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Description:	staff data requests to the applicant
Filer:	Lon Payne
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CALIFORNIA
ENERGY COMMISSION

June 2, 2021

Amazon Data Services, Inc.
C/O Scott A. Galati
1720 Park Place Drive
Carmichael, California 95608

Data Requests Set 2 for Gilroy Backup Generating Facility (20-SPPE-03)

Dear Mr. Galati:

Pursuant to Title 20, California Code of Regulations, sections 1941 and 1716, California Energy Commission (CEC) staff is asking for the information specified in the enclosed Data Requests Set 2, which is necessary for staff analysis of the Gilroy Backup Generating Facility (GBGF) and associated Gilroy Data Center (GDC), collectively the "project" under the California Environmental Quality Act (CEQA). This Data Requests Set 2 seeks further information in the areas of air quality, hazards and hazardous materials, and utilities and service system. Staff may submit subsequent data requests in these and other resource areas, based on further information received or necessary for a complete analysis of the project.

Responses to the data requests are due to staff within 30 days. If you are unable to provide the information requested, need additional time, or object to providing the requested information, please send written notice to me and the Committee within 20 days of receipt of this letter. Such written notification must contain the reasons for not providing the information, the need for additional time, or the grounds for any objections (see Title 20, California Code of Regulations, section 1716 (f)).

If you have any questions, please email me at leonidas.payne@energy.ca.gov.

_____/S/_____

Leonidas Payne
Project Manager

Enclosure: Data Requests Set 2

GILROY BACKUP GENERATING FACILITY SPPE
DATA REQUESTS SET 2

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AIR QUALITY AND PUBLIC HEALTH

BACKGROUND: Emission Calculations

The Revised Air Quality Impact Assessment (AQIA [TN 237353]) and the appendices (TN 237425) are used to document emissions calculations. Staff needs the spreadsheet files of the emission estimates with live, embedded calculations to complete the review.

DATA REQUEST

34. Please provide the spreadsheet versions of the worksheets in the Revised AQIA (TN 237353) and the appendices (TN 237425) with the embedded calculations live and intact.

BACKGROUND: NO2 Impacts for Different Load Conditions

As stated under Table 4-7 in the Revised AQIA (TN 237353), the applicant did not model 1-hour nitrogen dioxide (NO_2) impacts for the 75%, 25%, and 10% load cases as the applicant expects the emissions from these loads will be less than that of the modeled 100% load case (with 0.25 hour of Tier 2 and 0.75 hour of Tier 4F emissions) and 50% load case (with Tier 2 emissions assumed for the whole hour).
However, staff needs to confirm whether the emissions for the 75%, 25%, and 10% load cases would be lower than those estimated for the 100% and 50% load cases. If Tier 4 emission factor is assumed for part of the hour for these load cases, the applicant needs to provide documents/certificates from the vendor of the selective catalytic reduction (SCR) system to verify the warm-up period of the SCR to reach Tier 4 emission rates for these load cases.
In addition, lower exhaust temperatures and slower exhaust velocities at lower loads could result in higher ground-level concentrations, even if the emissions would be lower. Without modeling, staff would not be able to confirm whether the ground-level impacts for the 75%, 25%, and 10% load cases would be lower than those for the 100% and 50% load cases.

DATA REQUESTS

35. Please provide nitrogen oxides (NOx) emission calculations for the 75%, 25%, or 10% load cases. If Tier 4 emission rate is assumed for part of the hour for these load cases, please provide documents/certificates from the vendor to verify the warm-up period of the SCR to reach Tier 4 emission rates for these load cases.
36. Please provide modeling analysis for the 1-hour NO_2 impacts for the 75%, 25%, and 10% load cases.

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BACKGROUND: NO2 Background

Page 4-3 in the Revised AQIA (TN 237353) states that for the 1-hour NO_2 National Ambient Air Quality Standard (NAAQS) analysis, the 98th percentile background is represented using the 3rd-highest value for each season and hour as consistent with EPA Guidance. For the 1-hour NO_2 California Air Quality Standard (CAAQS) analysis, the maximum seasonal hour of day (SEASHR) data is used as consistent with the format of the standard. However, staff checked the modeling files and noticed that the seasonal hour-of-day NO_2 background data for some of the hours in the fall season used for the CAAQS were lower than those used for the NAAQS analysis (as shown in the following table). In addition, the maximum NO_2 background that the applicant used for the 1-hour NO_2 CAAQS analysis was 61.8 ppb, which is lower than the maximum monitored values shown in Table 3-5 of the Revised AQIA (i.e. 76.9 ppb, 88 ppb, and 65.1 ppb in 2017, 2018, and 2019 respectively).

Staff needs to understand how the NO_2 background data were processed. Staff needs to understand why the maximum seasonal hour-of-day values would be lower than the 3rd-highest values. Staff needs to understand why the maximum NO_2 background that the applicant used for the 1-hour NO_2 CAAQS analysis is lower than the maximum monitored values in 2017, 2018, and 2019.

Hour	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
NO_2 background for CAAQS (ppb)	42.2	40.2	32.8	35.4	34.8	35.8	38.3	45.7
NO_2 background for NAAQS (ppb)	44.23	38.93	36.6	37.47	35.07	36.57	37.33	42.93
Difference (ppb)	**-2.03**	**1.27**	**-3.8**	**-2.07**	**-0.27**	**-0.77**	**0.97**	**2.77**
Hour	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00
NO_2 background for CAAQS (ppb)	50.5	51.3	48.7	49.6	42.5	40.9	42.7	44
NO_2 background for NAAQS (ppb)	48.77	53.53	48.13	47.7	44.6	45.23	43.43	45.37
Difference (ppb)	**1.73**	**-2.23**	**0.57**	**1.9**	**-2.1**	**-4.33**	**-0.73**	**-1.37**
Hour	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00
NO_2 background for CAAQS (ppb)	44.2	48.7	58.1	61.8	51.3	47.6	45.2	46.2
NO_2 background for NAAQS (ppb)	45.4	54.83	64.27	61.43	53.23	48.47	48.67	47
Difference (ppb)	**-1.2**	**-6.13**	**-6.17**	**0.37**	**-1.93**	**-0.87**	**-3.47**	**-0.8**

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37. Please provide a detailed description showing how the NO_2 background data were processed for the 1-hour NO_2 CAAQS and NAAQS analyses.
38. If the NO_2 background data needs to be updated, please update the 1-hour NO_2 CAAQS and/or NAAQS analyses accordingly.

BACKGROUND: Construction Health Risk Assessment

The applicant's AERMOD input file for construction health risk assessment (HRA) shows the exhaust emissions during construction were modeled for 12 hours during weekdays, which means only 3,120 (=12*5*52) hours per year were modeled, instead of 8,760 hours for the whole year. The applicant normalized the emission rates to 1 gram per second (g/s) in the AERMOD run for HRA. And then the normalized concentrations from the AERMOD run were multiplied by the annual diesel particulate matter (DPM) emission rates to get the ground-level concentrations needed in HARP2. Based on staff's independent analysis with a test run, staff verified that HARP2 converts the annual emission rates in pounds per year (lb/yr) to g/s by averaging them among all 8,760 hours of the year (hourly emission rate [g/s] = annual emission rate [lb/yr] x [1 yr/8,760 hours] x [1 hour/3600 s] x [453.6 g/1 lb]). When the normalized concentrations modeled for only 3,120 hours of the year were combined with a lower emission rate averaged over 8,760 hours of the year, the DPM impacts from the exhaust emissions during construction were underestimated by about 64% (=1-[3,120/8,760]). However, the DPM impacts from the emergency standby engines from Phase I were appropriately estimated as part of the HRA for Phase II construction by modeling every hour of the year. Overall, the applicant underestimated the project's cancer risks and chronic HI during construction due to the underestimated DPM impacts from the exhaust emissions from construction.

To verify staff's above findings, staff did an independent HRA by using the PM2.5 impacts directly modeled by AERMOD, rather than using the results from normalized concentrations in AERMOD and applying the emission rates in HARP2. Staff first modified the applicant's AERMOD input file for construction HRA by replacing the 1 g/s emission rates with the emission rates used for the annual PM2.5 impacts analysis for construction (excluding fugitive dust emissions). Staff then re-ran AERMOD with this modified input file and ran HARP2 with the output files from this AERMOD run to calculate the cancer risks and chronic HI. The following table shows staff's modeled results compared with applicant's results at the point of maximum impact (PMI), maximum exposed individual residential receptor (MEIR), maximum exposed individual sensitive receptor (MEISR), and maximum exposed individual worker receptor (MEIW) identified by the applicant. However, it should be noted that staff has not finalized the analysis yet. The applicant needs to verify the methodology. The results in staff's final analysis could be different from those shown in the following table.

Receptor	Receptor ID in Applicant's Analysis	Cancer Risk in Applicant's Analysis	Cancer Risk in Staff's Analysis
MEIR	2134	4.16	9.23
MEISR	1500	2.17	4.51
MEIW	457	2.38	4.78
PMI	577	39.1	96.5 [a]

Note: [a] The PMI in staff's analysis is located at UTM coordinate: (628469.00, 4097725.00), with receptor ID 924.

DATA REQUEST

39. Please verify and revise the construction HRA to properly consider the higher hourly emission rates when only 12 hours during weekdays are modeled for construction exhaust emissions.

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HAZARDS AND HAZARDOUS MATERIALS

BACKGROUND: Urea or Diesel Exhaust Fluid (DEF)

On page 213, the project description specifies the use of urea or diesel exhaust fluid (DEF) which will be used by the selective catalytic reduction equipment.

DATA REQUESTS

40. Please provide a safety data sheet for the DEF and confirm the estimated shelf life of the DEF.
41. Please provide an estimate of how much DEF would be used in a year per diesel engine.
42. Please provide a DEF replenishment strategy and frequency, and how any excess or degraded DEF, if any, would be disposed of properly.
43. Please provide a schematic showing if the DEF is located in a secondary containment.

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UTILITIES AND SERVICE SYSTEMS

BACKGROUND

Sections 10910 et seq. of the California Water Code set forth the circumstances in which CEQA lead agencies must seek preparation of, or prepare themselves, water supply assessments (WSA) for proposed projects that meet certain criteria. One of the criteria is if a project would occupy 40 acres of land or more. Since the Gilroy Data Center project would be built on 56 acres, it meets this criterion and thus a WSA is needed.

A fundamental task of a WSA is to determine whether total projected water supplies available during normal, single-dry, and multiple-dry water years will meet the projected water demand associated with a proposed project, in addition to the water supplier's existing and planned future uses. When making such a determination, the authors of the WSA must address several factors including information regarding existing water supplies, projected water demand, and dry year supply and demand. Suppliers are expressly permitted to rely on information contained in the most recently adopted Urban Water Management Plan (UWMP), so long as the water needed for the proposed project was accounted for therein.

A WSA is required for staff to complete its analysis of the SPPE. The applicant did not submit a WSA along with the SPPE application, nor did it mention any plans to request one from the water supplier.

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44. Please provide a WSA that includes the components described above, particularly availability of water supplies for the purveyor to meet the project's demand in normal, dry, and multi-dry years.
45. In case of a shortage in any projected year, provide information on the water purveyor's plans to make up for those shortages.