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| **Docket Number:** | 19-SPPE-01 |
| **Project Title:** | Laurelwood Data Center (MECP I Santa Clara I, LLC) |
| **TN #:** | 231873 |
| **Document Title:** | CEC Staff's Comments on LDC Committee Proposed Decision |
| **Description:** | CEC staff comments on the Committee Proposed Decision for the Laurelwood Data Center project |
| **Filer:** | Lisa Worrall |
| **Organization:** | California Energy Commission |
| **Submitter Role:** | Commission Staff |
| **Submission Date:** | 1/31/2020 1:25:09 PM |
| **Docketed Date:** | 1/31/2020 |

State Of California — The Resources Agency of California

# Memorandum

**Date:** January 31, 2020

**To:** Karen Douglas, Commissioner and Presiding Member
Janea A. Scott, Vice Chair and Associate Member

**From:** California Energy Commission – **Lisa Worrall**
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**Subject:** **LAURELWOOD DATA CENTER (19-SPPE-01) STAFF'S COMMENTS ON THE COMMITTEE PROPOSED DECISION**

Staff has reviewed the Committee Proposed Decision for the Laurelwood Data Center (LDC) and submits the following comments. Should the Committee have questions about any of staff's comments, staff can be available during the February 4, 2020 Business Meeting.

1. On page 5 in the Committee Proposed Decision, the first paragraph does not accurately describe the buildings and square footage. The Applicant submitted an updated project description on June 21, 2019 (Ex. 8), which has not been captured in this first paragraph. The project includes two multi-story buildings, not two four-story buildings and the size of the buildings also changed. Other changes proposed by staff would make the supporting building amenities consistent with the updated June 21, 2019 project description. The first two sentences should read:

   The Data Center consists of two, ~~four~~**multi**-story buildings. Building 1 is an approximately ~~279,744~~**250,560**-square-foot structure with ~~a common building that connects with Building 2~~**supporting amenities including elevators, restrooms, lobby, staging, and storage**. Building 2 is an approximately ~~348,800~~**283,392**-square-foot structure with ~~two connected office/common spaces~~**supporting amenities including elevators, restrooms, lobby, staging, and storage**. Both buildings include loading docks, generator yards, bioswales, paved surface parking lots, and landscaping.[16]

   …

   [16] Ex. ~~2~~**8**, p. ~~1-1~~**2-1**.

2. On page 5, the Committee Proposed Decision states, "The buildings will create a combined electrical load of 99 MW." Staff believes that 99 MW reflects a maximum load, reflecting worst-case climatological and IT-load conditions that the facility may never obtain. The Committee Proposed Decision acknowledges elsewhere that 99 MW is in fact a maximum building load (see pgs. 12-14). Accordingly, staff proposes that this sentence be revised as follows:

   The buildings will create a combined electrical load of **up to** 99 MW.

3. On page 6 in the Committee Proposed Decision, the source line for Table 1 is incorrect. The source line should read § 2.6 instead of p. 2-6.

   (Source: Ex. 8, ~~p. 2-6~~**§ 2.6**, Table 2-4. [Note: standby generator as used in the source document refers to the Backup Generators.])

4. On page 13 of the Committee Proposed Decision, regarding Condition of Exemption PD-1, staff understands the intent of the proposed PD-1 is to limit the electricity demand at LDC to the configuration proposed and being exempted by this decision. However, the condition of exemption as written may go beyond that purpose as it appears to require design oversight by the Energy Commission. Staff suggests the following edits to PD-1 to make the focus on electricity use rather than equipment types and specifications. Staff has also proposed a verification to PD-1.

   **Condition of Exemption PD-1. Notice of Events Affecting Electrical Demand of the Facility.**

   The granting of the Small Power Plant Exemption for the Laurelwood Data Center project is specifically conditioned on the existing configuration of the Laurelwood Data Center and that its demand for electricity does not exceed 100 megawatts. The Project Owner may not alter the ~~configuration or equipment of the~~ Laurelwood Data Center ~~if the~~ demand for electricity ~~would then increase or if generation would exceed~~ **to greater than** 99 megawatts. If the Project Owner desires to ~~alter the configuration or equipment of the Laurelwood Data Center that may result in an~~ increase ~~in~~ electrical demand, any such alteration, change, or modification shall be subject to the requirements set forth in the regulations of the California Energy Commission relating to changes in project design, operation, or performance and amendments to Commission Decisions, as they may exist at that time.

   **Verification. The Project Owner shall notify the Executive Director of the California Energy Commission of any proposed increase of demand of electricity used by the Laurelwood Data Center that would cause total facility demand to exceed 99 megawatts at least ninety (90) days prior to the change being effective.**

5. On page 13 of the Committee Proposed Decision, regarding Condition of Exemption PD-2, staff understands the intent of the proposed PD-2 is to limit the electricity supplied from the Backup Generators for use at LDC per the configuration proposed and being exempted by this decision. However, the condition of exemption is imprecise when referring to the electrical distribution system. Staff recommends that the text include the word *offsite* to clarify the phrase *electrical distribution system* since LDC, as proposed, has an internal electrical distribution system. Staff also recommends a minor modification to the verification for PD-2 to clarify that PD-2 and its verification are not intended to prescribe or limit modifications during the LDC electrical system design and maintenance phases of the project. For example, LDC

might revise their internal electrical distribution system to accommodate merging several server bays to meet a data customer's needs. This change would not affect total IT and building demand, but would be a "proposed change to the distribution of power from the backup generators" that might inadvertently fall under PD-2 as published.

> **Condition of Exemption PD-2. Notice of Events Affecting Off-Site Distribution of Energy Generated by the Facility.**
>
> The granting of the Small Power Plant Exemption for the Laurelwood Data Center project is specifically conditioned on the power generated being used exclusively by the Laurelwood Data Center. At no time shall the owner of the Laurelwood Data Center allow the power to be generated to be used for any other facility, property, or use, including, but not limited to, delivery to ~~the~~ **an offsite** electric distribution system without the express written approval of the California Energy Commission.
>
> Verification. The Project Owner shall notify the Executive Director of the California Energy Commission of any proposed change to the distribution of power **offsite** from the backup generators at the Laurelwood Data Center at least ninety (90) days prior to the change being effective.

6. On page 17 of the Committee Proposed Decision a list of criteria pollutants regulated by the United States Environmental Protection Agency and Air Resources Board is provided. However, five of the criteria pollutants (i.e. lead, sulfate, visibility reducing particles, hydrogen sulfide, and vinyl chloride) do not show up in **Table 2**. This is consistent with the text on page 5.3-1 and Table 5.3-1 on page 5.3-2 of the Initial Study/Mitigated Negative Declaration (IS/MND). Staff does not recommend that the five pollutants be added to the table; for this proposed technology, fuel and location, the standards of the five air pollutants are not needed in **Table 2** and are not analyzed for the project. Staff proposes the following edits to the last sentence on page 17.

   > **Table 2** shows the ambient air quality standards for the~~se~~ criteria pollutants **relevant to the project**.

7. On page 19 of the Committee Proposed Decision, the second paragraph should be modified to show that short-term and long-term impacts were analyzed differently. Staff modeled the impact of testing and maintenance emissions using the 21 hours per generator per year limit for annual standards since it is an annual limit. The short-term (i.e. 1-hour, 8-hour, and 24-hour) standards were analyzed according to the forms of the standards. Except for 1-hour nitrogen dioxide ($NO_2$) standards and 24-hour particulate matter (PM) standards, staff did a worst-case modeling analysis assuming all 56 generators could operate at 100 percent load simultaneously and continuously for testing and maintenance purposes for every hour of the five modeling years. For 1-hour $NO_2$ standards, staff did a refined modeling analysis by assuming only one generator could operate at 100 percent load at a time for testing

and maintenance purposes, which is consistent with the Applicant's proposal. For 24-hour PM standards, staff also did a refined modeling analysis by assuming all generators could operate at 100 percent load simultaneously for a maximum of 4 hours per day for testing and maintenance purposes, which is consistent with Applicant's proposal. Pages 5.3-18 and 5.3-19 of the IS/MND include a more detailed description of how the modeling was done. Staff recommends the following paragraph be modified as indicated:

> Second, staff modeled the impact of testing and maintenance emissions on ambient air quality ~~using the Applicant's revised limit of 21 hours per generator per year~~[93] and compared the resulting concentrations to the ambient air quality standards, as summarized in **Table 4**.[94] **The short-term (i.e. 1-hour, 8-hour, and 24-hour) and long-term (annual) impacts of the project were all analyzed according to the averaging period of each standard and the Applicant's proposed testing and maintenance schedule for each hour, each day, and each year. The annual impacts were analyzed using the Applicant's revised limit of 21 hours per generator per year for testing and maintenance purposes. Pages 5.3-18 and 5.3-19 of the IS/MND include a more detailed description of how the modeling was done for short-term and long-term impacts.**

8. On page 21 of the Committee Proposed Decision, staff recommends that the paragraph under "Emergency Operations" be modified. Staff presented a variety of reasons (Ex. 200, p. 5.3-25; 11/1/19 RT pp. 48:11 - 49:20) explaining how the analyses of emergency operation could involve speculation. In essence, the more particular we become about our analytical assumptions for emergency operations, the more likely we are to engage in speculation. Staff's modifications would ensure the presentation of the results are reflective of this context. Staff believes these modifications would be consistent with the treatment of Public Safety Power Shutoff (PSPS) outages within the Committee Proposed Decision (at pp. 25-26). Staff recommends the paragraph be modified as indicated.

> *Emergency Operations*
>
> Separate from the routine emissions of Project operation, the IS/PMND also considered the potential impacts related to emergency operation of the Backup Generators. Staff noted that US EPA and local air districts generally do not require air quality impact analysis of emissions that would be intermittent or triggered by an emergency.[99] **Staff stated that assessing the impacts of emergency operation of the standby generators could be speculative. [Ex. 200 at p. 5.3-25.] To this concern, staff disclosed that several speculative factors would need to be known in order to define the scope of any particular emergency operations, and the emissions profiles that would result, making a definitive air quality impact analysis speculative. [Ex. 200 at p. 5.3-33.] Specifically, staff testified that "...emergency operations only occur when the facility has a power**

**outage. And outages are infrequent, and irregular, and unplanned. The outage durations would be variable. Sometimes they would be short enough to avoid triggering emergency operations. How the generators response to the outage is also unpredictable…" [11/1/19 RT p. 49:8 - 49:14.]** However, given that the specific purpose of the Backup Generators is to run in the event of an interruption of the electrical supply, Staff stated that occasional emergency operations are foreseeable, and the emissions that could occur during an emergency operation can be reasonably estimated. **Although staff pointed to uncertainty in making its modeling assumptions, staff presented its analysis as a worst-case analysis for potential air quality impacts during emergency operations. [Ex. 200 at p. 5.3-29.]** Staff's analysis concluded that the average annual impact of emergency operations would be similar to the pollutant concentration results shown in **Table 4**.[100]

9. On page 27 of the Committee Proposed Decision, the first paragraph should be modified to show that the 21 hours per generator per year assumption was used for modeling of the annual impacts of the project. Staff modeled the impact of testing and maintenance emissions using the 21 hours per generator per year limit for annual standards since it is an annual limit. The short-term (i.e. 1-hour, 8-hour, and 24-hour) standards were analyzed according to the forms of the standards. Except for 1-hour $NO_2$ standards and 24-hour PM standards, staff did a worst-case modeling analysis assuming all 56 generators could operate at 100 percent load simultaneously and continuously for testing and maintenance purposes for every hour of the five modeling years. For 1-hour $NO_2$ standards, staff did a refined modeling analysis by assuming only one generator could operate at 100 percent load at a time for testing and maintenance purposes, which is consistent with the Applicant's proposal. For 24-hour PM standards, staff also did a refined modeling analysis by assuming all generators could operate at 100 percent load simultaneously for a maximum of 4 hours per day for testing and maintenance purposes, which is consistent with Applicant's proposal. Pages 5.3-18 and 5.3-19 of the IS/MND include a more detailed description of how the modeling was done.

   In addition, staff notes that only **Table 3** of the Committee Proposed Decision shows emissions of criteria pollutants with offsets compared with Bay Area Air Quality Management District (BAAQMD) Thresholds of Significance. **Table 4** of the Committee Proposed Decision shows modeled impacts during project testing and maintenance. Accordingly, the reference to **Table 4** should be deleted in the sentence where oxides of nitrogen (NOx) emissions and threshold of significance were discussed.

   Staff recommends the following modifications as indicated:

   As set forth above, Staff modeled **annual impacts of the project assuming** 21 hours per generator per year for testing and maintenance purposes and we have adopted Condition of Exemption PD-3 to limit the Project to 21 hours

per generator per year for testing and maintenance. The uncontested evidence is that actual testing will only require 12.3 hours per generator per year.[137] Even if we were to assume that the approximately 7.5 hour outage previously experienced by data centers is reasonably foreseeable and aggregate that outage with the actual number of testing hours, the analysis conducted sufficiently addresses the potential impacts from both the testing and maintenance operations and the reasonably foreseeable emergency operations of the Backup Generators. As shown in **Table~~s~~ 3** ~~and 4~~, the NOx emissions, as offset, do not exceed the threshold of significance of 10 tpy. We therefore find that the reasonably foreseeable emergency operations of the Backup generators will not cause a significant impact to air quality.

10. On pages 27-28 of the Committee Proposed Decision, it is unclear if the second sentence in the last paragraph on page 27 refers to emergency or routine operations. Staff recommends that the following paragraph be modified as indicated, or alternatively, that it be changed to "testing and maintenance".

> We therefore find that the IS/PMND adequately analyzed the emissions of the testing and maintenance of the Backup Generators. We further find that emission from the testing and **routine** operation of the Backup Generators would not be significant or exceed the thresholds established by BAAQMD.

11. On page 30 of the Committee Proposed Decision, under "Stationary Sources", staff recommends that the following paragraph be modified as indicated:

> Stationary Sources
>
> Regionally, the 2017 BAAQMD Guidelines include recommended thresholds for use in determining whether projects would have significant adverse environmental impacts under CEQA. For commercial/industrial land use development projects, BAAQMD has adopted a numeric threshold of 1,100 ~~million~~ metric tons of $CO_2e$ per year ($MTCO_2e/yr$) and a qualitative threshold of complying with a qualified greenhouse gas reduction strategy. For stationary-source projects, the numeric threshold is 10,000 $MTCO_2e/yr$.[154] Staff used this threshold in assessing the impact of the project's stationary source GHG emissions.

12. On pages 34-35 of the Committee Proposed Decision, the second sentence in the second paragraph under "Impacts Analysis" talks about Health Risk Assessment, not criteria pollutants and an air quality impact analysis. The sentence should be modified to discuss a Health Risk Assessment of the project's Toxic Air Containments. Also, AERMOD itself does not account for existing air quality, the background data does.

> It relied on AERMOD modeling~~,~~ **with HARP2 to determine cancer, chronic, and acute health risks of TACs from the project.**[188] ~~which is capable of~~

~~accounting for existing air quality including emissions from existing projects.~~[189]

13. On page 44 of the Committee Proposed Decision, the second paragraph quotes from CEQA Guidelines section 15124 in describing the contents of a project description of a negative declaration. Section 15124, by its terms and as interpreted in case law, only applies to project descriptions in Environmental Impact Reports. Staff instead suggests reliance on CEQA Guidelines section 15063(d) and proposes the following changes:

> To be adequate, **an initial study shall contain a description of the project, including the location of the project, and identify the environmental setting in which the project will occur** ~~the project description of a negative declaration must contain (1) the precise location and boundaries of the proposed project; (2) a statement of the objectives sought by the proposed project, including the underlying purpose; (3) a general description of the project's technical, economic, and environmental characteristics; and (4) a statement briefly describing the intended uses of the EIR.~~[246] The IS/MND contains a description of the Project with a map of the location of the project.
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> . . .
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> [246] Guidelines, § ~~15124~~**15063(d)**.

14. On page 5.9-2 in Appendix A from the Committee Proposed Decision, in the last sentence of the paragraph, under the subheading Airports, "above ground level (AGL)" should read "above mean sea level (AMSL)". This was a typing error in Staff's Errata (Ex. 202, p. 9).

> The Norman Y. Mineta San Jose International Airport, a public airport, is located within 2 miles of the proposed project and has two runways that exceed 3,200 feet in length (AirNav 2019).~~.~~ The Santa Clara County Airport Land Use Commission (SCCALUC 2016) plan shows that the project does not fall within an airport safety zone. The project's Federal Aviation Regulations (FAR) Part 77 (obstruction) surface is 212 feet above ~~ground~~ **mean sea** level (~~AGL~~**AMSL**), as identified in Figure 6 of the Comprehensive Land Use Plan for San Jose International Airport (SCCALUC 2016).

15. On page 5.17-1 in Appendix A to the Committee Proposed Decision, the last sentence in the paragraph preceding Regulatory Background, "above ground level" should read "above mean sea level". This was a typing error in Staff's Errata (Ex. 202, p. 18).

> Other nearby transportation infrastructure includes bus transit and the Norman Y. Mineta San Jose International Airport. The closest bus stops to the site are located on each side of Mission College Boulevard, near the corner of Juliette Lane approximately 0.3 mile from the project site. The airport is located

approximately 1.4 miles southeast of the site and has two runways that exceed 3,200 feet in length (AirNav 2019). The Santa Clara County Airport Land Use Commission (SCCALUC 2016) plan shows that the project does not fall within an airport safety zone. The project's Federal Aviation Regulations (FAR) Part 77 (obstruction) surface is 212 feet above ~~ground~~ **mean sea** level (AMSL), as identified in Figure 6 of the Comprehensive Land Use Plan for San Jose International Airport (SCCALUC 2016).~~.~~