



South Coast Air Quality Management District

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May 29, 2008

SENT VIA E-MAIL & U.S. MAIL

Mr. Chuck Casey
Facility Manager
City of Riverside Public Utilities Department
5901 Payton Avenue
Riverside, CA 92504

DOCKET 08-SPPE-1
DATE MAY 29 2008
RECD. AUG 06 2008

Subject: Permit Applications for the Riverside Energy Resource Center (ID# 139796)

RE: Request for Clarifying Information

Dear Mr. Casey:

Please refer to the following applications for Permits to Construct, in which the City of Riverside is proposing expand the Riverside Energy Resource Center with the proposed installation of two natural gas-fired simple cycle LM6000 PC SPRINT™ turbines, associated air pollution control equipment and a diesel-fired black start internal combustion engine.

Application Summary

Equipment	Application Tracking No.
LM6000 PC SPRINT™ Gas Turbine, 48 MW	481647
LM6000 PC SPRINT™ Gas Turbine, 48 MW	481649
SCR/CO Catalyst	481650
SCR/CO Catalyst	481651
TV/RECLAIM Amendment	482512
Black Start Diesel ICE	482515

The South Coast Air Quality Management District (AQMD) is currently in the process of reviewing the application package submitted by the City of Riverside's consultant, SCEC. Additional clarifying information has been identified to supplement or replace the information that had been provided in the application package. Each area is identified under the appropriate sections that follow.

Statewide Compliance

Rule 1303(b)(5)(B) requires that Major Polluting Facilities “*demonstrate prior to the issuance of a Permit to Construct, that all major stationary sources, as defined in the jurisdiction where the facilities are located, that are owned or operated by such person (or by any entity controlling, controlled by, or under common control with such person) in the State of California are subject to emission limitations and are in compliance or on a schedule for compliance with all applicable emission limitations and standards under the Clean Air Act*”.

1. Please provide written certification that all such facilities owned by the City of Riverside meet the requirements of this section.

Priority Reserve

On August 3, 2007, the Governing Board of the South Coast Air Quality Management District (AQMD) approved amendments to Rule 1309.1 – Priority Reserve. As a result of the amendments, the Riverside Energy Resource Center is required to meet additional criteria prior to the AQMD granting you access to the Priority Reserve. The application package that was submitted did not address the following sections of the rule.

2. Rule 1309.1(c)(1) requires all that sources under common ownership within the District be in compliance with all applicable District rules, variances, orders, and settlement agreements. Please provide verification that the City of Riverside meets the requirements of this section.
3. Rule 1309.1(c)(3) requires the applicant to conduct a due diligence effort approved by the Executive Officer to secure available Emission Reduction Credits (ERCs) for requested priority reserve pollutants. Such efforts shall include securing available ERCs including those available through state emission banks or creating ERCs through SIP approved credit generation programs as available. Please provide verification that the City of Riverside has conducted a due diligence search for offsets, which should include a list of all the companies contacted, name of contact, dates, pollutant, amount, ERC number, viability of ERC generation and any other pertinent information to demonstrate due diligence.
4. Rule 1309.1(c)(5)(B) requires an In-District Electric Generating Facility (EGF) to demonstrate to the satisfaction of the Executive Officer that renewable/alternative energy in lieu of natural gas fired EGF is not a viable option for the power to be generated at that site. To ensure compliance with the requirements of this section, a specific analysis is required for all types of renewable/alternative energy technology, specifically solar, wind and fuel cell technology. The analysis should be conducted to see if renewable/alternative technology can be used to generate

approximately 10% of the proposed project's generating capacity. Please conduct an analysis to see if 9.6 MW can be generated on site using solar, wind and fuel cell technology or any combination thereof.

Black Start Diesel ICE

The Cummins model QTS30-G5 1175 bhp diesel fired engine proposed for this project is subject to Rule 1303(a)(1) – Best Available Control Technology (BACT). Since the engine will be installed along with the addition of the two gas turbine units, which will classify the facility as a major source for NO_x, Lowest Achievable Emission Rate (LAER) requirements will be applicable. An excerpt taken from the BACT Guidelines, Chapter 2 – Applicability Determination states *“if a threshold for any one criteria pollutant is equaled or exceeded, the facility is a major polluting facility, and will be subject to LAER for all pollutants subject to NSR”*.¹

5. LAER for the engine has been identified to be a diesel particulate filter (DPF). Please provide the specifications for the DPF and associated monitoring equipment to comply with Rule 1303(a)(1).
6. The facility has the option of reporting RECLAIM emissions for the engine with an emission factor and either fuel meter or time meter readings. Please identify what parameter will be monitored to report RECLAIM emissions for this NO_x process unit.

SO_x Emissions

AQMD policy for permitting power plants has been to use a 0.25 gr-H₂S/100 scf content for pipeline quality natural gas. This is based on information that has been provided by the Southern California Gas Company on the specifications of natural gas shipped to their customers. The SO_x emission factor used for the emission determinations in the application package is a default factor of 0.6 lb/MMscf, which equates to 0.00057 lb/MMBtu at an HHV of 1050 Btu/scf.

7. Please adjust the SO_x emission factor for natural gas with a concentration of 0.25 gr-H₂S/100 scf at an HHV of 1050 Btu/scf so the projected emissions are in line with AQMD permitting policy. Please take into account the impact on other rule requirements.

¹Please refer to the AQMD website at <http://www.aqmd.gov/bact/BACTGuidelines.htm> for a more detailed discussion on LAER/BACT.

VOC Emissions

The case data² provided by GE for operation at various loads and ambient conditions shows a maximum uncontrolled VOC concentration of 5.0 ppm for case 100.

8. Please use 5.0 ppm as the uncontrolled VOC concentration in the emission estimates.

30 Day-Average Emissions

Rule 1304(d)(2)(B) states that *“any modified facility that has a post-modification potential to emit equal to or more than the amounts in Table A shall be required to obtain offsets for the corresponding emissions increase, or the amount in excess of Table A figures if the pre-modification potential to emit was less than the amounts in Table A in accordance with Rule 1303(b)(2)”*. Emission calculations are based on Rule 1306(b) which states *“emission increases for new sources and the new total emissions from modified sources shall be calculated, as approved by the Executive Officer or designee, (1) using calendar monthly emissions divided by 30 for determination of the required amount of offsets”*.

9. The post-modification PM10 emissions will exceed the exemption threshold of Rule 1304 Table A. Therefore, per Rule 1306(b) the amount of offsets will be based on calendar monthly emissions. Conditions for maximum allowable emissions and a monthly fuel usage limit will be placed on the permit to ensure compliance. Therefore, please provide the number of hours the units will operate per month, which should include start-ups, shutdowns and the proposed 10 hours for testing and maintenance.

Toxic Air Contaminant (TAC) Emissions

The application package submitted includes calculations of TAC emissions used to determine the project's compliance with Rule 1401 – New Source Review of Toxic Air Contaminants. An assumption of 85% toxic reduction efficiency across the CO catalyst was made when determining these TAC emissions. Although some reduction may occur across the CO catalyst, the actual reductions may be lower and will vary depending on the species of pollutant.

10. Please provide source test data or evidence to justify the reduction efficiencies assumed in the application package. In the absence of data, please assume zero efficiency and amend the TAC calculations and health risk assessment for this project.

² GE specification sheet entitled “Riverside Emissions Summary R2” dated 11/28/2007

Start-up and Shutdown

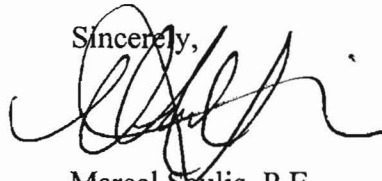
Per the Environmental Protection Agency (EPA), the Environmental Appeals Board has established that BACT requirements apply at all times during the operation of a facility, which include periods of start-up and shutdown. The EPA has commented multiple times on proposed AQMD permits regarding this issue and has usually requested that AQMD include an analysis on how start-up and shutdown conditions meet BACT. These conditions generally include a period of time that allows turbines to operate at higher than base load concentration levels along with a mass emissions rate.

11. In order to justify the length of time and the amount of mass emission rates proposed, please provide CEMS data, from devices D1 and D5, for start-ups and shutdown. Please provide the data in Excel format, which should include NO_x, CO and NH₃ concentrations (ppm) and rates (lb/hr), fuel flow, O₂, date and time, etc. Please provide the data in electronic format.
12. The emission estimates for PM₁₀ provided by SCEC during start-up are lower than base load and shutdown emission estimates. These estimates were based on lower fuel input during the initial minutes of start-up and subsequently during the entire hour; however, to account for worst-case operation during the initial minutes of start-up, please take no credit for lower fuel use during start-up and assume the emissions will be equivalent to base load operation.
13. Please re-calculate the start-up and shut-down emissions for VOC assuming maximum heat input during the hour with a "portion" of that hour using the uncontrolled emission factor discussed under item number 8. The "portion" of the hour of uncontrolled operation should be when the CO catalyst is not effective.

Please provide the information for items 1 to 4 by **July 8, 2008**, and for items 5 to 13 by **June 17, 2008**, so AQMD may continue with the review and finalization of the engineering analysis.

If you have any questions regarding the subject applications, please call or email me.

Sincerely,

A handwritten signature in black ink, appearing to read 'MS', written over a horizontal line.

Marcel Saulis, P.E.
Air Quality Engineer II
msaulis@aqmd.gov
(909) 396-3093

MS

cc: Robert B. Gill, Principal Electrical Engineer, Riverside Public Utilities
Karl Lany, Vice President, SCEC
Felicia Miller, Project Manager, CEC ✓