

DOCKETED

Docket Number:	84-AFC-06C
Project Title:	Compliance - Application for Certification of Sycamore Cogeneration Project
TN #:	214820
Document Title:	Commission Order (94-1214-13f) Approving Modification of Air Quality Monitoring
Description:	ORDER APPROVING Amendments to the Air Quality Conditions of certification 12/14/1994
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Organization:	California Energy Commission
Submitter Role:	Commission Staff
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1. The proposed changes to the Air Quality Conditions of Certification are consistent with the overall intent of the SCC decision;
2. The proposed changes do not appear to harm the public interest or the interest of any previous party to the certification proceeding;
3. The proposed changes are based on information not reasonably or readily available to the parties prior to certification;
4. Staff has received no negative comments from interested parties notified of the proposed changes;
5. SCC and the District are in agreement with the proposed changes;
6. There are no new or additional unmitigated environmental impacts associated with these changes.

CONCLUSION AND ORDER

The Commission hereby adopts staff's recommendations and findings as its own and hereby orders the Sycamore Cogeneration Project Air Quality Conditions of Certification be amended to read as follows:

AQ-1 Before implementing any major change in the Air Emissions Control Systems (AECS), Emissions Monitoring System (EMS), or the Computer Control System (CCS), Sycamore Cogeneration Company shall submit the proposed change for approval. Examples of major changes are the use of an alternative AECS, EMS, or CCS, or a major change in the performance criteria.

Verification: Sixty (60) days before implementing any major change identified above, Sycamore Cogeneration Company shall submit to the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) and the California Energy Commission (CEC) the design details of the proposed change and a discussion of the potential change in air emissions from the project. Sycamore Cogeneration Company shall receive written approval from the SJVUAPCD and CEC prior to implementing any major change.

AQ-2 Sycamore Cogeneration Company shall obtain from the U.S. Environmental Protection Agency (EPA), a Prevention of Significant Deterioration (PSD) permit or exemption.

Verification: Within 30 days of receipt of the PSD permit or PSD exemption notification from EPA, Sycamore Cogeneration Company shall submit a copy of the PSD permit or exemption notification to the CEC and the SJVUAPCD.

AQ-3 All areas disturbed by construction in the immediate vicinity, and under Sycamore Cogeneration Company's responsibility during the construction phase, shall be properly and routinely treated for dust

control by water application or paving (for access roads and construction sites), with the intent of meeting the requirements of SJVUAPCD's nuisance rule.

Verification: Sycamore Cogeneration Company shall make the construction site available to the SJVUAPCD and CEC staff for inspection and monitoring. If any dust suppressant other than water is proposed, Sycamore Cogeneration Company shall obtain approval from the SJVUAPCD.

AQ-4 The SJVUAPCD shall monitor compliance of the site preparation, construction, and operation of the Sycamore Cogeneration Company's Sycamore Project cogeneration plant with the Determination of Compliance and the Conditions of Certification contained in the CEC Decision on the Sycamore Project cogeneration plant, as they relate to air quality laws. The SJVUAPCD shall perform all duties and functions normally conducted by the SJVUAPCD and shall have the authority to issue a Permit to Operate. The conditions of the Permit to Operate shall be consistent with the CEC Certification Conditions.

Verification: The SJVUAPCD and the CEC staff will, at the request of either party, meet to review the status of project compliance. The CEC staff shall be allowed to review the SJVUAPCD's enforcement and project files except for "trade secrets" which will be managed as set forth in SJVUAPCD rules.

AQ-5 Sycamore Cogeneration Company shall design the Sycamore Project using the following design conditions:

- a. The combustion turbine generators (CTGs) shall be retrofitted with dry low NO_x (DLN) combustors, capable of achieving 16.4 ppm or better at 15 percent O₂ based on a three hour rolling average and a one hour maximum of 19.2 ppm at 15 percent O₂ according to the schedule in Condition AQ-28.
- b. CTGs using multiple combustors shall be designed to be capable of achieving proposed emission levels.
- c. Exhaust gas ducting from CTGs through HRSGs to the atmosphere shall be gas-tight.
- d. Bypass stack valve preceding each HRSG shall be designed to be gas tight.
- e. Each CTG shall have a fuel consumption monitor/recorder.
- f. Each HRSG exhaust stack shall be equipped with permanent stack sampling provisions consistent with Rule 1081, EPA reference Methods 5 and 8 and OSHA requirements.
- g. Turbine maximum heat input rate shall not exceed 1,020 MMBtu/hr when fired on natural gas or fuel oil without prior District approval.

Verification: Sycamore Cogeneration Company shall maintain and make available for inspection the "Approved for Construction Drawings" to the SJVUAPCD, CARB, and CEC upon reasonable notice (1 hour for weekdays, 8 hours for weekends and holidays). Sycamore Cogeneration Company shall make the site available for inspection by the SJVUAPCD, CARB, and CEC staff during both construction and operation upon

reasonable notice (one hour for weekdays, eight hours for weekends and holidays).

-6 Visible emissions from any single source operation shall not exhibit 20 percent opacity (or Ringelmann 1) or greater for periods in excess of three minutes in any one hour period.

Verification: Sycamore Cogeneration Company shall provide SJVUAPCD access to the project site to verify/monitor visible emissions.

AQ-7 Exhaust gas particulate matter concentration shall not exceed 0.0072 gr/scf calculated at 12 percent CO.

Verification: Sycamore Cogeneration Company shall allow authorized representatives of the SJVUAPCD, CARB and CEC staff to enter the power plant site within one hour or sooner to monitor compliance with this Condition.

AQ-8 No CTG shall fire fuel oil at any time.

Verification: Sycamore Cogeneration Company shall maintain a natural gas consumption log on-site for inspection by SJVUAPCD, CARB and CEC staff of monthly fuel consumed.

AQ-9 Sixty-two (62) steam generators shall be permanently shut down and Permits to Operate surrendered (APCD#'s 4003206, 214, 215, 216, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 246, 252, 255, 256, 257, 258, 259, 260, 262, 263, 264, 265, 266, 267, 276, 277, 310, 317, 352, 3, 354, 355, 362, 365, 368, 370, 373, 376, 397, 398, 399, 400, 401, 405, 414, 418, 419, 420, 423, 435, 436, 440, 441, 449 and 450).

Verification: For the sixty-two (62) steam generators referenced above, the Permits to Operate shall be surrendered and the steam generators shall be physically dismantled. Sycamore shall provide documentation to the CEC that this has been completed.

AQ-10 Deleted (the owner/operator will no longer use fuel oil as a backup fuel).

AQ-11 The SJVUAPCD shall receive immediate notification of pending operational status changes of the turbines. Operational records, including but not limited to fuel type or fuel characteristics, shall be maintained by Sycamore Cogeneration Company and made available to SJVUAPCD staff upon request.

Verification: Sycamore Cogeneration Company shall make the operational logs available for inspection by the SJVUAPCD, CARB, and CEC staff. Sycamore Cogeneration Company shall provide the SJVUAPCD and CEC with copies of the operational logs upon request. Monthly fuel use and fuel type logs for each turbine-generator set shall be included in the quarterly compliance reports submitted to the CEC.

AQ-12 The water injection system shall be used as required to control NO_x emissions at or below 140 lbm NO_x/hr until such time as the DLN combustors are operational according to the schedule in condition AQ-28.

Verification: Sycamore Cogeneration Company shall maintain records on the operation of the water injection system for the turbines as a part of the operational log required in Condition AQ-11. Sycamore Cogeneration Company shall provide SJVUAPCD and CEC with copies of the log upon request.

AQ-13 The Sycamore Project facility shall operate as a cogeneration facility pursuant to Public Resources Code Section 25134 for thermally enhanced oil recovery operations.

Verification: Sycamore Cogeneration Company shall maintain records on steam production as a portion of the operation log required in Condition AQ-11. The record shall include, but is not limited to hours of operation of the turbines and HRSGs, lb/hr of steam produced and temperature and pressure of steam produced.

AQ-14 Accurate records of NO_x (as NO₂) and CO flue gas concentrations corrected to 15 percent O₂ dry and CTG fuel sulfur content shall be maintained and shall be reported as described by SJVUAPCD Rule 1080 and upon request.

Verification: Sycamore Cogeneration Company shall make the continuous emission monitors and recorded measurements as well as fuel consumption records available to the SJVUAPCD, CARB, and CEC upon request.

AQ-15 Deleted (the owner/operator will no longer use fuel oil as a backup fuel).

AQ-16 Deleted (the owner/operator will no longer use fuel oil as a backup fuel)

AQ-17 Tankage water drawoffs, if any, shall consist of closed piping to the existing water treatment plant.

Verification: Sycamore Cogeneration Company shall provide access to the SJVUAPCD to inspect the tankage water system.

- AQ-18
- a. Start up or planned shut down of a CTG shall not exceed a time period of two (2) continuous hours.
 - b. For all CTGs the following hourly emission limits shall apply during times of start up or planned shut down and shall be averaged over the two hour period allowed for start up or shut down:

NO ₂	140.0	lbm/hr
CO	140.0	lbm/hr

Verification: Sycamore Cogeneration Company shall maintain records necessary to submit quarterly reports to show start up or planned shut down days and daily emissions for those days. This information shall be included in the quarterly reports already submitted to the CEC and SJVUAPCD.

AQ-19 Pollutant emissions from each combustion turbine prior to being retrofitted with the DLN combustor shall not exceed the following limits except during times of start up or shut down as defined in Condition AQ-18:

Gas Fired Case:

Particulates (PM-10)	-	5.0 lbm/hr
Sulfur Compounds	-	0.5 lbm/hr as SO ₂
	-	0.6 lbm/hr as SO ₄
Oxides of Nitrogen	-	140.0 lbm/hr as NO ₂
Hydrocarbons	-	2.5 lbm/hr) (Non-meth)
Carbon Monoxide	-	392 lbm/day

Pollutant emissions from each DLN CTG shall not exceed the following limits except during times of start up or shut down as defined in Condition AQ-18:

Gas Fired Case:

Particulates (PM-10)	-	5.0 lbm/hr
Sulfur Compounds	-	0.5 lbm/hr as SO ₂
	-	0.6 lbm/hr as SO ₄
Oxides of Nitrogen	-	1137.6 lbm/day and
	-	47.4 lbm/hr as NO ₂
	-	and 16.4 ppmv at 15 % O ₂ ,
	-	calculated on a 3 hour rolling average.
	-	Not to exceed 55.5 lbm/hr.
Hydrocarbons	-	2.5 lbm/hr (Non-methane)
Carbon Monoxide	-	1056 lbm/day and 25 ppmv at 15% O ₂

Verification:

- a. At least sixty (60) days before the commercial operation date of the cogeneration facility, and 60 days before the permit to operate anniversary date, Sycamore Cogeneration Company shall submit to the SJVUAPCD, CARB and CEC a detailed performance test plan for the power plant's AECS. The performance test will be funded by Sycamore Cogeneration Company and conducted by a third party. The SJVUAPCD will notify Sycamore Cogeneration Company and the CEC of its approval, disapproval or proposed modifications to the plan within 30 days of receipt of the plan. Sycamore Cogeneration Company shall incorporate the SJVUAPCD's and CEC's comments on, or modifications to, the plan.

- b. Sycamore Cogeneration Company shall notify the SJVUAPCD and CEC within 5 days before the facility begins commercial operation. Sycamore Cogeneration Company shall also notify the SJVUAPCD one week prior to the beginning of testing to allow the SJVUAPCD to observe and/or conduct concurrent sampling.
- c. Sycamore Cogeneration Company shall submit the results of the compliance test within 30 days of completion of the tests. Sycamore Cogeneration Company shall submit to the SJVUAPCD its application for a Permit to Operate via registered mail. Sycamore Cogeneration Company shall submit a copy of the application to the CEC within 10 days of its submittal to the SJVUAPCD. The SJVUAPCD shall approve or disapprove the application as prescribed in SJVUAPCD rules.

AQ-20 A continuous emission monitoring system for NO_x (as NO₂), CO and CO₂ shall serve each CTG flue gas stream and shall conform to SJVUAPCD Rule 1080 specifications.

Verification: Sycamore Cogeneration Company shall submit to the SJVUAPCD and CEC, 120 days before the start-up of the facility, a continuous emission monitoring plan. The plan will describe the monitoring equipment, monitoring locations, calibration techniques and schedules, and reporting format, procedures and schedules. Within 60 days of receipt of the plan, the SJVUAPCD will advise SCC and the CEC of the acceptability of the plan.

AQ-21 All continuous emissions monitoring systems shall be calibrated and operated according to EPA guidelines as specified in Code of Federal Regulations (CFR) Title 40, Part 60, Appendix B.

Verification: The continuous monitoring plan submitted by Sycamore Cogeneration Company under condition AQ-20 shall include specifications that all continuous emissions monitoring systems shall be calibrated and operated according to EPA guidelines specified in CFR Title 40, Part 60, Appendix B.

AQ-22 Ambient air monitors for NO_x and CO shall be installed and operational, upon start-up of the Sycamore Project cogeneration facility, at three District-approved locations until such time as both the SJVUAPCD and the CEC conclude that the monitors are no longer necessary.

Verification: Sycamore Cogeneration Company shall submit an ambient monitoring plan to the SJVUAPCD, CARB and CEC 180 days before ambient monitoring is scheduled to begin. The SJVUAPCD, CARB and CEC will approve or disapprove the plan within 90 days of its receipt. If Sycamore Cogeneration Company plans to meet this requirement with ongoing monitoring for the Kern River Cogeneration Project facility, Sycamore Cogeneration Company shall request concurrence from the SJVUAPCD 30 days before participation is to begin. All ambient monitoring reports will be in a form acceptable to the CARB.

AQ-23 All ambient monitors shall be calibrated and operated according to EPA guidelines as specified in CFR Title 40, Part 58, Appendix B for the life of their operation by SCC.

Verification: The ambient monitoring plan submitted by Sycamore Cogeneration Company under Condition AQ-22 shall include specifications that all ambient air monitoring systems shall be calibrated and operated as specified in CFR Title 40, Part 58, Appendix B.

AQ-24 Quarterly continuous and ambient monitoring reports shall be submitted to SJVUAPCD and CEC, as required by EPA regulations as specified in CFR Title 40, Part 58, Appendix B and Part 60 Appendix B for the operating life of the monitoring stations by SCC.

Verification: Reports shall be submitted on a quarterly basis per the above requirement.

AQ-25 Audits of all monitors shall be conducted by an independent laboratory in accordance with EPA guidelines, witnessed by the District, and reports shall be submitted to the District within 30 days of such audit for the operating life of the monitoring stations by SCC.

Verification: The audits for all continuous monitors and ambient air monitors will be funded by Sycamore Cogeneration Company and performed by an independent laboratory in accordance with EPA monitoring guidelines. The SJVUAPCD, CARB, and CEC staff shall be allowed to witness the audit testing. The audit reports shall be submitted to the SJVUAPCD within 30 days of each audit.

AQ-26 Sycamore Cogeneration Company shall make available to the District upon request, a report of fuel purchased.

Verification: Sycamore Cogeneration Company shall make available upon request, the fuel report, including but not limited to content, quantity and Btu content (LHV) of the fuel.

AQ-27 Prior to installation, Sycamore Cogeneration Company shall provide to the District details of design as it relates to air contaminant generation, emission, or control potential of the following: CTG combustion systems; and NO_x control water injection system.

Verification: Sycamore Cogeneration Company shall provide the above information to the SJVUAPCD and CEC 60 days before installation of the equipment identified in Condition AQ-27.

AQ-28 Of the four (4) CTGs at the Sycamore Cogeneration Facility and the four (4) CTGs at the Kern River Cogeneration Facility, five (5) of the CTGs shall be operational with DLN combustors by August 18, 1998 and all eight (8) CTGs must be operational with DLN combustors by August 18, 2000.

Verification:

The Sycamore Cogeneration Company shall submit to SJVUAPCD and the CEC evidence that the DLN installations are operational and are in compliance with the conditions stated in this document by the dates stated on or before September 18, 1998 and September 18, 2000.

AQ-29 Before commercial operation commences, Sycamore Cogeneration Company shall arrange with the SJVUAPCD to have 1,047 lbm/day of actual historical emission-based hydrocarbon emission reduction credits withdrawn from the Texaco Producing Inc. hydrocarbon emission reduction credit bank.

Verification: Sycamore Cogeneration Company shall forward copies of all correspondence between Sycamore Cogeneration Company and SJVUAPCD dealing with the subject matter of this Condition to the CEC. Sycamore Cogeneration Company shall provide to the CEC a demonstration that these banked credits were established by previous actual, verifiable, and enforceable emission reductions. Sycamore Cogeneration Company shall also forward to the CEC a copy of the adjusted Texaco Producing, Inc. hydrocarbon emission reduction credit banking certificate reflecting the changes required in this Condition.

AQ-30 Each CTG shall have a maximum heat input rate of 825 MMBtu/hr on an LHV basis. Firing rate limit can be increased upon SJVUAPCD-witnessed emission sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel consumption rates.

Verification: See verification for Condition AQ-8.

-31 SCC shall request KRCC to perform source testing of the Kern River facility during the winter of 1986-1987. Results of this test will be utilized by the SJVUAPCD in setting appropriate revised sampling limits in Condition AQ-19.

Verification: SCC shall request the results of the Kern River source tests from KRCC within 30 days of completion of the tests, and within another 15 days submit the source test results to the SJVUAPCD and CEC.

AQ-32 SCC shall investigate cyclonic flow stack emission turbulence with the purpose of providing suitable conditions for emission mass flow measurements, in consultation with KRCC. SCC shall submit their findings and make recommendations for a method to ensure accurate emission mass flow measurements for the Sycamore project to the SJVUAPCD and CEC.

Verification: Within 90 days of certification of the Sycamore project by the CEC, SCC shall submit a report on the cyclonic flow stack emission turbulence to the SJVUAPCD, docket the report with the CEC, and serve it on all parties. This report shall discuss the causes of the emission turbulence, the implications of emission turbulence on air emissions source testing, and recommendations for a method to ensure accurate emission mass flow measurements for the Sycamore Project.

AQ-33 Within 21 days of filing of the report required by Condition AQ-32, the CEC staff, the SJVUAPCD, the Air Resources Board, and any other interested party shall docket with the CEC and serve on all parties to the proceeding their comments on the report.

AQ-34 Within 21 days of service of the comments in Condition AQ-33, the Compliance Committee shall either (1) place a recommendation for Commission approval of SCC's proposals on the consent calendar of the next business meeting; or (2) schedule hearings on this matter, following which the Committee shall make a recommendation for Commission action if appropriate. In either event, the Commission's approval shall constitute an amendment to this Decision, and until such approval is given, construction on the stacks shall not begin.

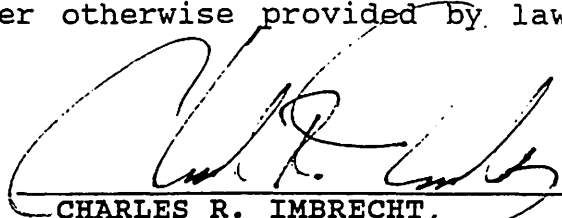
ADDITIONAL CONDITIONS OF CERTIFICATION

As a Condition of Certification for the Project, Sycamore and Texaco Producing Inc. have agreed that Sycamore and Texaco shall not bank nor use in calculating the net accumulated emissions for the remainder of the (Texaco) stationary source, any reduction, on either a permitted or actual basis, from any steam generators which have been shut down pursuant to operating conditions (d) and (e) of the final DOC dated July 14, 1986 (docketed with the CEC on July 15, 1986; Exhibit 42). Sycamore and Texaco and the ARB, in consultation with and with the concurrence of the SJVUAPCD agree that, as further Conditions of Certification, these Conditions shall be implemented as follows:

- A. Texaco Producing, Inc. (Texaco) shall submit to the SJVUAPCD a certificate of dedication for the emissions reductions realized from the shut down of the sixty-eight steam generators specified in operating conditions (d) and (e) of the final DOC dated July 14, 1986 which exceed the actual emissions reductions from the shut downs, as calculated pursuant to the methodology used by the ARB in its review of Applicant's AFC amendments dated April 3, 1986 and docketed in this proceeding May 7, 1986. Texaco shall be responsible for submitting any and all data and information required by the SJVUAPCD to validate the dedication.
- B. The dedication certificate shall include written conditions of use which state that the excess emission reduction credits which reflect the difference between calculating the emission reductions achieved using permitted emissions and calculating the reductions using actual emissions, are, for the life of the project, dedicated to the project and/or the sixty-eight steam generators specified in operating conditions (d) and (e) of the final DOC. Appropriate modifications shall be included on the permits for the sixty-eight affected steam generators to ensure that the ERCs are surplus, permanent, quantifiable, and enforceable by the District.
- C. Texaco shall not take any action to invalidate or otherwise inactivate the Certificate of Dedication as conditioned so long as the Project retains a valid permit to operate. When the Project is no longer in

possession of a valid permit to operate, the Certificate of Dedication shall be deemed inoperative and the Emission Reduction Credits, if not used for resuming operation of the steam generators shall be available for other uses in any manner otherwise provided by law, rule, or regulation.

Date: December 14, 1994



CHARLES R. IMBRECHT,
Chairman