

DOCKETED

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State of California
State Energy Resources Conservation and
Development Commission

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**APPLICATION FOR SMALL POWER PLANT
EXEMPTION FOR THE:**

***SEQUOIA BACKUP GENERATING
FACILITY***

Docket No. 19-SPPE-03

ENERGY COMMISSION STAFF'S FEBRUARY STATUS REPORT

On December 23, 2020, the Committee appointed to oversee this proceeding issued an *Order After Committee Conference* ordering the parties to submit monthly status reports. On January 25 and 26, 2021, the project applicant filed a revised project description and supplemental information modifying the project to use Tier 4-compliant diesel engines instead of the previously proposed Tier 2-compliant engines. On February 5, 2021, the Committee issued a *Second Revised Scheduling Order and Related Orders* directing Energy Commission staff to file its revised testimony by the week of February 22, 2021. The order also directed the parties to “address the need for and scope of any evidentiary hearing” in this staff report.

On January 18, 2021, intervener Robert Sarvey filed a status report asserting that, among other things, additional modeling will need to be performed to evaluate the potential impact of the project’s switch to Tier 4-compliant engines. At the January 25, 2021, business meeting update of the Sequoia proceeding staff indicated it would provide responses to Mr. Sarvey’s assertions. Those responses are included here as an attachment. Staff will be providing its thorough evaluation of the project change in an underline/strikeout version of the Initial Study by the deadline requested in the recent Committee order.

This additional information can and should be accepted by the Committee into the record without an evidentiary hearing. The additional analysis is minimal, does not identify any potential for significant, adverse impact, and covers issues and analyses

that have already been thoroughly litigated and addressed. Staff will be providing declarations with the additional testimony and there is no legal requirement for the Committee to hold an evidentiary hearing to accept this information into the record. Any questions concerning the new information can be accommodated, if warranted, via written question and answer as anticipated in the revised scheduling order. For these reasons, an evidentiary hearing would be unnecessary.

DATED: February 18, 2021

Respectfully submitted,

APPROVED BY:

Shawn Pittard, Deputy Director
Siting, Transmission, and Environmental Protection Division

ATTACHMENT

Staff response to comments made by intervenor Robert Sarvey about impacts from the project's change to Tier 4 engines

In his Sequoia Status Report dated January 18, 2021 (TN: 236344), Robert Sarvey identified several areas in which he believed the requirement to use diesel backup generators that meet the Tier 4 emissions standards necessitated further environmental analysis. Mr. Sarvey stated that:

- The applicant will have to redesign the project.
- A revised project description will be needed.
- The air quality modeling will have to be performed.
- The project will now use ammonia and will require a transportation and storage assessment.
- The use of ammonia will increase the potential for secondary particulate from the project which needs to be assessed.
- The use of ammonia will require an update to the health risk assessment.
- Depending on the type of ammonia the applicant proposes to utilize, additional risk may occur and need to be assessed.

Redesigned Project

On January 25, 2021, the applicant filed SBGF Revised Project Description and AQ Emissions - Tier 4 (TN: 236429), which included the redesigned project information and updated project description and equipment modifications. On January 26, 2021, the applicant filed C1 Revised AQ Emission Tables and Ammonia Calculations (TN: 236451) as a result of using the cleaner Tier 4 compliant generators.

Revised Project Description

As noted above, SBGF Revised Project Description and AQ Emissions - Tier 4 (TN: 236429) includes the revised project description and highlights all changes associated with switching from Tier 2 to Tier 4 emergency diesel engines.

Revised Air Quality Modeling

The change from Tier 2 to Tier 4 emergency diesel-fired engines does not necessitate the need to revise the air quality modeling. The generators would be the same make and model as previously proposed but would include the addition of a selective catalytic reduction (SCR) system.

To meet the Tier 4 emission standards, urea is used to enable the SCR system to achieve NO_x emission reductions. However, the engine exhaust needs to reach a high enough temperature before the urea can be injected into the system and the emission reductions can be achieved. This usually takes around 30 minutes, but is dependent on the engine load. At lower loads, it would take longer for the SCR to become effective, and at higher loads the SCR may become effective sooner.

As described in the Committee's Proposed Decision, the monthly generation tests would require the engines to operate at 10 percent load for 30-minutes. (p. 5.3-11.) Therefore, the 30-minute monthly tests would likely conclude before urea could be injected into the system and the NO_x emission reductions could be achieved. Additionally, there is one 4-hour test performed annually. To model compliance with the 1-hour NO₂ standard, it would be reasonable to assume Tier 2 emission rates for the first 30 minutes (before urea can be injected and NO_x reductions can occur) and then assume Tier 4 emission rates for the remaining 30 minutes. However, assuming Tier 2 emission rates for the full hour, which is what was done in the Committee's Proposed Decision for the Sequoia Data Center, results in a more conservative analysis and further protects public health. Therefore, additional modeling is not needed.

Staff has also considered the slight change in dimensions of the generator enclosures by modeling the building downwash effects to see if this would change the worst-case modeling impacts. The change in dimensions of the generator enclosures did not affect the building downwash effects for 50 generators and resulted in negligible changes to four of the generators. Additional modeling showed that the conclusions regarding the project impacts would not change due to the change in the dimensions of the generator enclosures.

Ammonia Transportation and Storage

The change from Tier 2 to Tier 4 emergency diesel-fired engines does not necessitate the need for a transportation and storage assessment for ammonia. The Tier 4 diesel generators would use SCR that injects a liquid-reductant through a special catalyst into the exhaust stream of the diesel engine. The reductant source would be called a diesel exhaust fluid (DEF). The DEF is a solution comprised of 67.5 percent water and 32.5 percent automotive grade urea and would be a non-hazardous material as noted in C1 Supplemental Information – Urea Solution – SBGF (TN: 236433). The urea solution has a negligible amount of ammonia within it per the safety data sheet, and its use would not change the conclusion in the proposed decision that the project would not result in any significant, adverse impacts to the environment. No further analysis is needed.

Secondary particulate matter impacts from ammonia

The project's gaseous emissions of NO_x, SO₂, POC, and ammonia are precursor pollutants that can contribute to the formation of secondary pollutants, ozone, PM₁₀, and PM_{2.5}. The process of gas-to-particulate conversion is complex and depends on many factors, including local humidity and the presence of other compounds. Ammonia is a particulate precursor but not a criteria pollutant. Reactive with sulfur and nitrogen compounds, ammonia is common in the atmosphere primarily from natural sources or as a byproduct of tailpipe controls on motor vehicles. Currently, there are no agency-recommended models or procedures for estimating secondary particulate nitrate or sulfate formation from individual sources such as the Sequoia Backup Generating Facility.

Because the primary emissions of particulate matter from this project are below the Bay Area Air Quality Management District's (BAAQMD) CEQA significance threshold and do not require additional mitigation or trigger the need for offsets, the secondary impacts from ammonia are also considered to be less than significant and would not require additional mitigation or offsets. Therefore, no further analysis is needed.

Update to Health Risk Assessment (HRA)

BAAQMD Regulation 2 Rule 5¹ has trigger levels for Toxic Air Contaminants (TACs). The emission threshold level for each TAC is identified in Table 2-5-1 Toxic Air Contaminant Trigger Levels of the rule. If the project's emissions are below these thresholds for a specific TAC, the resulting health risks are not expected to cause, or contribute significantly to, adverse health effects.

For ammonia, the trigger levels are 7.1 lb/hr for acute and 7,700 lb/year for chronic. As noted in SBGF Revised Project Description and AQ Emissions - Tier 4 (TN: 236429), the Sequoia Backup Generating Facility estimated hourly and annual ammonia emissions are 0.21 lb/hr and 567 lb/yr, respectively, which are below the acute and chronic significance thresholds for ammonia. Therefore, the ammonia emissions of the project are not expected to cause, or contribute significantly to, adverse health effects.

Potential Additional Risk Depending on Type of Ammonia Used

The project applicant docketed C1 Supplemental Information – Urea Solution - SBGF (TN: 236433) which demonstrates that the applicant would use a urea solution for the SCR process. The SCR process would not use any ammonia as the reductant source for the Tier 4 engines. Therefore, there is no additional risk to the types of ammonia used.

1 Available online at <https://www.baaqmd.gov/rules-and-compliance/rules/reg-2-rule-5-new-source-review-of-toxic-air-contaminants>