR Part 60 Appendix B Performance Specifications and a source test shall be performed.**~~ Additional source testing may be required at the discretion of the District to address or ascertain compliance with the requirements of this permit. The written test results of the source tests shall be provided to the District within **sixty (60)** ~~**thirty**~~ days after testing. A complete test protocol shall be submitted to the District no later than 30 days prior to testing, and notification to the District at least ten days prior to the actual date of testing shall be provided so that a District observer may be present. The source test protocol shall comply with the following: measurements of NOx, CO, POC, and stack gas oxygen content shall be conducted in accordance with ARB Test Method 100; measurements of PM10 shall be conducted in accordance with ARB Test Method 5; and measurements of ammonia shall be conducted in accordance with Bay Area Air Quality Management District test method ST-1B. Alternative test methods, and source testing scope, may also be used to address the source testing requirements of the permit if approved in advance by the District. The initial and **periodic** ~~**annual**~~ source tests shall **be conducted to show compliance with Conditions 19(a), 19(b), 19(c) and 19(d), and shall** include those parameters specified in the approved test protocol, and shall at a minimum include the following:

a. NOx – ppmvd at 15% O_2, ~~**and**~~ lb/MMBtu **and lb/hr** (as NO_2)
b. Ammonia – ppmvd at 15% O_2 (Exhaust)
c. CO – ppmvd at 15% O_2, ~~**and**~~ lb/MMBtu **and lb/hr** (Exhaust)
d. POC – ppmvd at 15% O_2, ~~**and**~~ lb/MMBtu **and lb/hr** (Exhaust)
e. PM_{10} – lb/hr (Exhaust)
f. SOx – lb/hr (**based on sulfur content of fuel** ~~**Exhaust**~~)
g. Natural gas consumption, fuel High Heating Value (HHV), and total fuel sulfur content
h. Turbine load in megawatts
i. Stack gas flow rate (DSCFM) calculated according to procedures in U.S. EPA Method 19
j. Exhaust gas temperature (°F)
k. Ammonia injection rate (lb/hr or moles/hr)
l. Water injection rate for each turbine at S-1, S-2, S-3, & S-4

(Basis: source test requirements & monitoring)

Verification: At least 30 days prior to the date of each source test, the owner/operator shall submit a source test protocol to the District and the CPM for approval. At least 10 days prior to the testing date, the owner/operator shall notify the District and the CPM of the date of the source test. No more than 30 days after the date of the source test, the owner/operator shall submit the results of the RATA and source test to the District and the CPM for approval.

AQ-27 Within **120** ~~**60**~~ days of start-up of the LECEF in combined-cycle configuration and ~~**on a semi-**~~ **an** annual basis thereafter, the project owner shall conduct a District approved source test on exhaust points P-1, P-2, P-3, and P-4 while each Gas

Turbine/HRSG power train is operating at maximum load to demonstrate compliance with the SAM emission limit specified in AQ-23. The project owner shall test for (as a minimum) ~~**SO2, SO3 and**~~ SAM. ~~**After acquiring one year of source test data on these units, the project owner may petition the District to switch to annual source testing if test variability is acceptably low as determined by the District.**~~ (Basis: Regulation 2-2-306, SAM Periodic Monitoring)

Verification: The project owner shall verify compliance with this Condition of Certification in each quarterly report required by Condition of Certification AQ-34.

AQ-32 Recordkeeping: The owner/operator shall maintain the following records. The format of the records is subject to District review and approval:

a. hourly, daily, quarterly and annual quantity of fuel used and corresponding heat input rates
b. the date and time of each occurrence, duration, and type of any startup, shutdown, or malfunction along with the resulting mass emissions during such time period
c. emission measurements from all source testing, RATAs and fuel analyses
d. daily, quarterly and annual hours of operation
e. hourly records of NOx and CO emission concentrations and hourly ammonia injection rates and ammonia/NOx ratio
f. for the continuous emissions monitoring system; **quarterly audits** ~~**performance testing**~~, evaluations, calibrations, checks, maintenance, adjustments, and any period of non-operation of any continuous emissions monitor. (Basis: record keeping.)

Verification: The owner/operators shall make access available to the facility and records upon request as set forth in Condition of Certification AQ-15.

AQ-34 Reporting: The owner/operator shall submit to the District a written report for each calendar quarter, within 30 days of the end of the quarter, which shall include all of the following items:

a. Daily and quarterly fuel use and corresponding heat input rates
b. Daily and quarterly mass emission rates for all criteria pollutants during normal operations and during other periods (startup/shutdown, breakdowns)
c. Time intervals, date, and magnitude of excess emissions
d. Nature and cause of the excess emission, and corrective actions taken
e. Time and date of each period during which the CEM was inoperative, including zero and span checks, and the nature of system repairs and adjustments
f. A negative declaration when no excess emissions occurred
g. **Fuel** ~~**Results of quarterly fuel analyses for**~~ HHV **and total sulfur content records**.

(Basis: recordkeeping & reporting)

Verification: The owner/operator shall submit to the District and the CPM for approval, written reports for each calendar quarter, within thirty (30) days of the end of the quarter. Each quarterly report will also include, at a minimum, all required compliance documentation for the following conditions: AQ-12, 13, 19, 20, 21, 22, 23, 24, 27, 30, 31, 36, 37, 39, 40, 46, and 47. The report submitted in January of each year shall include an annual summary of the four quarterly reports of the preceding year.

AQ-44 To demonstrate compliance with AQ-43, **after each source test performed pursuant to Part 45,** the owner/operator shall calculate and record ~~**on an annual basis**~~ the maximum projected annual emissions for the compounds specified in AQ-43 using the maximum heat input of 18,215,000 MMBtu/year and the highest emission factor (pound of pollutant per MMBtu) determined by any source test of the S-1, S-2, S-3 & S-4 Gas Turbines and S-7, S-8, S-9, and S-10 HRSGs. If this calculation method results in an unrealistic mass emission rate the applicant may use an alternate calculation, subject to District approval. (Basis: TRMP.)

Verification: Within 60 days of the completion of any health risk assessment, the owner/operator shall submit a complete report to the District and the CPM for review.

AQ-45 Within **120** ~~**60**~~ days of start-up of the Los Esteros Critical Energy Facility and on a biennial (once every two years) thereafter, the project owner shall conduct a District-approved source test at exhaust point P-1, P-2, P-3, or P-4 while the Gas Turbines are at maximum allowable operating rates to demonstrate compliance with Part 434. If three consecutive biennial source tests demonstrate that the annual emission rates for any of the compounds listed above calculated pursuant to part 435 are less than the BAAQMD Toxic Risk Management Policy trigger levels shown below, then the project owner may discontinue future testing for that pollutant.

Formaldehyde < 132 lb/yr
Acetaldehyde < 288 lb/yr
Specified PAHs < 0.18 lb/yr
Acrolein < 15.6 lb/yr
(Basis: BAAQMD 2-1-316, Regulation 2-5)

Verification: At least 20 days prior to the intended source test date, the project owner shall submit a source testing methodology to the District and CPM for review and approval. Within 30 days of the source testing date, all test results shall be submitted to the District and the Energy Commission CPM.

DEFINITIONS

Clock Hour:	Any continuous 60-minute period beginning on the hour.
Calendar Day:	Any continuous 24-hour period beginning at 12:00 AM or 0000 hours.
Year:	Any consecutive twelve-month period of time.
Heat Input:	All heat inputs refer to the heat input at the higher heating value

	(HHV) of the fuel, in BTU/scf.
Firing Hours:	Period of time, during which fuel is flowing to a unit, measured in fifteen minute increments.
MMBTU:	million British thermal units
Gas Turbine Startup Mode:	The lesser of the first 120 minutes of continuous fuel flow to the Gas Turbine after fuel flow is initiated or the period of time from Gas Turbine fuel flow initiation until the Gas Turbine achieves two consecutive CEM data points in compliance with the emission concentration limits of conditions 19(a)**, 19(b),** and 19(c) and is in compliance with the emission limits contained in 19(a)**, 19(b), and 19(c)** ~~**through 19(d)**~~.
Gas Turbine Shutdown Mode:	The lesser of the 30 minute period immediately prior to the termination of fuel flow to the Gas Turbine or the period of time from non-compliance with any requirement listed in Conditions 19(a) through 19(d) until termination of fuel flow to the Gas Turbine.
Corrected Concentration:	The concentration of any pollutant (generally NOx, CO or NH3) corrected to a standard stack gas oxygen concentration. For a Gas Turbine emission point, the standard stack gas oxygen concentration is 15% O2 by volume on a dry basis.
Commissioning Activities:	All testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and the construction contractor to insure safe and reliable steady state operation of the gas turbines, heat recovery steam generators, steam turbine, and associated electrical delivery systems.
Commissioning Period	The Period shall commence when all mechanical, electrical, and control systems are installed and individual system completed, or when a gas turbine is first fired following the installation of the duct burners and associated equipment, whichever occurs first. The period shall terminate when the plant has completed performance testing, is available for commercial operation, and has initiated sales of power to the grid. The Commissioning Period shall not exceed 180 days under any circumstances.
Alternate Calculation:	A District approved calculation used to calculate mass emission data during a period when the CEM or other monitoring system is not capable of calculating mass emissions.
Precursor Organic Compounds (POCs):	Any compound of carbon, excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.