State of California | The Resources Agency of California

Memorandum

To: Vice Chair Jackalyne Pfannenstiel, Presiding
Chairman Joseph F. Desmond, Second Member

Date : July 14, 2005

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From : **California Energy Commission** - Bob Eller, Project Manager
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Subject: **Staff Air Quality Addendum and Bike Path Condition–Los Esteros Critical Energy Facility 2 (03-AFC-2)**

Pursuant to the Committee's direction at the June 30, 2005, Evidentiary Hearing, attached is the Air Quality Addendum to staff's May 26, 2005, Final Staff Assessment. As discussed at the Evidentiary Hearing, the purpose of this addendum is to rectify any differences between staff's testimony and the Final Determination of Compliance filed on June 28, 2005, by the Bay Area Air Quality Management District.

At the Evidentiary Hearing the Committee also requested that staff prepare a Condition of Certification to encourage timely reconstruction of the bike path near the facility. Staff has worked with the applicant to develop the Condition of Certification contained in Attachment B in response to the Committee's request.

ATTACHMENT A

AIR QUALITY FSA ADDENDUM

Testimony of Gabriel D. Taylor

INTRODUCTION

On May 27, 2005, staff published a Final Staff Assessment (FSA) (CEC 2005b) for the Los Esteros Critical Energy Facility Phase 2 (Los Esteros) conversion from simple cycle to combined cycle which included recommended air quality conditions of certification based on the Bay Area Air Quality Management District (District) Revised Preliminary Determination of Compliance (RPDOC) for Los Esteros (BAAQMD 2005a). On June 28, 2005, the District published a Final Determination of Compliance (FDOC) for Los Esteros (BAAQMD 2005b), which included a number of changes to conditions based on District responses to comments from the Energy Commission (BAAQMD 2005c), the U.S. Environmental Protection Agency (BAAQMD 2005d) and the applicant (BAAQMD 2005e). This document is an addendum to staff's FSA, containing proposed changes to the recommended air quality conditions of certification. It brings staff's recommended conditions into agreement with the changes in the District's permit conditions identified in the FDOC.

RECOMMENDED CHANGES

The District FDOC identified changes to six conditions, corresponding to staff's proposed conditions of certification AQ-10, 20, 21, 22, 24 and 35. In addition, staff would like to correct an error in staff condition AQ-SC9. These changes are presented here in underline strikethrough format along with an explanation for each change. New text is show as **bold double-underline**, and deleted text is show as **~~bold strikethrough~~**. For added clarity, the Condition of Certification section following this section presents a complete "clean" set of staff's recommended conditions for Los Esteros Phase 2, including all changes proposed here.

Changes to Condition AQ-10

The District proposes modification of **AQ-10** to correct an error in the RPDOC for the permitted POC, PM10 and SO2 limits during commissioning activities. These changes are consistent with the commissioning impact analysis prepared by the applicant, and do not pose any potential for significant impact. Staff supports these changes.

	Without Controls		With Controls	
a. NO_x (as NO_2)	1464 lb/day	102 lb/hr	1464 lb/day	61 lb/hr
b. CO	1056 lb/day	88 lb/hr	984 lb/day	41 lb/hr
c. POC (as CH_4)	288 lb/day		~~114~~ **288** lb/day	
d. PM10	~~60~~ **96** lb/day		~~60~~ **96** lb/day	
e. SO_2	~~53.6~~ **18.9** lb/day		~~53.6~~ **18.9** lb/day	

Changes to Condition AQ-20 and AQ-21

The District proposes changes to the definitions of startup and shutdown contained in conditions **AQ-20** and **AQ-21**, based on comments from U.S. EPA (BAAQMD 2005d,

pg. 1). Staff believes it is important to clearly define both startup and shutdown for any facility, and supports both the U.S. EPA and District effort to do so. Staff does not fully agree with the language proposed by the District in the FDOC to define startup and shutdown (please see CEC 2004b, pg. 2, for an example of staff proposed definitions for startup and shutdown). However, staff does not believe the District's proposed startup and shutdown definitions will cause or contribute to a significant impact, and in the interest of avoiding minor differences between definitions in the District's FDOC and what staff proposes, staff supports the District's proposed changes to AQ-20 and AQ-21.

AQ-20 Turbine Startup: The owner/operator shall operate the gas turbines so that the duration of a startup **is kept to a minimum, consistent with good engineering practice.** ~~**does not exceed 240 minutes per event, or other time period based on good engineering practice that has been approved in advance by the District.**~~ The startup period begins with the turbine's initial firing and continues until the unit is in compliance with all applicable emission concentration limits. **For purposes of this condition, a startup period of 240 minutes or less shall be considered kept to a minimum consistent with good engineering practice. Should it be determined that good engineering practice requires a different time period for a startup, the owner/operator may operate the gas turbines such that startups do not exceed that time period, as approved in writing by the APCO.** (Basis: **BACT** ~~**Cumulative increase**~~)

AQ-21 Turbine Shutdown: The owner/operator shall operate the gas turbines so that the duration of a shutdown **is kept to a minimum, consistent with good engineering practice.** ~~**does not exceed 30 minutes per event, or other time period based on good engineering practice that has been approved in advance by the District.**~~ Shutdown begins with the initiation of the turbine shutdown sequence and ends with the cessation of turbine firing. **For purposes of this Part, a shutdown period of 30 minutes or less shall be considered kept to a minimum consistent with good engineering practice. Should it be determined that good engineering practice requires a different time period for a shutdown, the owner/operator may operate the gas turbines such that shutdowns do not exceed that time period, as approved in writing by the APCO.**
(Basis: **BACT** ~~**Cumulative increase**~~)

Changes to Condition AQ-22

The District proposes changes to the CO mass emissions limits in **AQ-22** to correct a rounding error contained in the calculations on pg. 7 of the RPDOC. These changes bring the CO mass limits in AQ-22 into agreement with the CO limits in calculations and conditions elsewhere in the FDOC:

Mass Emission Limits (Including Gas Turbine Startups 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)
NO_x (as NO_2)	252.4	1,009.6	99
POC	80.2	320.8	28.3
CO	~~419.6~~ **417.2**	~~1,678.4~~ **1668.8**	~~98.6~~ **98.5**
SO_x (as SO_2)	41.6	166.4	8.4
PM10	60	240	43.8
NH_3	198	792	118

Changes to Condition AQ-24

The District proposes to change **AQ-24** to correct the daily heat rate for the turbines to be based on the hourly heat rate times twenty-four hours. The erroneous 11,342 MMBtu/day value was based on the 472.6 MMBtu/hour value specified in the current Los Esteros simple cycle permit, rather than the 500 MMBtu/hr value proposed in the current Los Esteros Phase 2 permit analysis and included in AQ-24. Staff supports this correction.

	Each Gas Turbine w/o Duct Burner	Each Gas Turbine w/Duct Burner	Four Turbine/HRSGs Power Trains combined
Hourly:	500 MMBtu/hr	639 MMBtu/hr	--
Daily:	~~11,342~~ **12,000** MMBtu/day	15,336 MMBtu/day	--
Yearly:	--	--	18,215,000 MMBtu/year

Changes to Condition AQ-35

The District proposes two changes to **AQ-35**. First, the required POC ERC mass should be changed from 7.3 tons to 7.5 tons to correct a calculation error made in the RPDOC (BAAQMD 2005c, pg. 2). Second, language should be added to require submittal of 27.945 tons of NO_x ERC to reflect the applicant's commitment to submit all required NO_x emission reductions credits in the form of NO_x ERC, as opposed to submitting some or all of the required NO_x reductions in the form of POC ERC as is allowed by District rule. Staff supports both of these changes.

AQ-35 Emission Offsets: The owner/operator shall provide ~~7.3~~ **7.5** tons of valid POC emission reduction credits **and 27.945 tons of valid NO_x emission reduction credits** prior to the issuance of the Authority to Construct. The owner/operator shall deliver the ERC certificates to the District Engineering Division at least ten days prior to the issuance of the authority to construct. (Basis: Offsets)

Changes to Condition AQ-SC9

Staff would like to correct an error in proposed staff condition **AQ-SC9**. As calculated in the FSA (CEC 2005b, pg. 4.1-30), and supported by both the applicant (Sierra 2005b, pg. 1) and the District (BAAQMD 2005b, Table 9 on pg. 24), the correct amount of

additional SO_x ERCs required is 13.730 tons, not 14.250 tons. This is a correction that is consistent with the correct value as shown in the text of the FSA and supported by all other parties.

AQ-SC9 The project owner/operator shall submit documentation proving the previous withdrawal of 34.11 tons of SO_x Emissions Reductions Credits (ERCs). The project owner/operator shall further surrender an additional ~~**14.250**~~ **13.730** tons of SO_x ERCs.

Verification: The project owner/operator shall submit proof of previous withdrawal of 34.11 tons of SO_x ERCs prior to the start of construction on the Combined Cycle conversion of the project. The project owner/operator shall surrender the remaining ~~**14.250**~~ **13.730** tons of SO_x ERCs to the district for permanent withdrawal from the bank prior to first fire of any gas turbine following the installation of the duct burners and associated equipment. The owner/operator shall submit all documentation of the surrender to the CPM by the same date. Copies of documentation from the district proving permanent withdrawal of any submitted ERCs from the district bank shall be submitted by the owner/operator to the CPM as soon as issued by the district.

CONDITIONS OF CERTIFICATION

The following is a complete "clean" set of proposed conditions of certification for Los Esteros Phase 2. These conditions are in agreement with the District FDOC (BAAQMD 2005b), and include all proposed changes highlighted above.

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 time beginning with the introduction of continuous fuel flow to the Gas Turbine until the requirements listed in AQ-19 are satisfied. In no case shall the duration of a startup exceed 240 minutes.
Gas Turbine Shutdown Mode:	The time from non-compliance with any requirement listed in AQ-19 until termination of fuel flow to the Gas Turbine, but not to exceed 30 minutes.
Corrected Concentration:	The concentration of any pollutant (generally NO_x, CO or NH_3) corrected to a standard stack gas oxygen concentration. For an emission point (exhaust of a Gas Turbine) the standard stack gas oxygen concentration is 15% O_2 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 startup has been 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 to the power exchange. 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.

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 Model JDFP-06WR, 290 bhp, 13.5 gal/hr

S-7 Heat Recovery Steam Generator #1, equipped with low-NO_x 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-NO_x 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-NO_x 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-NO_x 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

STAFF CONDITIONS OF CERTIFICATION

AQ-SC1 Air Quality Construction Mitigation Manager (AQCMM): The project owner shall designate and retain an on-site AQCMM who shall be responsible for directing and documenting compliance with conditions **AQ-SC3**, **AQ-SC4** and **AQ-SC5** for the entire project site and linear facility construction. The on-site AQCMM may delegate responsibilities to one or more AQCMM Delegates. The AQCMM and AQCMM Delegates shall have full access to all areas of construction on the project site and linear facilities, and shall have the authority to stop any or all construction activities as warranted by applicable construction mitigation conditions. The AQCMM and AQCMM Delegates may have other responsibilities in addition to those described in this condition. The AQCMM shall not be terminated without written consent of the CPM.

Verification: At least 60 days prior to the start of ground disturbance, the project owner shall submit to the CPM for approval, the name, resume, qualifications, and contact information for the on-site AQCMM and all AQCMM Delegates. The AQCMM and all Delegates must be approved by the CPM before the start of ground disturbance.

AQ-SC2 Air Quality Construction Mitigation Plan (AQCMP): The project owner shall provide an AQCMP, for approval, which details the steps that will be taken and the reporting requirements necessary to ensure compliance with conditions **AQ-SC3**, **AQ-SC4** and **AQ-SC5**.

Verification: At least 60 days prior to the start of any ground disturbance, the project owner shall submit the AQCMP to the CPM for approval. The CPM will notify the project owner of any necessary modifications to the plan within 30 days from the date of receipt.

AQ-SC3 Construction Fugitive Dust Control: The AQCMM shall submit documentation to the CPM in each Monthly Compliance Report (MCR) that demonstrates compliance with the following mitigation measures for the purposes of preventing all fugitive dust plumes from leaving the Project. Any deviation from the following mitigation measures shall require prior CPM notification and approval.

a) All unpaved roads and disturbed areas in the project and linear construction sites shall be watered as frequently as necessary to comply with the dust mitigation objectives of **AQ-SC4** (the prevention of fugitive dust plumes). The frequency of watering can be reduced or eliminated during periods of precipitation.

b) No vehicle shall exceed 10 miles per hour within the construction site.

c) The construction site entrances shall be posted with visible speed limit signs.

d) All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.

e) Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.

f) All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.

g) All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM.

h) Construction areas adjacent to any paved roadway shall be provided with sandbags or other measures as specified in the Storm Water Pollution Prevention Plan (SWPPP) to prevent run-off to roadways.

i) All paved roads within the construction site shall be swept at least twice daily (or less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.

j) At least the first 500 feet of any public roadway exiting from the construction site shall be swept at least twice daily (or less during periods of precipitation) on days when construction activity occurs or on any other day when dirt or runoff from the construction site is visible on the public roadways.

k) All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or shall be treated with appropriate dust suppressant compounds.

l) All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.

m) Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.

Verification: The project owner shall include in the MCR (1) a summary of all actions taken to maintain compliance with this condition, (2) copies of any complaints filed with

the air district in relation to project construction, and (3) any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC4 Dust Plume Response Requirement: The AQCMM or an AQCMM Delegate shall monitor all construction activities for visible dust plumes. Observations of visible dust plumes that have the potential to be transported (1) off the project site or (2) 200 feet beyond the centerline of the construction of linear facilities or (3) within 100 feet upwind of any regularly occupied structures not owned by the project owner indicate that existing mitigation measures are not resulting in effective mitigation. The AQCMM or Delegate shall implement the following procedures for additional mitigation measures in the event that such visible dust plumes are observed:

Step 1: The AQCMM or Delegate shall direct more intensive application of the existing mitigation methods within 15 minutes of making such a determination.

Step 2: The AQCMM or Delegate shall direct implementation of additional methods of dust suppression if step 1 specified above fails to result in adequate mitigation within 30 minutes of the original determination.

Step 3: The AQCMM or Delegate shall direct a temporary shutdown of the activity causing the emissions if step 2 specified above fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shutdown source. The owner/operator may appeal to the CPM any directive from the AQCMM or Delegate to shut down an activity, provided that the shutdown shall go into effect within one hour of the original determination, unless overruled by the CPM before that time.

Verification: The AQCMP shall include a section detailing how the additional mitigation measures will be accomplished within the time limits specified.

AQ-SC5 Diesel-Fueled Engines Control: The AQCMM shall submit to the CPM, in the Monthly Compliance Report (MCR), a construction mitigation report that demonstrates compliance with the following mitigation measures for the purposes of controlling diesel construction-related emissions. Any deviation from the following mitigation measures shall require prior CPM notification and approval.

a) All diesel-fueled engines used in the construction of the facility shall be fueled only with ultra-low sulfur diesel, which contains no more than 15 ppm sulfur.

b) All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM showing that the engine meets the conditions set forth herein.

c) All construction diesel engines, which have a rating of 100 hp or more, shall meet, at a minimum, the Tier 1 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, section 2423(b)(1) unless certified by the on-site AQCMM that such engine is not available for a particular item of equipment. In the event a Tier 1 engine is not available for any off-road engine larger than 100 hp, that engine shall be equipped with a catalyzed diesel particulate filter (soot filter), unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types. For purposes of this condition, the use of such devices is "not practical" if, among other reasons:

(1) There is no available soot filter that has been certified by either the California Air Resources Board or U.S. Environmental Protection Agency for the engine in question; or

(2) The construction equipment is intended to be on-site for ten (10) days or less.

(3) The CPM may grant relief from this requirement if the AQCMM can demonstrate that they have made a good faith effort to comply with this requirement and that compliance is not possible.

d) The use of a soot filter may be terminated immediately if one of the following conditions exists, provided that the CPM is informed within ten (10) working days of the termination:

(1) The use of the soot filter is excessively reducing normal availability of the construction equipment due to increased downtime for maintenance, and/or reduced power output due to an excessive increase in backpressure.

(2) The soot filter is causing or is reasonably expected to cause significant engine damage.

(3) The soot filter is causing or is reasonably expected to cause a significant risk to workers or the public.

(4) Any other seriously detrimental cause which has the approval of the CPM prior to the termination being implemented.

e) All heavy earthmoving equipment and heavy duty construction related trucks with engines meeting the requirements of (c) above shall be properly maintained and the engines tuned to the engine manufacturer's specifications.

f) All diesel heavy construction equipment shall not remain running at idle for more than five minutes, to the extent practical.

Verification: The project owner shall include in the MCR (1) a summary of all actions taken to maintain compliance with this condition, (2) copies of all diesel fuel purchase records, (3) a list of all heavy equipment used on site during that month, including the owner of that equipment and a letter from each owner indicating that equipment has

been properly maintained, and (4) any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC6 The project owner shall submit to the CPM for review and approval any modification proposed by the project owner to any project air permit. The project owner shall submit to the CPM for review any modification to any air permit for the project proposed by the District or any other agency.

Verification: The project owner shall submit any proposed air permit modification to the CPM within five business days of its submittal either by 1) the project owner to an agency, or 2) receipt of proposed modifications from any agency. The project owner shall submit a final copy of any modified air permit to the CPM within 15 business days after the issue date on the permit.

AQ-SC7 The project shall surrender the emission offset credits listed in Appendix A or a modified list, as allowed by this condition, at the time that surrender is required by condition **AQ-35** (district permit Part 35). The project owner may request CPM approval for any substitutions or modification of credits listed in Appendix A. The CPM, in consultation with the District, may approve any such change to the ERC list provided that the project remains in compliance with all applicable laws, ordinances, regulations, and standards, the requested change(s) clearly will not cause the project to result in a significant environmental impact, and each requested change is consistent with applicable federal and state laws and regulations.

Verification: The project owner shall submit to the CPM a list of ERCs to be surrendered to the District at least 60 days prior to initial startup. If the CPM, in consultation with the District, approves a substitution or modification, the CPM shall file a statement of the approval with the commission docket and mail a copy of the statement to every person on the post-certification mailing list. The CPM shall maintain an updated list of approved ERCs for the project.

AQ-SC8 The project owner shall comply with all staff (AQ-SC) and district (AQ) Conditions of Certification. The CPM, in consultation with the District, may approve any change to a Condition of Certification regarding air quality, as an insignificant change, provided that: (1) the project remains in compliance with all applicable laws, ordinances, regulations, and standards, (2) the requested change clearly will not cause the project to result in a significant environmental impact, (3) no additional mitigation or offsets will be required as a result of the change, (4) no existing daily, quarterly, or annual permit limit will be exceeded as a result of the change, and (5) no increase in any daily, quarterly, or annual permit limit will be necessary as a result of the change.

Verification: The project owner shall notify the CPM in writing of any proposed change to a condition of certification pursuant to this condition and shall provide the CPM with any additional information the CPM requests to substantiate the basis for approval.

AQ-SC9 The project owner/operator shall submit documentation proving the previous withdrawal of 34.11 tons of SO_x Emissions Reductions Credits (ERCs). The

project owner/operator shall further surrender an additional 13.730 tons of SO_x ERCs.

Verification: The project owner/operator shall submit proof of previous withdrawal of 34.11 tons of SO_x ERCs prior to the start of construction on the Combined Cycle conversion of the project. The project owner/operator shall surrender the remaining 13.730 tons of SO_x ERCs to the district for permanent withdrawal from the bank prior to first fire of any gas turbine following the installation of the duct burners and associated equipment. The owner/operator shall submit all documentation of the surrender to the CPM by the same date. Copies of documentation from the district proving permanent withdrawal of any submitted ERCs from the district bank shall be submitted by the owner/operator to the CPM as soon as issued by the district.

AQ-SC10 The project owner shall report to the CPM the quantity of CO_2 emitted on an annual basis as a direct result of electricity generation.

Verification: CO_2 emissions shall be reported to the CPM once per calendar year, as part of the first quarterly compliance report submitted each year as required in Condition of Certification **AQ-34**.

AQ-SC11 The SCR catalyst shall be replaced, repaired or otherwise reconditioned within 12 months of the ammonia slip reaching 5 ppm @ 15 percent O_2 averaged over 24 hours. The SCR ammonia injection grid replacement, repair or reconditioning scheduled event may be canceled if the project owner can demonstrate to the CPM that, subsequent to the initial exceedance, the ammonia slip consistently remains below 5 ppm @ 15 percent O_2 averaged over 24 hours and that the initial exceedance does not accurately indicate expected future operating conditions.

Compliance with ammonia slip limits shall be demonstrated by using the following calculation procedure:

ammonia slip ppmv @ 15% O_2 = ((**a**-(**b**x**c**/1,000,000)) x 1,000,000 / **b**) x **d**

where:

a = ammonia injection rate(lb/hr)/17(lb/lb. mol),
b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol),
c = change in measured NO_x concentration ppmv at 15% O_2 across catalyst, and
d = correction factor.

The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip.

Verification: The project owner/operator shall include ammonia slip concentrations averaged on an hourly and 24-hour basis calculated via the protocol provided in each quarterly report required by Condition of Certification **AQ-34**. The project owner shall notify the CPM within 10 days of an exceedance of the 5 ppm ammonia slip limit herein. The project owner shall notify the CPM no less than 30 days prior to the scheduled date of the SCR catalyst replacement, repair, or reconditioning event. If the project owner finds that the exceedance of the 5 ppm ammonia slip limit does not accurately reflect expected future operation as provided for in this condition, the project owner shall

submit all relevant information to the CPM no less than 30 days prior to the scheduled date of the SCR catalyst replacement, repair or reconditioning event in order to cancel the event.

COMMISSIONING CONDITIONS OF CERTIFICATION

AQ-1 The owner/operator of the Los Esteros Critical Energy Facility shall minimize the emissions of carbon monoxide and nitrogen oxides from S-1, S-2, S-3 and S-4 Gas Turbines and S-7, S-8, S-9, and S-10 Heat Recovery Steam Generators to the maximum extent possible during the commissioning period. **AQ-1** through **AQ-11** shall only apply during the commissioning period as defined above. Unless noted, **AQ-12** through **AQ-49** shall only apply after the commissioning period has ended. (Basis: cumulative increase)

Verification: The project owner/operator shall specifically demonstrate compliance with this Condition of Certification as part of the Commissioning Plan and Monthly Commissioning Emissions Reports required by **AQ-5** and **AQ-10** respectively.

AQ-2 At the earliest feasible opportunity in accordance with the recommendations of the equipment manufacturers and the construction contractor, the owner/operator shall tune the S-1, S-2, S-3 and S-4 Gas Turbine combustors to minimize the emissions of carbon monoxide and nitrogen oxides. (Basis: cumulative increase)

Verification: The project owner/operator shall specifically demonstrate compliance with this Condition of Certification as part of the Commissioning Plan and Monthly Commissioning Emissions Reports required by **AQ-5** and **AQ-10** respectively.

AQ-3 At the earliest feasible opportunity and in accordance with the recommendations of the equipment manufacturers and the construction contractor, the owner/operator shall install, adjust and operate the SCR Systems (A-2, A-4, A-6 & A-8) and OC Systems (A-1, A-3, A-5 & A-7) to minimize the emissions of nitrogen oxides and carbon monoxide from S-1, S-2, S-3 and S-4 Gas Turbines and S-7, S-8, S-9, and S-10 Heat Recovery Steam Generators. (Basis: cumulative increase)

Verification: The project owner/operator shall specifically demonstrate compliance with this Condition of Certification as part of the Commissioning Plan and Monthly Commissioning Emissions Reports required by **AQ-5** and **AQ-10** respectively.

AQ-4 Coincident with the steady-state operation of SCR Systems (A-2, A-4, A-6, & A-8) and OC Systems (A-1, A-3, A-5, & A-7) pursuant to **AQ-3**, the owner/operator shall operate the facility in such a manner that the Gas Turbines (S-1, S-2, S-3 and S-4) comply with the NO_x and CO emission limitations specified in **AQ-19a** and **AQ-19c**. (Basis: BACT, offsets)

Verification: The project owner/operator shall specifically demonstrate compliance with this Condition of Certification as part of the Commissioning Plan and Monthly Commissioning Emissions Reports required by **AQ-5** and **AQ-10** respectively.

AQ-5 The owner/operator of the Los Esteros Critical Energy Facility shall submit a plan to the District Permit Services Division at least two weeks prior to first firing of S-1, S-2, S-3 & S-4 Gas Turbines and/or S-7, S-8, S-9, & S-10 HRSGs describing the procedures to be followed during the commissioning of the turbines in the combined-cycle configuration. The plan shall include a description of each commissioning activity, the anticipated duration of each activity in hours, and the purpose of the activity. The activities described shall include, but not be limited to, the tuning of the water injection, the installation and operation of the required emission control systems, the installation, calibration, and testing of the CO and NO_x continuous emission monitors, and any activities requiring the firing of the Gas Turbines (S-1, S-2, S-3 and S-4) without abatement by their respective SCR Systems. The Gas Turbines (S-1, S-2, S-3 and S-4) shall be fired in combined cycle mode no sooner than fourteen days after the District receives the commissioning plan. (Basis: cumulative increase)

Verification: The project owner/operator shall submit a Commissioning Plan to the District Permit Services Division and the CPM for approval at least two weeks prior to first fire of S-1, S-2, S-3 and S-4.

AQ-6 During the commissioning period, the owner/operator of the Los Esteros Critical Energy Facility shall demonstrate compliance with **AQ-8** through **AQ-10** through the use of properly operated and maintained continuous emission monitors and data recorders for the following parameters:

a. firing hours
b. fuel flow rates
c. stack gas nitrogen oxide emission concentrations,
d. stack gas carbon monoxide emission concentrations
e. stack gas oxygen concentrations.

The monitored parameters shall be recorded at least once every 15 minutes (excluding normal calibration periods or when the monitored source is not in operation) for the S-1, S-2, S-3 and S-4 Gas Turbines and S-7, S-8, S-9, and S-10 Heat Recovery Steam Generators. The owner/operator shall use District-approved methods to calculate heat input rates, nitrogen dioxide mass emission rates, carbon monoxide mass emission rates, and NO_x and CO emission concentrations, summarized for each clock hour and each calendar day. All records shall be retained on site for at least 5 years from the date of entry and made available to District personnel upon request.
(Basis: cumulative increase)

Verification: The project owner/operator shall specifically demonstrate compliance with this Condition of Certification as part of the Commissioning Plan and Monthly Commissioning Emissions Reports required by **AQ-5** and **AQ-10** respectively.

AQ-7 The owner/operator shall install, calibrate and make operational the District-approved continuous monitors specified in **AQ-6** prior to first firing of each turbine (S-1, S-2, S-3 and S-4 Gas Turbines) and HRSG (S-7, S-8, S-9, and S-10 Heat Recovery Steam Generators). After first firing of the turbine, the

owner/operator shall adjust the detection range of these continuous emission monitors as necessary to accurately measure the resulting range of CO and NOx emission concentrations. The type, specifications, and location of these monitors shall be subject to District review and approval.
(Basis: BAAQMD 9-9-501, BACT, offsets)

Verification: The project owner/operator shall notify the District and CPM of the date of expected first fire at least 30 days prior to first fire and shall make the project site available for inspection if desired by either the District or CPM.

AQ-8 The owner/operator shall not operate the facility such that the number of firing hours of S-1, S-2, S-3 and S-4 Gas Turbines and/or S-7, S-8, S-9, and S-10 Heat Recovery Steam Generators without abatement by SCR or OC systems exceed 250 hours during the commissioning period. Such operation of the S-1, S-2, S-3 and S-4 Gas Turbines without abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR or OC system in place. Upon completion of these activities, the owner/operator shall provide written notice to the District Permit Services and Enforcement Divisions and the unused balance of the 250 firing hours without abatement shall expire. (Basis: offsets)

Verification: The owner/operator shall provide written notice to the CPM and the District Permit Services & Enforcement Divisions within five business days of completion of all commissioning activities, at which time the unused balance of the 250 firing hours without abatement shall expire.

AQ-9 The total mass emissions of nitrogen oxides, carbon monoxide, precursor organic compounds, PM10, and sulfur dioxide that are emitted by the S-1, S-2, S-3 and S-4 Gas Turbines and S-7, S-8, S-9, and S-10 Heat Recovery Steam Generators during the commissioning period shall accrue towards the consecutive twelve-month emission limitations specified in **AQ-22**.
(Basis: offsets)

Verification: The project owner/operator shall specifically demonstrate compliance with this Condition of Certification as part of each Monthly Commissioning Emissions Report required by **AQ-10** and as part of the first Quarterly Operations Report required by **AQ-34** after the completion of commissioning.

AQ-10 The owner/operator shall not operate the facility such that the pollutant mass emissions from each turbine (S-1, S-2, S-3 and S-4 Gas Turbines) and corresponding HRSG (S-7, S-8, S-9, and S-10 Heat Recovery Steam Generators) exceed the following limits during the commissioning period. These emission limits shall include emissions resulting from the startup and shutdown of the S-1, S-2, S-3 and S-4 Gas Turbines.

	Without Controls		With Controls	
a. NO_x (as NO_2)	1464 lb/day	102 lb/hr	1464 lb/day	61 lb/hr
b. CO	1056 lb/day	88 lb/hr	984 lb/day	41 lb/hr
c. POC (as CH_4)	288 lb/day		288 lb/day	
d. PM10	96 lb/day		96 lb/day	
e. SO_2	18.9 lb/day		18.9 lb/day	

(Basis: cumulative increase)

Verification: The project owner/operator shall submit to the CPM for approval, a Monthly Commissioning Emissions Report that includes fuel use, turbine operation, post combustion control operation, ammonia use and CEM readings on an hourly and daily basis.

AQ-11 Within sixty (60) days of startup, the owner/operator shall conduct a District approved source test using external continuous emission monitors to determine compliance with **AQ-10**. The source test shall determine NO_x, CO, and POC emissions during startup 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 startup 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.

OPERATIONS CONDITIONS OF CERTIFICATION

AQ-12 Consistency with Analyses: Operation of this equipment shall be conducted in accordance with all information submitted with the application (and supplements thereof) and the analyses under which this permit is issued unless otherwise noted below. (Basis: BAAQMD 2-1-403)

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

AQ-13 Conflicts Between Conditions: In the event that any part herein is determined to be in conflict with any other part contained herein, then, if principles of law do not provide to the contrary, the part most protective of air quality and public health and safety shall prevail to the extent feasible.
(Basis: BAAQMD 1-102)

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

AQ-14 Reimbursement of Costs: All reasonable expenses, as set forth in the District's rules or regulations, incurred by the District for all activities that follow the issuance of this permit, including but not limited to permit condition implementation, compliance verification and emergency response, directly and necessarily related to enforcement of the permit shall be reimbursed by the owner/operator as required by the District's rules or regulations. (Basis: BAAQMD 2-1-303)

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-15 Access to Records and Facilities: As to any part that requires for its effective enforcement the inspection of records or facilities by representatives of the District, the Air Resources Board (ARB), the U.S. Environmental Protection Agency (U.S. EPA), or the California Energy Commission (CEC), the owner/operator shall make such records available or provide access to such facilities upon notice from representatives of the District, ARB, U.S. EPA, or CEC. Access shall mean access consistent with California Health and Safety Code Section 41510 and Clean Air Act Section 114A. (Basis: BAAQMD 1-440, 1-441)

Verification: The owner/operator shall maintain records for a minimum of five (5) years and provide access to records and facilities as requested by the ARB, EPA, District and CEC.

AQ-16 Notification of Commencement of Operation: The owner/operator shall notify the District of the date of anticipated commencement of turbine operation not less than 10 days prior to such date. Temporary operations under this permit are granted consistent with the District's rules and regulations. (Basis: BAAQMD 2-1-302)

Verification: The owner/operators shall notify the District and CPM of the date of anticipated commencement of turbine operation not less than 10 days prior to such date.

AQ-17 Operations: The owner/operator shall insure that the gas turbines, HRSGs, emissions controls, CEMS, and associated equipment are properly maintained and kept in good operating condition at all times. (Basis: BAAQMD 2-1-307)

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-18 Visible Emissions: The owner/operator shall insure that no air contaminant is discharged from the LECEF into the atmosphere for a period or periods aggregating more than three minutes in any one hour, which is as dark or darker than Ringelmann 1 or equivalent 20% opacity. (Basis: BAAQMD 6-301)

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

a. The emissions of oxides of nitrogen (as NO_2) 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% O_2 (1-hour rolling average), except during periods of gas turbine startup and shutdown as defined in this permit. The NO_x 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 10 ppmvd @ 15% O_2 (3-hour rolling average), except during periods of startup or shutdown 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 NO_x inlet rate into the SCR control system (molar ratio). The maximum allowable NH3/NO_x 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 Management Policy)

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 9.0 ppmvd @ 15 % O_2 (3-hour rolling average), except during periods of startup or shutdown 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 2 ppmvd @ 15% O_2 (3-hour rolling average), except during periods of gas turbine startup or shutdown as defined in this permit. The POC emission concentration shall be verified during any required source test. (Basis: BACT)

e. Emissions of particulate matter less than ten microns in diameter (PM10) 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 2.5 pounds per hour. The PM10 mass emission rate shall be verified during any required source test. (Basis: BACT & cumulative increase)

f. Emissions of oxides of sulfur (as SO_2) 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 1.8 pounds per hour. The SO_2 emission rate shall be verified during any required source test. (Basis: BACT & cumulative increase)

g. Compliance with the hourly NO_x emission limitations specified in part 19(a), at emission points P-1, P-2, P-3, and P-4, shall not be required during short-term excursions, limited to a cumulative total of 320 hours per rolling 12 month period for all four sources combined. Short-term excursions are defined as 15-minute periods designated by the Owner/Operator that are the direct result of transient load conditions, not to exceed four consecutive 15-minute periods, when the 15-minute average NO_x concentration exceeds 2.0 ppmv, dry @ 15% O_2. Examples of transient load conditions include, but are not limited to the following:

(1) Initiation/shutdown of combustion turbine inlet air cooling
(2) Initiation/shutdown of combustion turbine water mist or steam injection for power augmentation
(3) Rapid combustion turbine load changes
(4) Initiation/shutdown of HRSG duct burners
(5) Provision of ancillary services and automatic generation control at the direction of the California Independent System Operator (Cal-ISO)

The maximum 1-hour average NO_x concentration for short-term excursions at emission points P-1, P-2, P-3, and P-4 each shall not exceed 5 ppmv, dry @ 15% O_2. All emissions during short-term excursions shall be included in all calculations of hourly, daily and annual mass emission rates as required by this permit.

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

AQ-20 Turbine Startup: The owner/operator shall operate the gas turbines so that the duration of a startup is kept to a minimum, consistent with good engineering practice. The startup period begins with the turbine's initial firing and continues until the unit is in compliance with all applicable emission concentration limits. For purposes of this Part, a startup period of 240 minutes or less shall be considered kept to a minimum consistent with good engineering practice. Should it be determined that good engineering practice requires a different time period for a startup, the owner/operator may operate the gas turbines such that startups do not exceed that time period, as approved in writing by the APCO. (Basis: BACT)

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

AQ-21 Turbine Shutdown: The owner/operator shall operate the gas turbines so that the duration of a shutdown is kept to a minimum, consistent with good engineering practice. Shutdown begins with the initiation of the turbine shutdown sequence and ends with the cessation of turbine firing. For purposes of this Part, a shutdown period of 30 minutes or less shall be

considered kept to a minimum consistent with good engineering practice. Should it be determined that good engineering practice requires a different time period for a shutdown, the owner/operator may operate the gas turbines such that shutdowns do not exceed that time period, as approved in writing by the APCO. (Basis: BACT)

Verification: The project owner/operator 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 owner/operator 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 owner/operator 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 Startups 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)
NO_x (as NO_2)	252.4	1,009.6	99
POC	80.2	320.8	28.3
CO	417.2	1668.8	98.5
SO_x (as SO_2)	41.6	166.4	8.4
PM10	60	240	43.8
NH_3	198	792	118

The daily mass limits are based upon calendar day per the definitions section of the permit conditions. The annual mass limit is based upon a rolling 8,760-hour period ending on the last hour. Compliance 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, recordkeeping and reporting conditions of this permit. If any part of the CEM involved in the mass emission calculations is inoperative for more then three consecutive hours of plant operation, the mass data for the period of inoperation shall be calculated using a District-approved alternate calculation method. (Basis: cumulative increase, recordkeeping)

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

AQ-23 Sulfuric Acid Mist Limit: The owner/operator shall operate the LECEF so that the sulfuric acid mist emissions (SAM) from S-1, S-2, S-3, S-4, S-7, S-8, S-9, and S-10 combined do not exceed 7 tons totaled over any consecutive four quarters. (Basis: PSD)

Verification: The project owner/operator 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 owner/operator 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	Four Turbine/HRSGs Power Trains combined
Hourly:	500 MMBtu/hr	639 MMBtu/hr	--
Daily:	12,000 MMBtu/day	15,336 MMBtu/day	--
Yearly:	--	--	18,215,000 MMBtu/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.

c. The owner/operator of the gas turbines and HRSGs shall demonstrate compliance with the daily and annual NO_x 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/operator 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 an operational ammonia flowmeter and 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 shall comply with the requirements of 40 CFR Part 60, Appendices B and F, and 40 CFR Part 75, and 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 ninety (90) days of the startup of the gas turbines and HRSGs, and at a minimum on an annual basis thereafter, the owner/operator shall perform a relative accuracy test audit (RATA) on the 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 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 annual source tests shall include those parameters specified in the approved test protocol, and shall at a minimum include the following:

a. NO_x – ppmvd at 15% O_2 and lb/MMBtu (as NO_2)
b. Ammonia – ppmvd at 15% O_2 (Exhaust)
c. CO – ppmvd at 15% O_2 and lb/MMBtu (Exhaust)
d. POC – ppmvd at 15% O_2 and lb/MMBtu (Exhaust)
e. PM10 – lb/hr (Exhaust)
f. SO_x – lb/hr (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 60 days of startup of the LECEF in combined-cycle configuration and on a semi-annual basis thereafter, the owner/operator 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 owner/operator shall test for (as a minimum) SO_2, SO_3 and SAM. After acquiring one year of source test data on these units, the owner/operator may petition the District to switch to annual source testing if test variability is acceptably low as determined by the District.
(Basis: PSD Avoidance, SAM Periodic Monitoring)

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

AQ-28 The owner/operator shall prepare a written quality assurance program must be established in accordance with 40 CFR Part 75, Appendix B and 40 CFR Part 60 Appendix F. (Basis: continuous emission monitoring)

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-29 The owner/operator shall comply with the applicable requirements of 40 CFR Part 60 Subpart GG, excluding sections 60.334(a) and 60.334(c)(1). The sulfur content of the natural gas fuel shall be monitored in accordance with the following custom schedule approved by the USEPA on August 14, 1987:

a. The sulfur content shall be measured twice per month for the first six months of operation.

b. If the results of the testing required by **AQ-29a** are below 0.2% sulfur by weight, the sulfur content shall be measured quarterly for the next year of operation.

c. If the results of the testing required by **AQ-29b** are below 0.2% sulfur by weight, the sulfur shall be measured semi-annually for the remainder of the permit term.

d. The nitrogen content of the fuel gas shall not be monitored in accordance with the custom schedule. (Basis: NSPS)

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-30 The owner/operator shall notify the District of any breakdown condition consistent with the District's breakdown regulations. (Basis: Regulation 1-208)

Verification: The project owner/operator shall provide duplicate notification to the CPM of all breakdown notifications provided to the District, as required by District breakdown regulations. The duplicate notification shall be submitted to the CPM at the same time it is submitted to the District. The project owner/operator shall also include all breakdown reports for each quarter as part of the quarterly report required by Condition of Certification **AQ-34**.

AQ-31 The owner/operator shall notify the District in writing in a timeframe consistent with the District's breakdown regulations following the correction of any

breakdown condition. The breakdown condition shall include a description of the equipment malfunction or failure, the date and cause of the initial failure, the estimated emissions in excess of those allowed, and the actions taken to restore normal operations. (Basis: Regulation 1-208)

Verification: The project owner/operator shall provide duplicate notification to the CPM of all breakdown notifications provided to the District, as required by District breakdown regulations. The duplicate notification shall be submitted to the CPM at the same time it is submitted to the District. The project owner/operator shall also include all breakdown reports for each quarter as part of the 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 NO_x and CO emission concentrations and hourly ammonia injection rates and ammonia/NO_x ratio

f. for the continuous emissions monitoring system; 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-33 The owner/operator shall maintain all records required by this permit for a minimum period of five years from the date of entry and shall make such records readily available for District inspection upon request.
(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. Results of quarterly fuel analyses for HHV and total sulfur content. (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-35 Emission Offsets: The owner/operator shall provide 7.5 tons of valid POC emission reduction credits and 27.945 tons of valid NOx emission reduction credits prior to the issuance of the Authority to Construct. The owner/operator shall deliver the ERC certificates to the District Engineering Division at least ten days prior to the issuance of the authority to construct. (Basis: Offsets)

Verification: At least 10 days prior to the issuance of the ATC, the project owner/operator shall submit all necessary ERC certificates to the District and provide copies of all documentation to the CPM at the same time.

AQ-36 District Operating Permit: The owner/operator shall apply for and obtain all required operating permits from the District in accordance with the requirements of the District's rules and regulations. (Basis: Regulations 2-2 & 2-6)

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

AQ-37 Title IV and Title V Permits: The owner/operator must deliver applications for the Title IV and Title V permits to the District prior to first-fire of the turbines. The owner/operator must cause the acid rain monitors (Title IV) to be certified within 90 days of first-fire. (Basis: BAAQMD Regulation 2, Rules 6 & 7)

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

AQ-38 *Deleted*

Verification: *Deleted*

AQ-39 The owner/operator shall insure that the S-5 Fire Pump Diesel Engine is fired exclusively on diesel fuel with a maximum sulfur content of 0.05% by weight. (Basis: TRMP, cumulative increase)

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

AQ-40 The owner/operator shall operate the S-5 Fire Pump Diesel Engine for no more than 100 hours per year or 45 minutes per day for the purpose of reliability testing and non-emergency operation.
(Basis: cumulative increase, Regulation 9-8-231 & 9-8-330)

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

AQ-41 The owner/operator shall equip the S-5 Fire Pump Diesel Engine with a non-resettable totalizing counter that records hours of operation. (Basis: BACT)

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-42 The owner/operator shall maintain the following monthly records in a District-approved log for at least 5 years and shall make such records and logs available to the District upon request:

a. Total number of hours of operation for S-5
b. Fuel usage at S-5
(Basis: BACT)

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-43 The owner/operator shall operate the facility such that maximum calculated annual toxic air contaminant emissions (pursuant to **AQ-44**) from the gas turbines and HRSGs combined (S-1, S-2, S-3, S-4, S-7, S-8, S-9, and S-10) do not exceed the following limits:

6490 pounds of formaldehyde per year
3000 pounds of acetaldehyde per year
3.2 pounds of Specified polycyclic aromatic hydrocarbons (PAHs) per year
65.3 pounds of acrolein per year

unless the following requirement is satisfied:

The owner/operator shall perform a health risk assessment using the emission rates determined by source test and the most current Bay Area Air Quality Management District approved procedures and unit risk factors in effect at the time of the analysis. This analysis shall be submitted to the District and the CEC CPM within 60 days of the source test date. The

owner/operator may request that the District and CEC CPM revise the carcinogenic compound emission limits specified above. If the owner/operator demonstrates to the satisfaction of the APCO that these revised emission limits will result in a cancer risk of not more than 1.0 in one million, the District and CEC CPM may, at their discretion, adjust the carcinogenic compound emission limits listed above. (Basis: TRMP)

Verification: See Condition of Certification **AQ-44**.

AQ-44 To demonstrate compliance with **AQ-43**, 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 60 days of startup of the Los Esteros Critical Energy Facility and on a biennial (once every two years) thereafter, the owner/operator 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 **AQ-43**. If three consecutive biennial source tests demonstrate that the annual emission rates for any of the compounds listed above calculated pursuant to **AQ-43** are less than the BAAQMD Toxic Risk Management Policy trigger levels shown below, then the owner/operator 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, TRMP)

Verification: At least 20 days prior to the intended source test date, the owner/operator 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 CEC CPM.

AQ-46 The owner/operator shall properly install and maintain the cooling towers to minimize drift losses. The owner/operator shall equip the cooling towers with high-efficiency mist eliminators with a maximum guaranteed drift rate of 0.0005%. The maximum total dissolved solids (TDS) measured at the base of the cooling towers or at the point of return to the wastewater facility shall not be higher than 10,000 ppmw (mg/l). The owner/operator shall sample and test the cooling tower water at least once per day to verify compliance with this TDS limit. (Basis: BACT, cumulative increase)

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

AQ-47 The owner/operator shall perform a visual inspection of the cooling tower drift eliminators at least once per calendar year, and repair or replace any drift eliminator components which are broken or missing. Prior to the initial operation of the combined-cycle Los Esteros Critical Energy Facility, the owner/operator shall have the cooling tower vendor's field representative inspect the cooling tower drift eliminators and certify that the installation was performed in accordance with the manufacturer's design and specifications. Within 60 days of the initial operation of the cooling tower, the owner/operator shall perform an initial performance source test to determine the PM10 emission rate from the cooling tower to verify compliance with the vendor-guaranteed drift rate specified in **AQ-46**. The CPM may, in years 5 and 15 of cooling tower operation, require the owner/operator to perform source tests to verify continued compliance with the vendor-guaranteed drift rate specified in **AQ-46**. (Basis: BACT, cumulative increase)

Verification: The project owner/operator shall verify compliance with this Condition of Certification in the fourth quarter report of each year required by Condition of Certification **AQ-34**.

APPENDIX A

Emissions Reduction Credit requirement, based on applicant comments on the District's Revised Preliminary Determination of Compliance.

Condition of Certification AQ-SC7
Required Emission Reduction Credits

ERC Number	Source Location (City)	Date Banked	Source Type	NO_x (tpy)	POC (tpy)
#724	Palo Alto	3/13/96	Cardinal Cogen.	7.100	0
#856	San Pablo	4/23/02	Myers Container	0	26.522
#896	San Francisco	9/30/85	Potrero Power Plant	304.594	0
			Total ERC Available	**311.694**	**26.522**
			Los Esteros Phase 2 ERC Requirement	**27.945**	**7.500**

Source: Sierra 2005b, pg. 2 and CEC 2005b, pg. 4.1-30

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ATTACHMENT B

Proposed Bike Path Condition of Certification:

LAND-1 To help maintain public access and recreation adjacent to the project site, the project owner shall fund an endowment through a one-time payment of up to $23,000, as determined by the City of San Jose to be used by the City for the repair of the paved bikeway immediately to the north of, and parallel to, Highway 237, between Zanker Road and Coyote Creek ("Bikeway"). To establish the endowment and its terms for repairing the bikeway, the project owner shall enter into a Fund Transfer Agreement with the City of San Jose.

Verification: The project owner shall submit a copy of the Fund Transfer Agreement to the CPM within 60 days of the Commission's final decision. Commencing 90 days after the Commission's final decision, the project owner shall provide the CPM with a quarterly report on the progress of the City of San Jose's efforts to complete repairs of the Bikeway. The final report shall be submitted within 30 days after the City has completed repairs of the Bikeway with the funds provided by the project owner.