CALIFORNIA ENERGY COMMISSION
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STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

DOCKET
93-AFC-3C
DATE AUG 26 2009
RECD SEP 02 2009

In the Matter of:		
SACRAMENTO POWER AUTHORITY CAMPBELL COGENERATION PROJECT	)	**Docket No. 93-AFC-3C**
SACRAMENTO POWER AUTHORITY	)	**Order No.** 09-826-4 **ORDER APPROVING** a Petition to Amend the Air Quality Conditions of Certification

On February 9, 2009, the Sacramento Power Authority (SPA), the owner/ operator of the SPA Campbell Cogeneration Project, submitted a petition requesting to modify and add Air Quality Conditions of Certification (COCs). The modifications include:

- Add air quality Conditions of Certification (COCs) providing for a new commissioning period necessitated by the replacement of the gas turbine/duct burner system;
- Modify COCs AQ-11, AQ-15, and AQ-19 to indicate that shutdowns are not subject to these emission limit conditions and to make other non-substantive changes for consistency.
- Delete hourly mass emission limits in COC AQ-11 applicable to the gas turbine alone and retain the hourly mass emission limits for the combined gas turbine/duct burner in accordance with current Sacramento Metropolitan Air Quality Management District (SMAQMD) operating permit; and
- Modify COC AQ-31 to provide a 60-day turnaround time for submitting annual air emission source test results, in accordance with current SMAQMD operating permit and to make other non-substantive changes for consistency.
- Addition of new recommissioning COCs AQ-S1 and AQ-CM1 through AQ-CM12 (see page 2 of staff analysis).
- Deletion of existing COCs that are obsolete and renumbering of conditions for consistency with current District permits.

STAFF RECOMMENDATION

Energy Commission staff reviewed the petition and finds that it complies with the requirements of Title 20, Section 1769(a) of the California Code of Regulations and recommends approval of SPA's petition to modify the Campbell Cogeneration project Air Quality COCs.

August 26, 2009

ENERGY COMMISSION FINDINGS

Based on staff's analysis, the Energy Commission concludes that the proposed changes will not result in any significant impact to public health and safety, or the environment. The Energy Commission finds that:

- The petition meets all the filing criteria of Title 20, section 1769(a) of the California Code of Regulations concerning post-certification project modifications;
- The modification will not change the findings in the Energy Commission's Final Decision pursuant to Title 20, section 1755;
- The project will remain in compliance with all applicable laws, ordinances, regulations, and standards, subject to the provisions of Public Resources Code section 25525; and
- The changes will be beneficial to the project owner in that the replacement system will increase reliability of the facility, and they will reflect the current terms of the SMAQMD permit.

CONCLUSION AND ORDER

The California Energy Commission hereby adopts staff's recommendations and approves the changes to the Commission Decision for the SPA Campbell Project outlined in staff's analysis.

IT IS SO ORDERED.

Date: August 26, 2009

STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

KAREN DOUGLAS
Chairman

Attachment: Staff Analysis

SACRAMENTO POWER AUTHORITY
CAMPBELL COGENERATION PROJECT (93-AFC-3C)
STAFF ANALYSIS OF PETITION TO AMEND
AIR QUALITY CONDITIONS OF CERTIFICATION

Brewster Birdsall, P.E., QEP

INTRODUCTION

The current petition to amend several air quality Conditions of Certification (COCs) was submitted by the Sacramento Power Authority (SPA) on February 9, 2009, for a new equipment commissioning period at the Campbell Cogeneration Project (93-AFC-3C). The current COCs were set by the original November 30, 1994 Energy Commission Decision (CEC Pub. No. P800-94-011, CEC 1994), amended by Order No. 97-1217-05 (CEC 1997), amended by Order No. 98-04-15-03 (CEC 1998), and amended by Order No. 99-1215-08 (CEC 1999).

This staff analysis evaluates the consistency of the proposed changes with the Energy Commission's 1994 decision and if the project, as modified, would remain in compliance with applicable laws, ordinances, regulations, and standards (Title 20, California Code of Regulations, section 1769).

The SPA proposes to: 1. Add new air quality COCs to allow installation of new power plant control systems, requiring a new commissioning period for tuning; and 2. Modify existing air quality COCs to achieve consistency with current local air district permit conditions.

The Sacramento Metropolitan Air Quality Management District (SMAQMD or District) issued an Engineering Evaluation of the proposed changes on February 19, 2009 (SMAQMD 2009a), and issued an "Authority to Construct" (ATC, SMAQMD 2009b) modifying the existing District permit conditions to allow the new commissioning period (called "recommissioning"). The proposed revised conditions trigger the need for the present changes to the COCs. This analysis shows how the COCs would change to reflect SMAQMD's current ATC conditions and SPA's proposed modifications.

This analysis includes updated setting information and analysis of the emissions and impacts related to the amendment. All of the District relevant original conditions have been reviewed by the District, and the complete revisions required by the District are shown in this analysis. Most conditions have been renumbered, and staff recommends deleting many obsolete Conditions of Certification that no longer appear in District permits. This analysis finds that changes requested by SPA would conform with applicable federal, state, and SMAQMD air quality laws, ordinances, regulations, and standards, and the amended project would not cause significant air quality impacts, provided that the recommended Conditions of Certification are included as provided below.

PROPOSED AMENDMENT

The subject amendment would involve numerous changes to the current COCs. SPA proposes to amend the conditions to:

- Provide for a new commissioning period to allow replacement of the combustion turbine generator (CTG) and duct burner (DB) control system,
- Provide for elevated NOx and CO emission limits during the new commissioning period,
- Allow shutdown modes to be exempt from emission limits,
- Remove the requirement that the combustion turbine alone achieve hourly mass emission limits while retaining the requirements on hourly emission limits for the combined combustion turbine and duct burner system,
- Change the date for submitting annual air emission source test results, and
- Correct other minor inconsistencies between the Commission's Decision and the current District permit conditions.

Proposed changes to the allowable emissions are fully described in this analysis. There are no proposed changes to remove or replace testing or monitoring requirements. The proposed changes would add new COCs for commissioning (**AQ-S1 and AQ-CM1 through AQ-CM12**) and would affect existing COCs related to emissions limits (existing **AQ-11, AQ-15, and AQ-19**) and combustion turbine source testing (existing **AQ-31**).

Other permit changes are minor and/or administrative in nature. They are discussed in more detail in SPA's petition and the supporting filings with the SMAQMD. This analysis concludes by showing the current COCs and how this license amendment would change the COCs.

PROPOSED ADDITION OF AQ-CM1 THROUGH AQ-CM12

Description of Recommissioning

SPA proposes to replace the existing operating control system for the CTG/DB, which SPA believes is obsolete (Teleperm XP/Bailey Infi-90), and install the current Siemens T-3000 operating system. Hardware and software would need to be replaced, including the input/output cards that transmit control data to and from the CTG/DB. This system upgrade requires SPA to shut down the CTG/DB, remove and replace the master control system hardware, load new software, and enter into a "recommissioning" period to test and tune the CTG/DB and control system to ensure the that the power plant functions and operates according to design.

The new equipment commissioning period would cause greater emissions than those that occur during normal operations because of the need to tune the combustor, conduct numerous startups and shutdowns, operate under low loads (including periods with combustor in the "diffusion" mode), and conduct testing. Routine steady state

operation involves lean fuel-air mixtures (the "pre-mix" mode) that can be unstable at the lower power levels that are needed during testing (SPA 2009d). During commissioning, it is common to adjust the CTG and DB system at all loads and the emission control systems to fine-tune them for optimum performance and compliance with the emission limits that apply to routine operation. SPA requests that the new commissioning process be somewhat flexible and able to account for unforeseen though not unexpected malfunctions, troubleshooting, and adjustments (SPA 2009c).

SPA expects to use about 164 hours of CTG run time, with additional startup and shutdown periods, over an 11-day period to accomplish the recommissioning. SPA requests that up to 100 hours of the CTG firing without full use of the selective catalytic reduction system (SCR) be allowed.

SPA provided information demonstrating that many of the needed commissioning activities would occur at low loads where exhaust temperatures would not be likely to reach the minimum operating temperature for the SCR system. At lower loads, and catalyst temperatures below 572 °F, the SCR system would be below its minimum allowable temperature for ammonia injection. Some of the commissioning tests, including some "diffusion" mode periods would warm the system to a functional temperature, and SPA notes that for those periods, the SCR system would inject ammonia as designed, which would reduce some of the excess emissions of nitrogen oxides (NOx). Similarly, because the oxidation catalyst becomes more effective as turbine load increases, excess emissions of carbon monoxide (CO) would occur (SPA 2009c).

As such, the commissioning tests would cause NOx and CO emissions at levels exceeding permitted levels for routine operation of the CTG/DB. Annual and quarterly total emission rates would not change because the recommissioning would occur only for about 11 days. Commissioning would not affect the emission rates for other criteria pollutants: reactive organic compounds (ROC), sulfur dioxide (SO_2), inhalable particulate matter less than 10 microns in diameter (PM10), and fine particulate matter less than 2.5 microns in diameter (PM2.5). Only NOx and CO would be emitted during recommissioning at levels higher than normal operating emissions. Emission rates and stack gas concentrations would be monitored throughout the process with the existing continuous emission monitoring (CEM) systems that remain functional.

The 11 days of recommissioning activities would include (SPA 2009c):

- First fire and full-speed no-load (FSNL) tests;
- Diffusion mode and pre-mix mode transition tests;
- Normal startup and steam turbine startup tests;
- Steam turbine commissioning, loading, load rejection, and synchronization, with and without duct burners firing; and
- Final optimization.

Air Quality Table 1 summarizes the proposed emission rates during recommissioning.

AIR QUALITY Table 1
SPA Petition to Amend, Maximum Recommissioning Emissions

Source	NOx	ROC	PM10	PM2.5	CO	SOx
Maximum Hourly (lb/hr, for CTG/DB)	360	n/c	n/c	n/c	500	n/c
Maximum Daily (lb/day, for CTG/DB)	1,500	n/c	n/c	n/c	1,875	n/c

Source: SPA 2009a, SMAQMD 2009a. Note: "n/c" is no change from the existing permit conditions.

Impact Analysis for Recommissioning

SPA provided an atmospheric dispersion modeling analysis with its petition to amend (SPA 2009a). Energy Commission staff reviewed the analysis for compliance with the federal and state ambient air quality standards that staff uses as the basis for characterizing power plant impacts. The ambient air quality standards are health-based standards established by the ARB and U.S. EPA. They are set at levels that contain a margin of safety to adequately protect the health of all people, including those most sensitive to adverse air quality impacts such as the elderly, persons with existing illnesses, children, and infants. Ambient air quality impacts occur when power plant emissions cause the ambient concentration of a pollutant to increase. Project-related emissions are the actual mass of emitted pollutants, which are diluted in the atmosphere before reaching the ground. After quantifying the emissions, the atmospheric dispersion model shows the probable change in ground-level concentrations.

SPA conducted the air dispersion modeling using the American Meteorological Society/Environmental Protection Agency Regulatory Model known as AERMOD (version 07026). The U.S. EPA designates AERMOD as a "preferred" model for refined modeling in all types of terrain. The meteorological data used was from 2001 to 2005 as provided by the SMAQMD from data gathered at Sacramento Executive Airport (SPA 2009a). Concurrent hourly ozone data was not used in modeling the fraction of NOx emissions that convert to nitrogen dioxide (NO_2) impacts, which overestimates the NO_2 impacts because some of the NOx emissions will not oxidize into NO_2.

Project-related modeled concentrations are then added to highest background concentrations to arrive at the total impact of the project. The total impact is then compared with the ambient air quality standards for each pollutant to determine whether the project's emissions would either cause a new violation of the ambient air quality standards or contribute to an existing violation.

The following impacts would occur any time during the forecasted 11 days of commissioning activities. **Air Quality Table 2** shows that the commissioning-phase impacts of CO and NO_2 would not cause a new violation or contribute an existing violation. These results consider low load and full load conditions. Worst-case NO_2

impacts would occur during full-speed no-load (FSNL) tests that would involve minimal turbine fuel use and emissions released at low exhaust flow rates, or low velocities, resulting in the highest ground level impacts.

AIR QUALITY Table 2
SPA Petition to Amend, Recommissioning Maximum Impacts (µg/m^3)

Pollutant	Averaging Time	Modeled Impact	Background	Total Impact	Limiting Standard	Percent of Standard
CO	1 hour	3,637	5,470	9,107	23,000	40 %
	8 hour	1,775	4,889	6,664	10,000	67 %
NO_2	1 hour	182	147	329	339	97 %

Source: SPA 2009a, SPA 2009b.

Note: One-hour NO2 impacts assume full conversion of NOx emissions to NO2, which overestimates NO2 impacts.

The results of the ambient air quality impact analysis show that the recommissioning activities would not cause a violation of the 1-hour NO_2 ambient air quality standard, nor would they cause a violation of the standards for CO. Longer averaging periods need not be analyzed because of the short-term nature of commissioning. The dispersion modeling results show that the proposed commissioning emissions would not cause any significant air quality impacts or adversely affect the ability of the project to comply with laws, ordinances, regulations, and standards (LORS).

Proposed Conditions for Recommissioning

The existing Conditions of Certification include mass emission rate limits for the CTG and DB in hourly (**AQ-11**), daily (**AQ-12**), quarterly (**AQ-13**), and annual (**AQ-14**) terms. The existing COCs also include emission concentration limitations (**AQ-15**), although the exhaust concentration limitations do not apply during startups. SPA currently proposes to establish new hourly and daily emission rate limits and an exemption from the concentration limit to allow for the proposed recommissioning period. SPA would return to compliance with the original limits promptly upon successful completion of the recommissioning. Recommissioning emissions would be included in determining compliance with the quarterly and annual emission limits, along with any emissions from routine operation, because the quarterly and annual limits would not change.

The proposed emissions would within the allowable quarterly and annual permitted limits, which were originally offset with emission reduction credits. Because the quarterly and annual emissions would not increase as a result of this petition and because mitigation was provided originally during permitting as a result of the SMAQMD offset requirements, staff does not require additional offsets for this petition. Staff concludes that no significant air quality impact would occur as a result of the recommissioning, as long as the COCs include the changes recommended in this analysis.

SPA submitted an application to the SMAQMD to provide for the new commissioning period, and the ATC (SMAQMD 2009b) identifies new permit conditions that Energy Commission staff recommends be included as part of this license amendment (**AQ-S1** and **AQ-CM1** through **AQ-CM12**).

PROPOSED MODIFICATIONS TO AQ-11, AQ-15, AND AQ-19

SPA proposes to change the existing COCs to clarify that emissions during shutdowns are not subject to the emission concentration limitations. Each shutdown involves the combustor transitioning out of the lean "pre-mix" mode into the more stable, but higher emitting, "diffusion" mode, which allows load to be reduced. Emissions temporarily increase as the unit becomes unloaded. Shutdowns would be limited to a 30-minute window. This would change limits in existing conditions **AQ-11**, **AQ-15**, and **AQ-19** that would now appear in conditions **AQ-6**, **AQ-5**, and **AQ-14**, respectively, renumbered by this amendment. The existing conditions allow the turbine to shut down without functioning emission control systems for an unspecified time.

These proposed changes would be consistent with the updated SMAQMD permit conditions (SMAQMD 2009b) and with SMAQMD Rule 413, which requires gas turbine shutdowns to be completed in less than 1 hour. Although the modified permit conditions and Rule 413 exempt shutdown periods from emission concentration limits, the emissions during shutdowns would be included in determining compliance with the quarterly and annual emission limits (**AQ-8**).

PROPOSED ADDITIONAL MODIFICATION OF AQ-11

SPA proposes additional changes to existing condition **AQ-11** to remove the individual emission limits for the combustion turbine alone, because the duct burner and combustion turbine exhausts flow through the same stack. Emission limits during periods of turbine use with duct firing would not change. With renumbering, this change would now appear in condition **AQ-6**.

SPA negotiated this change with the SMAQMD after the previous Energy Commission license amendments (most-recent in 1999) but prior to SMAQMD issuing the current operating permit in 2007 (shown in Title V Federal Operating Permit, Permits to Operate 14071 and 14072, SPA 2009a). The change relaxed the emission limits during periods of turbine use without duct firing, allowing the combustion turbine alone to emit up to the levels permitted for the CTG/DB combined. The combustion turbine emissions continue to be subject to the combined CTG/DB emission limits, including the exhaust concentration limit (**AQ-5**) and combined performance testing requirements (**AQ-25**). This change would therefore not be likely to result in a change in worst-case air quality impacts, which are more likely during periods of turbine use with duct firing. Similarly, with this change, the combustion turbine would continue to be subject to and likely to comply with applicable LORS, including SMAQMD Rule 413 for stationary gas turbines.

PROPOSED MODIFICATION OF AQ-31

SPA proposes to include minor changes to existing condition **AQ-31** to clarify that the annual source performance tests shall include a test of monitoring device accuracy and that additional time be allowed to submit the annual performance test results. The proposed modifications, including providing 60 days for the results to be complied and submitted, would be consistent with similar permit conditions for other power plants and would be consistent with the recent ATC for SPA (SMAQMD 2009b). The original condition (**AQ-31**) has been renumbered to **AQ-25** to reflect the current District numbering.

RECOMMENDED REVISIONS TO OTHER CONDITIONS

Staff recommends that other existing Energy Commission conditions that are obsolete be removed and/or renumbered to make the license conditions consistent with the current District permits. Staff considers these changes to be minor and non-controversial. The following revisions would not cause any additional air quality impacts or adversely affect the ability of the project to comply with LORS.

- Renumber conditions related to operation of the existing cooling tower from **AQ-20**, **AQ-21**, and **AQ-22** to indicate that they are staff-recommended conditions **AQ-SC1**, **AQ-SC2**, and **AQ-SC3**, respectively.
- Replace existing conditions **AQ-23** and **AQ-25** to **AQ-29**, which included pre-construction and startup notification, monitoring, and recordkeeping requirements that are no longer relevant, with new conditions **AQ-17** to **AQ-20** showing up-to-date monitoring, recordkeeping, and reporting requirements.
- Revise existing conditions **AQ-24** and **AQ-30** into new staff-recommended conditions **AQ-SC4** and **AQ-SC5**, respectively, to ensure that performance testing occurs promptly after recommissioning.
- Remove existing conditions **AQ-32** to **AQ-34** including **AQ-34a** because they were pre-construction requirements for SPA to surrender emission reduction credits. As indicated in the current District permit (new COCs **AQ-21** to **AQ-24**), these requirements were fulfilled before and during construction.
- Remove existing conditions **AQ-35** and **AQ-36**, which were recommended by Energy Commission staff to minimize construction-phase dust and vehicle exhaust emissions. Since construction was completed many years ago and the current amendment would not cause any notable construction-related dust or vehicle exhaust emissions, these two conditions are now obsolete.
- Remove existing conditions **AQ-42** to **AQ-47** because they simply reflected the requirements of District rules and regulations, namely Rule 202 regarding New Source Review, which would prevail over permit conditions, and they were pre-construction requirements that have been fulfilled as indicated in the current District permit (Conditions 21 to 24 in SMAQMD 2009b).

- Other typographical inconsistencies and updates in terminology regarding the equipment, fuels, and testing requirements that are included in the proposed COC revisions, consistent with SPA's petition and the SMAQMD Authority to Construct (SMAQMD 2009b).

Public comments filed in response to SPA's Petition to Amend requested information on the consequences or penalties, if any, for exceeding the emission limits or duration limits for tuning or recommissioning. SPA deferred its response to the Energy Commission (SPA 2009d). The Energy Commission Compliance Unit conducts inspections of the SPA facility. If the Energy Commission finds that there is noncompliance, the SMAQMD would be consulted and informed to attempt to correct or eliminate the noncompliance. If noncompliance cannot be corrected, penalties may be imposed by the Energy Commission or the SMAQMD, including up to $75,000 per violation, revoking the certification for the facility, or other legal action pursuant to the California Health and Safety Code.

CONCLUSIONS

The requested changes in permit conditions would conform with applicable federal, state, and SMAQMD air quality laws, ordinances, regulations, and standards, and the amended project would not cause significant air quality impacts, provided that the following Conditions of Certification are included. These conditions were reviewed and approved by the SMAQMD in the Authority to Construct issued May 21, 2009. Staff recommends that the revised COCs be approved as shown below.

PROPOSED CHANGES TO THE CONDITIONS OF CERTIFICATION

No air quality conditions would remain as in the current license (93-AFC-3C). The complete revisions to the air quality conditions are shown here.

Deleted text is shown in ~~strikethrough~~, and added text is double **underlined.**

The original air quality conditions pertaining operation are shown first, with revisions and renumbering made necessary by the proposed amendment, followed by the new conditions pertaining to recommissioning (without underlining).

ORIGINAL CONDITIONS OF CERTIFICATION

General Conditions

AQ-1 The equipment shall be properly maintained. ~~Facilities Operation - All equipment, facilities, or systems installed or used to achieve compliance with the terms and conditions of this Authority to Construct shall be maintained in good working order so as to minimize air pollution emissions and shall comply with all other applicable local, state and federal rules and regulations.~~

Verification: ~~Refer to Conditions AQ-2, AQ-3 and AQ-8.~~ The project owner shall make the site available for inspection by representatives of the District, ARB, and the Commission upon request.

~~**AQ-2** Malfunction - The Sacramento Metropolitan Air Quality Management District (District) shall be notified of any breakdown of the emissions monitoring equipment, any engine equipment, or any process which results in an increase in emissions above the allowable emissions limits stated as a Condition of this permit or any applicable state or federal regulation which affects the ability for the emissions to be accurately determined. Such breakdowns shall be reported to the District in accordance with the procedures and reporting times specified in District Rule 602 - Breakdown Conditions; Emergency Variance.~~

~~**Verification**: The project owner shall provide the California Energy (CEC) Commission Compliance Project Manager (CPM) with a copy of any report required by this Condition at the same time as the report is provided to the SMAQMD.~~

AQ-~~2~~3 ~~Right to Entry -~~ The Sacramento Metropolitan Air Quality Management District Air Pollution Control Officer~~, the Executive Officer of the California Air Resources Board, EPA Regional Administrator,~~ and/or ~~their~~ authorized representatives, upon the presentation of credentials, shall be permitted:

a. to enter upon the premises where the source is located or in which any records are required to be kept under the terms and conditions of this ~~Determination of Compliance~~ Authority to Construct;

b. at reasonable times to have access to and copy any records required to be kept under terms and conditions of this ~~Determination of Compliance~~ Authority to Construct;

c. to inspect any equipment, operation, or method required in this ~~Determination of Compliance~~ Authority to Construct, and

d. to sample emissions from the source or require samples to be taken.

Verification: ~~Within 30 days prior to first turbine roll, t~~ The project owner shall advise appropriate site personnel of this Condition, and provide the Commission CPM with a

notification by letter that site personnel have been informed regarding the rights of entry described above.

AQ-3 This Authority to Construct does not authorize the emission of air contaminants in excess of those allowed by Division 26, Part 4, Chapter 3, of the California Health and Safety Code or the Rules and Regulations of the SMAQMD.

Verification: No verification necessary.

AQ-4 A legible copy of this Authority to Construct shall be maintained on the premises with the equipment. ~~Public Nuisance - No air contaminant shall be released into the atmosphere which causes a public nuisance.~~

Verification: ~~Refer to Condition AQ-2.~~ The project owner shall make the site available for inspection by representatives of the District, ARB, and the Commission upon request.

Emission Limitation Requirements

AQ-5 ~~The combustion gas turbine, duct burner, and cooling tower shall not discharge into the atmosphere any visible air contaminant other than uncombined water vapor, for a period or periods aggregating more than three minutes in anyone hour, which is 20 percent opacity or greater.~~ Except as specified in Condition **AQ-CM9**, concentrations of nitrogen oxides (NOx) emissions from the gas turbine and duct burner shall not exceed the following limit:

Pollutant	Maximum Allowable NOx Concentration (A) Gas Turbine and Duct Burner ppmv at 15% O2 averaged over any consecutive 3 hour period
NOx	3

(A) Excluding start-ups, shutdowns and short term excursions as defined in Conditions **AQ-13**, **AQ-14** and **AQ-15**.

Verification: ~~Refer to Condition AQ-2.~~ The project owner shall maintain appropriate emission data records as required by Conditions **AQ-19** and **AQ-20** and submit source test reports required under Condition **AQ-25**. A summary of significant operation and maintenance events and monitoring records shall be included in the quarterly operation report (**AQ-20**).

~~**AQ-6** Only natural gas may be fired in the combustion turbine and duct burner at the SPA Cogeneration project.~~

~~**Verification**: The project owner shall verify compliance by the record keeping required by Condition AQ-8.~~

~~**AQ-7** The project owner shall provide District approved stack sampling ports and platforms.~~

~~**Verification**: Refer to Condition AQ-3.~~

~~**AQ-8** The project owner shall maintain appropriate records (including but not limited to: fuel usage rates, gas turbine loading levels, hours of operation, emission concentration, mass emissions, start-up and shutdown times, etc.) to verify compliance with all listed permit Conditions. The project owner shall obtain District approval, 60 days prior to start-up, of the format of the records. These records shall be continuously maintained for the most recent two year period and shall be made available to the Air Pollution Control Officer upon request.~~

~~**Verification**: The project owner shall obtain District approval, within 60 days of start-up, of the format of the records. The records shall be made available to the Air Pollution Control Officer and the Commission CPM upon request.~~

~~**AQ-9** The project owner shall maintain monthly records that demonstrate compliance with Condition 14.~~

~~**Verification**: The project owner shall verify compliance by the record keeping required by Condition AQ-8.~~

~~**AQ-10** Severability - If any provision, clause, sentence, paragraph, section, or part of these conditions for any reason is judged to be unconstitutional or invalid, such judgment shall not affect or invalidate the remainder of these conditions.~~

~~**Verification**: No verification needed.~~

AQ-~~6~~11 ~~Emissions at the SPAC cogeneration facility on a pound per hour basis,~~ Except as specified in Condition **AQ-CM10**, hourly mass emissions from the gas turbine and duct burner shall not exceed the following limits ~~averaged over a three-hour period, not including start-ups as defined in Condition 19.~~:

Pollutant	~~Units~~	~~Combined Cycle CTG~~	Maximum Allowable Emissions (A) Gas Turbine and Duct Burner lb/hour averaged over any consecutive 3 hour period ~~CTG+Duct Burner~~	~~Cooling Tower~~
ROC	~~Lbs/hr~~	~~3.21~~	9.01 (B)	~~N/A~~
NO_x	~~Lbs/hr~~	~~15.56~~	17.76 (C)	~~N/A~~
SO2 ~~SOx~~	~~Lbs/hr~~	~~0.85~~	0.97 (D)	~~N/A~~
PM10	~~Lbs/hr~~	~~5.00~~	7.00 (E)	~~N/A~~
CO	~~Lbs/hr~~	~~9.47~~	10.81 (F)	~~0.41~~

~~The District in agreement with the project owner may choose to decrease the above hourly emission limits to correspond to the source test results pursuant to Condition 30.~~

(A) Excluding start-ups, shutdowns and short term excursions as defined in Conditions **AQ-13**, **AQ-14** and **AQ-15**.

(B) Based on a turbine ROC emission factor of 0.00228 lb/MMBTU, duct burner ROC emission factor of 0.029 lb/MMBTU and firing at full capacity.

(C) Based on data submitted in the permit application and is monitored by the turbine's NOx CEM system.

(D) Based on a turbine and duct burner SO2 emission factor of 0.0006 lb/MMBTU and firing at full capacity.

(E) Based on a turbine PM10 emission factor of 0.003546 lb/MMBTU, duct burner PM10 emission factor of 0.01 lb/MMBTU and firing at full capacity.

(F) Based on data submitted in the permit application and is monitored by the turbine's CO CEM system.

Verification: The project owner shall maintain appropriate emission data records as required by Conditions **AQ-819** and **AQ-20** and submit source test reports required under Condition **AQ-3025**. A summary of significant operation and maintenance events and monitoring records shall be included in the quarterly operation report (**AQ-20**).

AQ-712 ~~Emissions at the SPAC cogeneration project, from the combustion turbine, duct burner and cooling tower, on a pounds per calendar day basis,~~ Except as specified in Condition No. CM11, daily mass emissions from the following equipment at the facility shall not exceed the following limits.

	~~NO_x~~	~~CO~~	~~ROC~~	~~SOx~~	~~PM10~~
~~TOTAL~~	~~384.5~~	~~326.9~~	~~146.7~~	~~21.8~~	~~151.8~~

~~The District in agreement with the project owner may choose to decrease the above daily emission limits to correspond to the source test results pursuant to Condition 30.~~

Pollutant	Maximum Allowable Emissions (A) lb/day		
	Gas Turbine and Duct Burner	Cooling Tower	Total
ROC	146.7	NA	146.7
NOx	384.5	NA	384.5
SO2	21.8	NA	21.8
PM10	142.1	9.7	151.8
CO	326.9	NA	326.9

(A) Including start-ups, shutdowns and short term excursions as defined in Conditions **AQ-13**, **AQ-14** and **AQ-15**.

Verification: The project owner shall maintain appropriate emission data records as required by Conditions **AQ-819** and **AQ-20**. A summary of significant operation and maintenance events and monitoring records shall be included in the quarterly operation report (**AQ-20**).

AQ-~~8~~13 ~~Emissions at the entire SPAC cogeneration project~~ Combined mass emissions from the following equipment at the facility shall not exceed the following limits; ~~on a quarterly basis.~~

~~Pollutant~~	~~Unit~~	~~Quarter 1~~	~~Quarter 2~~	~~Quarter 3~~	~~Quarter 4~~
~~NO_x~~	~~lbs/quarter~~	~~24,209~~	~~24,545~~	~~26,321~~	~~24,725~~
~~PM10~~	~~lbs/quarter~~	~~11,015~~	~~10,160~~	~~12,294~~	~~11,619~~

~~The District in agreement with the project owner may choose to decrease the above quarterly emission limits to correspond to the source test results pursuant to Condition 30.~~

Pollutant	Maximum Allowable Emissions (A) Combined Emissions from: Gas Turbine and Duct Burner and Cooling Tower				
	Quarter 1 lb/quarter	Quarter 2 lb/quarter	Quarter 3 lb/quarter	Quarter 4 lb/quarter	Total lb/year
ROC	8,792	8,898	13,264	8,968	39,922
NOx	24,209	24,545	26,321	24,725	99,800
SOx	1,814	1,836	1,944	1,853	7,447
PM10	11,015	10,160	12,294	11,619	45,088
CO	21,265	21,601	22,803	21,708	87,377

(A) Including start-ups, shutdowns and short term excursions as defined in Conditions **AQ-13**, **AQ-14** and **AQ-15**.

Verification: The project owner shall maintain appropriate emission data records as required by Conditions **AQ-~~8~~19** and **AQ-20**. A summary of significant operation and maintenance events and monitoring records shall be included in the quarterly operation report (**AQ-20**).

~~**AQ-14** Nitrogen Oxide emissions at the entire SPAC cogeneration project for any consecutive 12 month period shall be equal to or less than 49.9 tons per 12 month period.~~

~~**Verification**: The project owner shall maintain appropriate emission data records for any 12 month period and as required by Condition AQ-8.~~

~~**AQ-15** The combined cycle combustion turbine and its associated duct burner HRSG shall not emit more than 3 ppmvd nitrogen oxides at 15% O2, averaged over any consecutive three hour period, excluding periods containing start-ups and short term excursions as defined in Condition 19.~~

~~**Verification**: The project owner shall maintain appropriate emission data records as required by Condition AQ-8.~~

AQ-~~9~~16 ~~The combined cycle combustion turbine and its associated duct burner HRSG shall not emit more than 10 ppmvd ammonia at 15% O2 measured as NH3, averaged over any consecutive three hour period, excluding start-ups as~~

~~defined in Condition 19.~~ Concentrations of ammonia (NH3) emissions from the gas turbine and duct burner shall not exceed the following limit.

Pollutant	Maximum Allowable Ammonia Concentration ppmv at 15% O2 (measured as NH3) averaged over any consecutive 3 hour
Ammonia (NH3)	10

(A) Excluding start-ups, shutdowns and short term excursions as defined in Conditions **AQ-13**, **AQ-14** and **AQ-15**.

Verification: The project owner shall maintain appropriate emission data records as required by Conditions **AQ-~~8~~19** and **AQ-20**. A summary of significant operation and maintenance events and monitoring records shall be included in the quarterly operation report (**AQ-20**).

AQ-10 Hazardous Air Pollutants (HAPs) mass emissions from the facility shall not exceed the following limits:

Equipment	Maximum Allowable HAP Emissions (A) tons/year	
	Single HAP	Combination of HAPs
Total facility	9.4	24.4

(A) The purpose of this limitation is to qualify the gas turbines for the non-applicability of 40 CFR 63 Subpart YYYY - National Emission Standards for Hazardous Air Pollutants for Stationary Gas Turbines.

Verification: The project owner shall maintain appropriate emission data records as required by Conditions **AQ-19** and **AQ-20**. A summary of significant operation and maintenance events and monitoring records shall be included in the quarterly operation report (**AQ-20**).

EQUIPMENT CONDITIONS

Combined Cycle Combustion Turbine and Duct Burner

AQ-11~~17~~ The duct burner ~~HRSG~~ shall not be operated unless the ~~combustion~~ gas turbine is operating ~~and the SCR is functional~~.

Verification: The project owner shall maintain appropriate emission data records as required by Conditions **AQ-~~8~~19** and **AQ-20**.

AQ-12~~18~~ Except as specified in Condition **AQ-CM3** for the selective catalytic reduction system, the gas turbine and duct burner ~~The combined cycle combustion turbine~~ shall not be operated without fully ~~a~~ functioning selective catalytic reduction and oxidizing catalyst systems, excluding periods of start-ups and shutdowns.

Verification: The project owner shall maintain appropriate emission data records as required by Conditions **AQ-819** and **AQ-20**. A summary of significant operation and maintenance events and monitoring records shall be included in the quarterly operation report (**AQ-20**).

AQ-1319 The duration of the gas ~~combined cycle combustion~~ turbine's start-up period shall not exceed 60 minutes.

A. Gas turbine start-ups are defined as the time periods commencing with the introduction of fuel to the gas turbine~~,~~ and ending at the time that 15-minute average NOx concentrations do not exceed 3 ppmvd at 15% O2, but in no case exceeding 60 consecutive minutes.

~~Short-term excursions are defined as 15-minute periods designated by the project owner, not to exceed four consecutive 15-minute periods, when the 15-minute average NOx concentration exceeds 3 ppmvd corrected to 15% O2. Maximum 3-hour average NOx concentrations for periods that include short-term excursions shall not exceed 30 ppmvd corrected to 15%O2. Short-term excursion periods that total in excess of 10 hours per rolling 12-month period shall not be excluded from evaluations of compliance with limits in Conditions 11 and 15.~~

~~Any emissions during start-ups and short-term excursions shall be included in all calculations of daily, quarterly, and annual mass emissions required by this permit.~~

Verification: The project owner shall maintain appropriate emission data records as required by Conditions **AQ-819** and **AQ-20**. A summary of significant operation and maintenance events and monitoring records shall be included in the quarterly operation report (**AQ-20**).

AQ-14 Gas turbine shutdowns are defined as the 30-minute time period immediately preceding the termination of fuel to the gas turbine.

Verification: The project owner shall maintain appropriate emission data records as required by Conditions **AQ-19** and **AQ-20**. A summary of significant operation and maintenance events and monitoring records shall be included in the quarterly operation report (**AQ-20**).

AQ-15 Gas turbine short-term excursions are defined as 15-minute periods designated by the applicant that are a direct result of a diffusion mode switchover, not to exceed four consecutive 15-minute periods, when the 15-minute average NOx concentration exceeds 3 ppmvd at 15% O2.

A. Maximum 3-hour average NOx concentration for periods that include short-term excursions shall not exceed 30 ppmvd at 15% O2.

B. Short-term excursion periods that total in excess of 10 hours per rolling 12-month period shall not be excluded from evaluations for compliance with emission limits in Condition **AQ-5** and **AQ-6**.

Verification: The project owner shall maintain appropriate emission data records as required by Conditions **AQ-19** and **AQ-20**. A summary of significant operation and maintenance events and monitoring records shall be included in the quarterly operation report (**AQ-20**).

AQ-16 The gas turbine and duct burner shall only combust natural gas fuel.

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, and the Commission upon request.

Cooling Towers and Staff Compliance Requirements

AQ-SC1~~20~~ The cooling towers shall not use any chromium-containing water treatment chemicals.

Verification: The project owner shall maintain appropriate emission data records as required by Conditions **AQ-~~8~~19** and **AQ-20**.

AQ-SC2~~21~~ The total dissolved solids content of the circulating cooling water shall not exceed 3000 ppm, averaged over any consecutive three hour period.

Verification: The project owner shall maintain appropriate emission data records as required by Conditions **AQ-~~8~~19** and **AQ-20**.

AQ-SC3~~22~~ The cooling towers drift rate shall not exceed 0.0006%. The project owner shall provide a written vendor statement, prior to installation, declaring that the cooling towers mist eliminators used meet the drift criteria stated above.

Verification: At least 30 days prior to the installation of drift eliminators on the cooling towers, the project owner shall submit to the SMAQMD a written vendor statement declaring that the mist eliminators to be installed meet the drift rate stated above.

~~**NEW SOURCE PERFORMANCE STANDARDS COMPLIANCE**~~

~~**AQ-23** The project owner shall provide written notification to the Air Pollution Control Officer for the following:~~

~~a. The date construction is commenced, postmarked no later than 30 days after such date.~~

~~b. The anticipated date of initial start-up of the plant not more than 60 days nor less than 30 days prior to such date.~~

~~c. The actual date of initial start-up of the plant within 15 days after such date.~~

~~d. A notification of any physical or operational change to the facility which may increase the emission rate to which a standard applies except exempted~~

~~modifications as defined in 40 CFR 60.14(e), postmarked 60 days or as soon as practicable before the change is commenced.~~

~~e. The date upon which the demonstration of the continuous monitoring system performance commences, postmarked not less than 30 days prior to such date.~~

~~**Verification**: The project owner shall submit to the District and the Commission CPM on the schedules described above the information contained in this condition.~~

AQ-SC4~~24~~ The following tests, reports and conditions shall be met:

a. Within 60 days of terminating the recommissioning period ~~achieving the maximum production rate~~ but no later than 180 days after commencing the recommisioning period ~~initial start-up~~ the owner or operator will conduct performance test(s) as per Condition **AQ-SC5~~30~~** and furnish the Air Pollution Control Officer a written report of the results of such performance test(s).

b. The owner or operator shall provide the Air Pollution Control Officer ~~60~~30 30 days prior notice of the performance test(s).

Verification: The project owner shall notify the District and perform the source tests described above and submit to the District and the Commission CPM the results of the source tests within ~~30~~ 60 days from the completion of the tests, per the requirements of Condition **AQ-SC5~~30~~**.

~~**AQ-25** The following records shall be kept:~~

~~a. Maintain for a period of 2 years a record of the occurrence and duration of any start-up, shutdown, or malfunction in operation of any combustion turbine and a me of all measurements including continuous monitoring system, monitoring device and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices recorded in a permanent form suitable for inspection.~~

~~b. For each calendar quarter submit to the Air Pollution Control Officer a written report of excess emissions as defined in applicable rules and the date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments. The report shall include the magnitude of excess emissions as measured by the required monitoring equipment, reduced to the units of the applicable standard, the date, and time of commencement and completion of each period of excess emissions. Periods of excess emissions due to start-up, shutdown, and malfunction shall be specifically identified. The nature and cause of any malfunction (if known)", the corrective action taken, or preventive measures adopted shall be reported. Each quarterly report is due by the 30th day following the end of the calendar quarter. If there were no excess emissions for a~~

quarter a report shall be submitted indicating that there were no excess emissions.

Verification: The project owner shall submit the quarterly report described in this condition, no later than 30 days following the end of each calendar quarter, to the District Air Pollution Control Officer and the Commission CPM.

MONITORING SYSTEMS

AQ-26 The project owner shall install an Air Pollution Control Officer approved in-stack continuous emission monitoring system in the common exhaust of the combined cycle combustion turbine and HRSG.

a. The continuous emission monitoring (CEM) system shall monitor and record nitrogen oxides, carbon monoxide, and either oxygen or carbon dioxide concentrations. The project owner shall demonstrate that compliance with the applicable emission concentrations can be achieved through the monitoring of carbon dioxide to the satisfaction of the Air Pollution Control Officer before monitoring of carbon dioxide can be used in this capacity.

b. The CEM system shall comply with the EPA Performance Specifications (40 CFR, pt. 60, appen. B, Performance Specifications 2, 3, and 4).

c. The project owner shall receive Air Pollution Control Officer approval before purchasing the CEM equipment.

Verification: Sixty days prior to the planned purchase of the CEM system, the project owner shall submit a report to the District for approval describing the types of monitoring equipment that meets the requirements of this condition. Prior to turbine roll, the project owner shall notify the Commission CPM in writing that the required emissions monitoring system has been installed.

AQ-27 The project owner shall install an Air Pollution Control Officer approved continuous monitoring system that either measures or calculates and records the fuel consumption in mmBTU/hr of the combustion turbine and duct burner. The project owner shall receive Air Pollution Control Officer approval before purchasing the monitoring equipment.

Verification: Sixty days prior to the planned purchase of the fuel monitoring system, the project owner shall submit a report to the District for approval describing the types of monitoring equipment that meets the requirements of this Condition. Prior to turbine roll, the project owner shall notify the Commission CPM in writing that the required emissions monitoring system has been installed.

AQ-28 The project owner shall install an Air Pollution Control Officer approved monitoring system that measures and records the conductivity/total dissolved solids (TDS) level of the circulating water in the cooling tower. The project owner shall receive Air Pollution Control Officer approval before purchasing the monitoring equipment.

~~**Verification**: Sixty days prior to the planned purchase of the conductivity/total dissolved solids (TDS) monitoring system, the project owner shall submit a report to the District for approval, describing the type of monitoring equipment that meets the requirements of this condition. Prior to turbine roll, the project owner shall notify the Commission CPM in writing that the required monitoring system has been installed.~~

~~**AQ-29** The project owner shall install an Air Pollution Control Officer approved continuous monitoring system that either measures or calculates and records the exhaust gas flow of the common exhaust of the combined cycle combustion turbine and HRSG. The project owner shall receive Air Pollution Control Officer approval before purchasing the monitoring equipment.~~

~~**Verification**: 60 days prior to the planned purchase of the exhaust flow monitoring system, the project owner shall submit a report to the District for approval, describing the type of monitoring equipment that meets the requirements of this Condition. Prior to turbine roll, the project owner shall notify the Commission CPM in writing that the required emissions monitoring system has been installed.~~

~~**COMPLIANCE TESTING REQUIREMENTS**~~

AQ-SC5~~3~~0 The project owner shall perform an oxides of nitrogen (NOx) , reactive organic compounds (ROC), carbon monoxide (CO), particulate matter less than 10 microns (PM10), and ammonia (NH3)~~, and CEM accuracy~~ source test and CEM accuracy (RATA) test of the combined cycle combustion turbine with duct fired HRSG ~~shall be performed~~ during the time frame pursuant to Condition **AQ-SC4**~~2~~4.

a. Submit a test plan to the Air Pollution Control Officer for approval at least 30 days before the source test is to be performed.

b. During the test(s), the gas turbine and duct burner shall ~~HRSG are to~~ be operated at their maximum total firing capacity.

c. The source test results shall be submitted to the Air Pollution Control Officer within 60~~30~~ days from the completion of the source tests).

Verification: The project owner shall submit a test plan to the Air Pollution Control Officer for approval at least 30 days before the source tests are to be performed. The source test results shall be submitted to the Air Pollution Control Officer and the Commission CPM within 60~~30~~ days from the completion of the source tests.

MONITORING REQUIREMENTS

AQ-17 The permittee shall operate a continuous emission monitoring system that has been approved by the SMAQMD Air Pollution Control Officer for the gas turbine and duct burner.

A. The continuous emission monitoring (CEM) system shall monitor and record nitrogen oxides, carbon monoxide and oxygen.

B. For NOx and O2, the CEM system shall comply with U.S. EPA Performance Specifications in 40 CFR 75 Appendix A.

C. For CO, the CEM system shall comply with U.S. EPA Performance Specifications in 40 CFR 60 Appendix B Performance Specification 4.

Verification: The project owner shall provide a Continuous Emission Monitoring System (CEM) protocol for approval by the APCO and CPM. The project owner shall make the site available for inspection by representatives of the District, ARB, and the Commission upon request. A summary of significant operation and maintenance events and monitoring records shall be included in the quarterly operation report (**AQ-20**).

AQ-18 The permittee shall operate a continuous parameter monitoring system that has been approved by the SMAQMD Air Pollution Control Officer that either measures or calculates and records the following:

Parameter to be Monitored	**Units**
A. Fuel consumption of the combined cycle gas turbine	MMBTU/hour of natural gas
B. Fuel consumption of the duct burner MMBTU/hour of natural gas	MMBTU/hour of natural gas
C. Exhaust gas flow rate of the combined cycle gas turbine and the duct burner.	kscfh or lb/hr

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, and the Commission upon request.

RECORDKEEPING AND REPORTING REQUIREMENTS

AQ-19 The permittee shall continuously maintain onsite the following records for the most recent five year period and shall make such records available to the SMAQMD Air Pollution Control Officer upon request. Quarterly records as specified in the table below shall be made available for inspection within 30 days of the end of the quarter.

Frequency	**Information to be recorded**
Upon occurrence	A. Record of the occurrence and duration of any start-up, shutdown or short term excursion. i. The number of consecutive 15-minute periods when the 15-minute average NOx concentration exceeded the limits of Condition **AQ-5** during each short-term excursion. ii. The qualified condition(s) under which each short-term excursion occurred, pursuant to SMAQMD Rule No. 413 Section 114. iii. The maximum 6-hour average NOx concentration during the

	period that includes each short-term excursion. iv. The cumulative total, per calendar year, of all 15-minute periods when the 15-minute average NOx concentration exceeded the limits of Condition **AQ-5**. B. Malfunction in operation of the gas turbine. C. Measurements from the continuous emission and parameter monitoring systems. D. Monitoring device and performance testing measurements. E. All continuous monitoring system performance evaluations. F. All continuous monitoring system or monitoring device calibration checks G. All continuous monitoring system adjustments and maintenance.
Hourly	H. Gas turbine natural gas fuel consumption (MMBTU/hr). I. Duct burner natural gas fuel consumption (MMBTU/hr). J. Indicate when gas turbine start-up occurred. K. NOx emission concentration from the gas turbine and duct burner (ppmvd at 15% O2). L. ROC, NOx, SOx, PM10 and CO hourly emissions (lb/hour) from the gas turbine and duct burner (combined emissions). i. For those pollutants directly monitored (NOx and CO), the hourly emissions shall be from the CEM system required pursuant to Condition No. 17. ii. For those pollutants that are not directly monitored (ROC, SOx and PM10), the hourly emissions shall be calculated based on SMAQMD approved emission factors contained in the footnotes to Condition No. 6.
Daily	M. ROC, NOx, SOx, PM10 and CO daily mass emissions from all equipment separately and combined at the facility (lb/day): i. gas turbine and duct burner (for separate reporting the gas turbine and duct burner emission are combined). ii. cooling tower.
Quarterly	N. ROC, NOx, SOx, PM10 and CO quarterly mass emissions from all equipment combined at the facility (lb/quarter). i. gas turbine and duct burner. ii. cooling tower.

Verification: The project owner shall submit appropriate records as required by Condition **AQ-20**. The project owner shall make the site available for inspection by representatives of the District, ARB, and the Commission upon request.

AQ-20 Submit to the SMAQMD Air Pollution Control Officer a written report which contains the following information.

Frequency	**Information to be Reported**
Quarterly Submitted by: Jan 30 Apr 30 Jul 30 Oct 30 for the previous calendar quarter	A. Whenever the continuous emissions monitoring system is inoperative except for zero and span checks: i. Date and time of non-operation of the continuous emission monitoring system. ii. Nature of the continuous emission monitoring system repairs or adjustments. B. Whenever an emission occurs as measured by the required continuous emissions monitoring system that is in excess of any emission limitation: i. Magnitude of the emission which has been determined to be in excess. ii. Date and time of the commencement and completion of each period of excess emissions. iii. Periods of excess emissions due to startup, shutdown and malfunction shall be specifically identified. iv. The nature and cause of any malfunction (if known). v. The corrective action taken or preventive measures adopted. C. If there are no excess emissions or the continuous monitoring system has not been inoperative, repaired or adjusted for a calendar quarter, a report shall be submitted stating such information.

Verification: The project owner shall submit quarterly operation reports to the CPM and Air Pollution Control Officer (APCO) no later than 30 days following the end of each calendar quarter. This information shall be maintained on site for a minimum of five years and shall be provided to the CPM and District personnel upon request. The project owner shall make the site available for inspection by representatives of the District, ARB, and the Commission upon request.

EMISSION REDUCTION CREDIT (ERC) REQUIREMENTS

AQ-21 The permittee shall surrender (and has surrendered - See Conditions **AQ-22, AQ-23** and **AQ-24**) ERCs to the SMAQMD Air Pollution Control Officer to offset the following amount of emissions:

Equipment - Gas Turbine Duct Burner Cooling Tower	Amount of Emission Offsets for which ERCs are to be Surrendered lb/quarter			
	Quarter 1	Quarter 2	Quarter 3	Quarter 4
ROC	1,292	1,398	5,764	1,468
NOx	24,209	24,545	26,321	24,725
PM10	11,015	10,160	12,294	11,619

Verification: No verification necessary.

AQ-22 The following ERCs have been surrendered to the SMAQMD Air Pollution Control Officer to comply with the ROC emission offset requirements as stated in Condition **AQ-21**:

ERC Certificate No.	Face Value of Emission Reduction Credit Certificates lb/quarter				IPTR (A)	Offset Ratio	Value Applied to ROC Emission Liability lb/quarter			
	Qtr 1	Qtr 2	Qtr 3	Qtr 4			Qtr 1	Qtr 2	Qtr 3	Qtr 4
SMAQMD 00-00652 Swansons	1,550	1,678	6,917	1,762	NA	1.2	1,292	1,398	5,764	1,468
Total ROC Emission Offsets							1,292	1,398	5,764	1,468

(A) IPTR = interpollutant trading ratio

Verification: No verification necessary.

AQ-23 The following ERCs have been surrendered to the SMAQMD Air Pollution Control Officer to comply with the NOx emission offset requirements as stated in Condition **AQ-21**:

ERC Certificate No.	Face Value of Emission Reduction credit Certificates lb/quarter				IPTR (A)	Offset Ratio	Value Applied to NOx Emission Liability lb/quarter			
	Qtr 1	Qtr 2	Qtr 3	Qtr 4			Qtr 1	Qtr 2	Qtr 3	Qtr 4
SMAQMD 97-00437 Campbell	23,622	13,491	31,585	20,983	NA	1.2:1	19,685	11,243	26,321	17,486
PCAQMD 98-00002 Formica (ROC)	18,096	53,208	0	28,956	2:1	2:1	4,524	13,302	0	7,239
Total NOx Emission Offsets							24,209	24,545	26,321	24,725

(A) IPTR = interpollutant trading ratio

Verification: No verification necessary.

AQ-24 The following ERCs have been surrendered to the SMAQMD Air Pollution Control Officer to comply with the PM10 emission offset requirements as stated in Condition **AQ-21**:

Offset Source	Face Value of Emission Reduction credit Certificates lb/quarter				IPTR (A)	Offset Ratio	Value Applied to PM10 Emission Liability lb/quarter			
	Qtr 1	Qtr 2	Qtr 3	Qtr 4			Qtr 1	Qtr 2	Qtr 3	Qtr 4
PCAPCD 99-00003 Sierra Pine	16,523	15,240	18,441	17,429	NA	1.5	11,015	10,160	12,294	11,619
Total PM10 Emission Offsets							11,015	10,160	12,294	11,619

(A) IPTR = interpollutant trading ratio

Verification: No verification necessary.

EMISSION TESTING REQUIREMENTS

AQ-2531 The permittee shall perform an ROC, NOx, PM10, CO and ammonia (NH3) source test and CEM accuracy (RATA) test of the ~~common exhaust of the combined cycle combustion~~ gas turbine and duct burner once each ~~HRSG shall be performed annually during the~~ calendar year.

a. Submit a source test plan to the SMAQMD Air Pollution Control Officer for approval at least 30 days before the source test is to be performed. The source test plan shall indicate that U.S. EPA approved test methods are used for NOx and CO.

b. Notify the SMAQMD Air Pollution Control Officer at least 7 days prior to the source testing date if the date has changed from that approved in the source test plan.

c~~b~~. During the source test(s), the gas turbine and duct burner ~~HRSG~~ shall ~~are to~~ be operated at the~~ir~~ maximum total firing capacity ~~ies~~, defined as > or = 90% of the heat input capacity achievable at the time of the source test, based on then current ambient conditions.

d~~c~~. Submit the source test report ~~results shall be submitted~~ to the SMAQMD Air Pollution Control Officer within 6030 days after ~~from~~ the completion of the source test(s).

e~~d~~. The SMAQMD Air Pollution Control Officer may waive the ROC and PM10 annual ~~PM10~~ source test requirement every other year if~~, in the Air Pollution Control Officer's sole judgment,~~ the prior annual source test result~~s~~ indicates that the respective hourly emissions are less than or equal to 75% of the respective hourly emission limit ~~an adequate compliance margin has been maintained~~.

Verification: The project owner shall submit a test plan to the Air Pollution Control Officer for approval at least 30 days before the source tests are to be performed. The source test results shall be submitted to the Air Pollution Control Officer and the Commission CPM within 6030 days from the completion of the source tests.

~~**EMISSION REDUCTION CREDITS**~~

AQ-32 Deleted. ~~Prior to construction of the SPAC Cogeneration Project, the project owner shall provide the District emission reduction credit certificates in sufficient quantity to show compliance with the quarierly emission limits by the use of the following calculation procedure.~~

~~QTRq = Pq<=15/1.2 + Pq>15/2.0~~

~~Pq = Emission offset credit for pollutant in lb/quarter~~

q = Quarter (1, 2, 3, or 4)

QTR= This is the quarterly emission limit specified in Condition AQ-13.

<=15 = Those emission reduction credit certificates whose point of origin was within 15 miles of the SPAC Cogeneration project.

>15 = Those emission reduction credit certificates whose point of origin was greater than 15 miles but less than 50 from the SPA Cogeneration project.

Verification: Before the commencement of construction, the project owner shall provide the Air Pollution Control Officer and the Commission CPM with the emission reduction credits described in this condition.

AQ-33 Deleted. ROG emissions reduction credits may be traded for NOx emissions reduction credits at a ratio of 2 lb ROG to 1 lb NOx.

Verification: Before the commencement of construction, the project owner shall provide the Air Pollution Control Officer and the Commission CPM with the information described in this Condition.

AQ-34 Deleted. The proposed NOx ERC's and their amounts are presented below.

	Face Value Of Certificates Surrendered						Value Applied To The Emission Liability			
	Qtrl	Qtr2	Qtr3	Qtr4	I.P. Trading Ratio	Offset Ratio	Qtrl	Qtr2	Qtr3	Qtr4
Campbell Soup	23,622	13,491	31,585	20,983	1	1.2	19,685	11,243	26,321	17,486
Formica	(8,096)	53,208	0	28,956	2	2.0	4,524	13,302	0	7,239
						Sub Total	24,209	24,545	26,321	24,725
						NO. Liability of the Project	24,209	24,545	26,321	24,725

Verification: Before the commencement of construction, the project owner shall provide the Air Pollution Control Officer and the Commission CPM with the copy of the banking certificates that show ROG and NOx reductions of at least the amount described in this condition.

AQ-34a Deleted. Prior to operation under the terms of this Authority to Construct, SPA must surrender the following amounts of ROC and PM10 emission reduction credits. The proposed ROC and PM10 ERC's and their amounts are presented below.

	Face Value Of Certificates	Offset Ratio	Value Applied To The Emission Liability

	Qtr1	Qtr2	Qtr3	Qtr4		Qtr1	Qtr2	Qtr3	Qtr4
Swansons	1,550	1,678	6,917	1,762	1.2	1,292	1,398	5,764	1,468
ROC Liability of the Project						1,292	1,398	5,764	1,468

	Face Value Of Certificates				Offset Ratio	Value Applied To The Emission Liability			
	Qtr1	Qtr2	Qtr3	Qtr4		Qtr1	Qtr2	Qtr3	Qtr4
SierraPine	16,523	15,240	18,441	17,429	1.5	11,015	10,160	12,294	11,610
PM10 Liability of the Project						11,015	10,160	12,294	11,610

Verification: The project owner shall provide the District APCO the banking certificates that show the ROC and PM10 reductions of at least the amounts described in this condition. The project owner shall provide the Commission CPM with the copies of the certificates 30 days after approval of this condition.

ADDITIONAL COMMISSION CONDITIONS

AQ-35 Deleted. a. Area of disturbance within the construction site shall be watered so that it is visibly wet, twice or more daily, as necessary. This Condition shall not apply on rainy days where the ground is visibly wet.

b. Except for emergency and site surveyor vehicles, and activities in transmission line construction areas, vehicular movement on unpaved and undisturbed areas is prohibited.

c. Except for trucks using the transmission corridor south of 47th Avenue, all truck tires shall be cleaned of dirt using water spraying, or operation of equivalent effectiveness, subject to the CEC CPM approval, prior to entering public roadways.

d. At least 500 yards of public roadways from the construction site or the transmission lines entrances shall be cleaned on a weekly basis, or when there are visible dirt tracks on the public roadways with either mechanical sweeper or water flushing.

e. All trucks hauling excavated soils which have a potential to generate fugitive dust shall have the soil loads covered.

f. All construction equipment shall be properly maintained to detect and prevent mechanical problems that may cause excess emissions.

g. A speed limit sign shall be posted at the entrance of the construction site, to limit vehicle speed to no more than 15 miles per hour on unpaved areas.

Verification: Not later than ninety (90) days prior to the start of construction, the project owner shall submit approved copies of the plan(s) from each local jurisdiction to the Commission CPM for review and approval.

The project owner shall maintain a daily log of water truck activities, including the number of gallons of water used to reduce the dust at the construction sites. This log shall be available for inspection by the CEC CPM during the construction period. The project owner shall submit in its monthly construction reports the area that the project owner shall cover or treat with a dust suppressant. The project owner shall make the construction site available to the District and the CEC CPM for inspection and monitoring.

AQ-36 Deleted. The vehicle emissions from the facility construction activities shall be minimized by applying the following practices:

a. All construction equipment shall be properly maintained to detect and prevent mechanical problems that may cause excess emissions.

b. Only on-road vehicle diesel fuel can be used for construction equipment.

c. No construction equipment shall be kept idling when not in use for more than 30 minutes.

Verification: The project owner shall maintain records of fuel purchases for construction equipment as required in Condition AQ-36 (b). The project owner shall also allow site inspection as per Condition AQ-3.

AQ-37 through AQ-39 Deleted and Replaced with AQ-42 through AQ-46.

AQ-40 Deleted and Replaced with AQ-33.

AQ-41 Deleted December 17, 1997.

AQ-42 Deleted. The project owner shall obtain from the SMAQMD Permits to Operate (PTO) for the facility, as required by the District's rules and regulations.

Verification: Within six months after commercial operation commences, the project owner shall submit a copy of the SMAQMD PTOs to the CEC CPM or, if the PTOs have not been issued, the project owner shall submit a status report indicating when the PTOs are likely to be issued.

NOTE: The following Conditions of Certification which pertain to the Procter & Gamble project provide the basis for the conclusion by the Staff that emissions from the Campbell project have been fully offset.

AQ-43 Deleted. Prior to operation of the Sacramento Power Authority at Campbell (SPAC) cogeneration project's combined-cycle unit, Sacramento Power Authority (SPA) shall provide evidence to the CEC CPM that the Sacramento Cogeneration Authority (SCA) has secured Grace Industries NOx emission

~~reduction credits (ERCs) for the Procter & Gamble Cogeneration project in the amounts specified below:~~

~~January through March - 20,080 lb/calendar quarter;~~
~~April through June - 19,171 lb/calendar quarter;~~
~~July through September - 19,542 lb/calendar quarter; and~~
~~October through December - 19,760 lb/calendar quarter.~~

~~**Verification**: 45 days prior to initial start up of the SPAC project's gas fired turbine, SPA shall submit to the CEC CPM copies of the banking certificates surrendered to the SMAQMD, which show NOx emission reductions at Grace Industries of at least as much as those amounts specified in Condition 43.~~

AQ-44 Deleted. ~~Prior to operation of the Sacramento Power Authority at Campbell (SPAC) cogeneration project's combined cycle unit, Sacramento Power Authority (SPA) shall provide evidence to the CEC CPM that the Sacramento Cogeneration Authority (SCA) has secured Unocal NOx emission reduction credits (ERCs) for the Procter & Gamble Cogeneration project in the amounts specified below:~~

~~January through March - 41,616 lb/calendar quarter;~~
~~April through June - 41,616 lb/calendar quarter;~~
~~July through September - 41,616 lb/calendar quarter; and~~
~~October through December - 41,616 lb/calendar quarter.~~

~~**Verification**: 45 days prior to initial start up of the SPAC project's gas fired turbine, SPA shall submit to the CEC CPM copies of the banking certificates surrendered to the SMAQMD, which show NOx emission reductions at Unocal of at least as much as those amounts specified in Condition 44.~~

AQ-45 Deleted. ~~Prior to operation of the Sacramento Power Authority at Campbell (SPAC) cogeneration project's combined cycle unit, Sacramento Power Authority (SPA) shall provide evidence to the CEC CPM that the Sacramento Cogeneration Authority (SCA) has secured Formica ROC emission reduction credits (ERCs) for the Procter & Gamble Cogeneration project in the amounts specified below:~~

~~January through March - 1,580 lb/calendar quarter;~~
~~April through June - 6,276 lb/calendar quarter;~~
~~July through September - 6,716 lb/calendar quarter; and~~
~~October through December - 5,988 lb/calendar quarter.~~

~~**Verification**: 45 days prior to initial start up of the SPAC project's gas fired turbine, SPA shall submit to the CEC CPM copies of the banking certificates surrendered to the SMAQMD, which show ROC emission reductions at Formica of at least as much as those amounts specified in Condition 45.~~

AQ-46 Deleted. ~~Prior to operation of the Sacramento Power Authority at Campbell (SPAC) cogeneration project's combined cycle unit, Sacramento Power Authority (SPA) shall provide evidence to the CEC CPM that the Sacramento Cogeneration Authority (SCA) has secured SierraPine PM10 emission~~

~~reduction credits (ERCs) for the Procter & Gamble Cogeneration project in the amounts specified below:~~

~~January through March – 27,376 lb/calendar quarter;~~
~~April through June – 27,680 lb/calendar quarter;~~
~~July through September – 27,982 lb/calendar quarter; and~~
~~October through December – 27,982 lb/calendar quarter.~~

~~**Verification**: 45 days prior to initial start-up of the SPAC project's gas-fired turbine, SPA shall submit to the CEC CPM copies of the banking certificates surrendered to the SMAQMD, which show PM10 emission reductions at SierraPine of at least as much as those amounts specified in Condition 46.~~

AQ-47 Deleted. ~~If the project owner of the Procter & Gamble Cogeneration Project intends to obtain a return of any emission reduction credits identified in SPAC Conditions AQ 43 - 46, pursuant to SMAQMD Rule 204, Section 308, the SPAC project owner must notify the CEC CPM and demonstrate that there is sufficient mitigation for the SPAC Project. Rule 204, Section 308 states the following:~~

~~**RETURNS - ISSUANCE OF PERMIT TO OPERATE**: If the applicant for a Permit to Operate requests a lowering of the quarterly emission limitation as a result of emissions testing conducted pursuant to an Authority to Construct demonstrated achievable by such emissions testing, the difference in emission reductions credits necessary to offset the emissions unit pursuant to Rule 202, NEW SOURCE REVIEW, shall be re-deposited in the Bank: and re-entered into the Register.~~

~~**Verification**: At the time the project owner of the Procter & Gamble Cogeneration Project requests the return of any emission reduction credits, the SPAC project owner must send the Commission CPM a copy of the request and a written demonstration that there will be sufficient mitigation for the SPAC Project.~~

NEW CONDITIONS FOR RECOMMISSIONING

Startup and Commissioning Period

AQ-S1 The project owner shall notify the Compliance Project Manager (CPM) and the SMAQMD, in writing, of the date that the recommissioning period will begin.

Verification: The project owner shall provide notification of the start of recommissioning to the CPM and SMAQMD at least 30 days before starting the recommissioning activity.

AQ-CM1 The recommissioning period is defined as follows: "The recommissioning period shall commence when all mechanical, electrical and control systems associated with the Siemens T-3000 control system are installed and the gas turbine is first fired. The recommissioning period shall terminate 30 operating

days after commencement, or when the SPA facility has successfully completed performance testing, tuning and shakedown operations and compliance is demonstrated by continuous emissions monitoring equipment, whichever occurs first. For purposes of this condition, "operating day" is defined as any calendar day during which fuel is combusted in the turbine or duct burner."

Verification: No verification necessary.

AQ-CM2 The facility shall record the date that the recommissioning period terminates and submit written notification of this date to the SMAQMD Air Pollution Control Officer within 3 weekdays (Monday through Friday) of such termination.

Verification: The project owner shall provide notification of the end of re-commissioning to the CPM and SMAQMD within 3 weekdays after completing the re-commissioning activity.

AQ-CM3 During the recommissioning period at the earliest feasible opportunity, in accordance with recommendations of the equipment manufacturers and the construction contractor, the gas turbine combustors shall be tuned to minimize emissions of CO and NOx.

Verification: A summary of significant operation and maintenance events shall be included in a report of re-commissioning activities provided to the CPM and SMAQMD within 30 days after completing the re-commissioning activity.

AQ-CM4 During the recommissioning period, at the earliest feasible opportunity, in accordance with recommendations of the equipment manufacturers and the construction contractor, the gas turbine and duct burner shall operate with the Selective Catalytic Reduction (SCR) system. The SCR system shall be adjusted and operated to minimize emissions of NOx.

Verification: A summary of significant operation and maintenance events shall be included in a report of re-commissioning activities provided to the CPM and SMAQMD within 30 days after completing the re-commissioning activity.

AQ-CM5 During the recommissioning period, compliance with NOx and CO emission limits for the gas turbine and duct burner shall be demonstrated through the use of properly operated and maintained continuous emission monitoring systems and continuous parameter monitoring systems for the following:

A. Firing hours of the gas turbine and duct burner
B. Fuel flow rates to the gas turbine and duct burner
C. Stack gas NOx emission concentrations
D. Stack gas CO emission concentrations
E. Stack gas O2 concentrations

Verification: A summary of monitoring records shall be included in a report of re-commissioning activities provided to the CPM and SMAQMD within 30 days after completing the re-commissioning activity.

AQ-CM6 During the recommissioning period 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 gas turbine and duct burner. Previously approved methods shall be used to calculate heat input rates, NOx and CO mass emission rates, and NOx 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 SMAQMD personnel upon request.

Verification: A summary of monitoring records shall be included in a report of re-commissioning activities provided to the CPM and SMAQMD within 30 days after completing the re-commissioning activity.

AQ-CM7 During the recommissioning period the continuous emission and parameter monitors shall be installed, calibrated and operational prior to firing of the gas turbine and duct burner with the new master control system. After initial firing of the gas turbine and duct burner, the detection range of these continuous emission monitors shall be adjusted as necessary to accurately measure the resulting range of NOx and CO emission concentrations.

Verification: A summary of monitoring records shall be included in a report of re-commissioning activities provided to the CPM and SMAQMD within 30 days after completing the re-commissioning activity.

AQ-CM8 During the recommissioning period the total number of firing hours of the gas turbine and duct burner without control of NOx emissions by the SCR system shall not exceed 100 hours. Such operation of the gas turbine and duct burner shall be limited to discrete recommissioning activities that can only be properly executed without the SCR system fully operational.

A. The number of firing hours of the gas turbine and duct burner without control of NOx emissions by the SCR system shall be recorded on an hourly basis during the recommissioning period.

Verification: A summary of monitoring records shall be included in a report of re-commissioning activities provided to the CPM and SMAQMD within 30 days after completing the re-commissioning activity.

AQ-CM9 During the recommissioning period the total mass emissions of ROC, NOx, SOx, PMI0 and CO that are emitted by the gas turbine and duct burner shall accrue towards the quarterly mass emission limits in Condition **AQ-8**.

Verification: A summary of monitoring records shall be included in a report of re-commissioning activities provided to the CPM and SMAQMD within 30 days after completing the re-commissioning activity.

AQ-CM10 During the recommissioning period the concentration of nitrogen oxides (NOx) emissions from the gas turbine and duct burner shall not exceed the following limit:

Pollutant	Maximum Allowable NOx Concentration Gas Turbine and Duct Burner ppmv at 15% O2, averaged over any consecutive 3 hour period	
	Current Permit Limit	Permit Limit Applicable During the Recommissioning Period
NOx	3	No limit

Verification: A summary of significant operation and maintenance events shall be included in a report of re-commissioning activities provided to the CPM and SMAQMD within 30 days after completing the re-commissioning activity.

AQ-CM11 During the recommissioning period hourly mass emissions from the gas turbine and duct burner shall not exceed the following limits:

Pollutant	Maximum Allowable Hourly Emissions Gas Turbine and Duct Burner lb/hour, averaged over any consecutive 3 hour period	
	Current Permit Limits	Permit Limits During the Recommissioning Period
ROC	9.01	9.01 (no change)
NOx	17.76	360
SO2	0.97	0.97 (no change)
PM10	7.00	7.00 (no change)
CO	10.81	500

Verification: A summary of significant operation and maintenance events shall be included in a report of re-commissioning activities provided to the CPM and SMAQMD within 30 days after completing the re-commissioning activity.

AQ-CM12 During the recommissioning period daily mass emissions from the gas turbine and duct burner shall not exceed the following limits:

Pollutant	Maximum Allowable Daily Emissions Gas Turbine and Duct Burner lb/day	
	Current Permit Limits	Permit Limits During the Recommissioning Period
ROC	146.7	146.7 (no change)
NOx	384.5	1500
SO2	21.8	21.8 (no change)
PM10	142.1	142.1 (no change)
CO	326.9	1875

Verification: A summary of significant operation and maintenance events shall be included in a report of re-commissioning activities provided to the CPM and SMAQMD within 30 days after completing the re-commissioning activity.

REFERENCES

CEC (California Energy Commission). 1994. Energy Commission Decision (CEC Pub. No. P800-94-011). November 30, 1994.

CEC 1997. Order No. 97-1217-05. Effective December 17, 1997.

CEC 1998. Order No. 98-0415-03. Effective April 15, 1998.

CEC 1999. Order No. 99-1215-08. Effective December 15, 1999.

SMAQMD (Sacramento Metropolitan Air Quality Management District). 2009a. Engineering Evaluation and Proposed Authority to Construct. Facility Name: Sacramento Power Authority (SPA). Application No. A/C 21738. February 19, 2009.

SMAQMD 2009b. Authority to Construct, Issued to: Sacramento Power Authority (SPA), A/C 21738. May 21, 2009.

SPA (Sacramento Power Authority). 2009a. Petition for Post Certification License Amendment. SPA Cogeneration Project. CEC Docket: 1993-AFC-3C. February 9, 2009.

SPA 2009b. Errata to Petition to Amend Conditions of Certification (93-AFC-3C). February 24, 2009.

SPA 2009c. Response to Data Requests 1 to 5 for Amendment 2009-1 (93-AFC-3C). April 6, 2009.

SPA 2009d. Responses to Don Enderton Comment Letter, dated March 2, 2009 (93-AFC-3C). Docketed May 20, 2009.