

RUSSELL CITY ENERGY COMPANY, LLC

717 Texas Avenue
Suite 1000
Houston, TX 77002

June 14, 2021

Ms. Xuna Cai
Senior Air Quality Engineer
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105

Re: Simple Cycle Operation
Russell City Energy Center Facility ID# B8136

Dear Ms. Cai:

On May 27, 2021, the Russell City Energy Center (RCEC) experienced a mechanical malfunction of its steam turbine generator. The steam turbine restoration or replacement will take upwards of 12 months to engineer and complete.

Accordingly, prior to completion of the restoration and replacement of the steam turbine, Russell City Energy Company, LLC (Russell City) is seeking authorization to operate RCEC in simple-cycle mode. Operation in simple-cycle mode will require physical alterations to the steam system, which is not a permitted emissions source, specifically, installation of a blanking plate on top of the condenser and pressure relief devices. Simple-cycle operation will provide approximately 300 to 350 MW of RCEC's design capacity of 600 MW.

The proposed alteration will not increase emissions. Operating in simple cycle mode will, however, affect the efficiency of the facility. Although the combustion turbines, S-1 and S-3, will be operated in the same manner as during combined-cycle mode, the steam turbine will not be generating additional MW. This will cause the heat rate (BTU/KwHr), an efficiency indicator, to increase, which will cause RCEC to be dispatched less frequently than it would in combined-cycle mode.

As part of the "Voluntary Greenhouse Gas BACT Requirement" appearing at Parts 50-54 of Condition #26117 (which were added to Russell City's PSD permit as first-of-their-kind conditions limiting emissions of greenhouse gases under a federal PSD permit), Part 53 requires the facility to maintain the S-1 and S-3 gas turbines such that the heat rate of each turbine does not exceed 7,730 BTU/KwHr. Because the denominator of the heat rate calculation will be reduced as a result of not generating additional power within the steam turbine, Russell City will not be able to comply with this condition during simple-cycle operations. Accordingly, RCEC is requesting a minor permit revision modification to Part 53 of Condition #26117 to clarify that it does not apply when the combustion turbines are operated in simple-cycle mode while the steam turbine is being replaced, as follows:

The owner/operator shall maintain the S-1 & S-3 Gas Turbines such that the heat rate of each turbine does not exceed 7,730 Btu/kW hr, **except when the S-1 and S-3 Gas Turbines are operating in simple-cycle mode prior to completion of the replacement and recommissioning of the steam turbine.**

To be sure that RCEC is available for peak demand anticipated to occur during the summer of 2021, Russell City is requesting that this alteration be processed pursuant to the Accelerated Permitting Program and that the minor permit revision of Part 53 of Condition #26117 of its Major Facility Review Permit be completed no later than July 15. The California Energy Commission is also conducting its analysis of simple-cycle operation, which will include its evaluation of environmental impacts associated with the change pursuant to the California Environmental Quality Act, and that analysis is expected to be complete by this date.

Please find the attached P101B form and Stationary Source Form. Please let me know what the application fee will be and if any additional forms or information is necessary. If you have any questions, please contact me at 925-570-0849.

Sincerely,



Barbara McBride
Director, Strategic Origination and Development
Calpine Corporation

Cc: Pam Leong, BAAQMD
Dennis Jang, BAAQMD
Sanjeev Kamboj, BAAQMD