

**DOCKETED**

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# SUPPLEMENTAL RESPONSES TO CEC STAFF DATA REQUEST SET 3 (65-69)

Great Oaks South Backup Generating Facility (20-SPPE-01)

SUBMITTED TO: CALIFORNIA ENERGY COMMISSION

SUBMITTED BY: **SV1, LLC**

July 2020



## **INTRODUCTION**

Attached are SV1, LLC's (SV1) responses to California Energy Commission (CEC) Staff Data Requests 65 through 60 of Set No. 3 for the Great Oaks South Backup Generation Facility (SBGF) Application for Small Power Plant Exemption (SPPE) (20-SPPE-01).

The Data Responses for requests 65 through 69 (Air Quality) were not included in the initial Set No. 3 Responses dated June 24, 2020. The responses are presented in the same order as Staff presented them and are keyed to the Data Request numbers (65-69). Additional tables, figures, or documents submitted in response to a data request (e.g., supporting data, stand-alone documents such as plans, folding graphics, etc.) are found in Attachments at the end of the document and labeled with the Data Request Number for ease of reference.

For context the text of the Background and Data Request precede each Data Response.

Note that the responses below reflect revisions to the testing/maintenance schedules which are not based on a total of 17 hours per year. The Applicant is proposing an annual readiness and maintenance testing schedule not to exceed 17 hours per year per engine which would be comprised of 12 hours per year (per engine) with a full load test and 5 hours per year (per engine) at a minimum load (1%). Therefore, the maintenance and readiness testing would occur at loads of 1% to 100%. In addition to the revised hours, the HRA responses reflect a revised HRA modeling analyses where AERMOD was used to calculate the concentration of DPM for the daytime hours of operation (3,650 hours per year). These concentrations were then directly input into HARP rather than importing the emissions and normalized concentrations (chi/q) into HARP. That way, the HRA concentrations represent daytime hours only at 3,650 hours per year or 10 hours per day. Previously, HARP had normalized the DPM emissions (when directly input into HARP) over 8,760 hours and thus, underestimated the risk results.

## **AIR QUALITY AND PUBLIC HEALTH**

### ***BACKGROUND***

***Staff noticed that the receptor number and Universal Transverse Mercator (UTM) coordinates for the maximum exposed individual sensitive receptor (MEIS) shown in Table 4.5-21 of the small power plant exemption (SPPE) application (TN 232466) are not consistent with each other. The UTM coordinates (608080, 4121560) for the receptor #12164 shown in Table 4.5-21 are as shown in the modeling files, which is to the northeast of the project site and close to one of the modeled worker receptors.***

**However, the UTM coordinates (609037, 4120914) shown in Table 4.5-21 are for the receptor #12341, which represents the Los Paseos Elementary School. The modeling files show that the cancer risk at this school would be 1.55 in a million ( $1.55 \times 10^{-6}$ ) during testing and maintenance of the standby engines of the project. The cancer risk modeling files also show that the applicant used age-specific fraction of time at home (FAH) for 3rd trimester to 16 years as well as for 16 years to 70 years.**

**Chapter 11 of the Office of Environmental Health Hazard Assessment (OEHHA) 2012 Air Toxics Hot Spots Program Risk Assessment Guidelines; Technical Support Document for Exposure Assessment and Stochastic Analysis states that the time that a person is away from his or her residence can mean either no exposure to a small facility's emissions, or in the case of a facility with a large isopleth footprint, continuing significant exposure.**

**OEHHA notes it is appropriate to consider the fraction of time people spend at home as an adjustment for exposure to carcinogens. However, a good fraction of the time away from residence will be spent at school for the first sixteen years of life and many California schoolchildren attend a local neighborhood school. Therefore, OEHHA recommends that time away from residence be considered as away from facility emissions (no facility cancer risk) for facilities that do not have a school within the  $1 \times 10^{-6}$  or greater cancer risk isopleth. OEHHA recommends no adjustment for time away from residence when there are schools inside the  $1 \times 10^{-6}$  (or greater) cancer risk isopleth. The larger facilities with multiple emissions sources are most likely to have schools within the  $1 \times 10^{-6}$  isopleth and are more likely to cause significant exposure to people while they are away from their residences. Therefore, page 8-5 of the OEHHA 2015 Air Toxics Hot Spots Program Risk Assessment Guidelines states that facilities with any school within the  $1 \times 10^{-6}$  (or greater) isopleth should use FAH = 1 for the child age groups (3rd Trimester, 0<2 years, and 2<16 years). The applicant needs to revise the cancer risk assessment using FAH = 1 for testing and maintenance of the standby engines to be consistent with the OEHHA guidelines. This applies to any revised health risks assessment requested in Data Request #13 in Data Requests Set 2 (TN 232755).**

## **DATA REQUEST**

65. Please revise the cancer risk assessment for testing and maintenance of the standby engines using FAH = 1 for the child age groups (3rd Trimester, 0<2 years, and 2<16 years). Alternatively, justify that the approach used by the applicant meets OEHHA guidelines.

## **RESPONSE TO DATA REQUEST 65**

65a. The inconsistency between the two values is simply a reference error. Receptor #12341 located at approximate UTM coordinates 609037, 4120914 is for the Los Paseos School, i.e., the MEIS. This response is presented for clarification only, since the HRA has been revised, see below.

65b. The HRA has been revised as follows. For operational HRA impacts the analyses were run for the following basic scenarios; (1) Residential impacts for 30 years using the FAH default values for all periods from the 3<sup>rd</sup> trimester through 16 years to determine if any schools were within the 10<sup>-6</sup> isopleth, (2) Residential impacts for 30 years using an FAH value of 1 for all periods from the 3<sup>rd</sup> trimester through 16 years for any schools within the 10<sup>-6</sup> isopleth, and (3) worker impacts for 25 years (FAH values do not apply to worker assessments per OEHHA 2015 Guidance, pg 8-8), and (4) for construction HRA impacts, the analysis was run with a FAH value of 1 which will provide a health conservative estimate of risks for the MEIR and MEIS receptors over the construction period of 4.3 years. A separate construction analysis was run to determine the MEIW. Please note that construction is estimated to take a period of approximately 6.25 years, but there are considerable periods of downtime between phases. As such the total construction time for purposes of emissions impacts is only 4.3 years. Since HARP does not allow fractions of years, the construction HRA was run for a 5-year period which will conservatively overestimate risk. Also note that the residential scenarios noted above, i.e., FAH=defaults and FAH=1 is consistent with the OEHHA Guidance 2015, Appendix I). Tables 1-3 present the revised risk results for scenarios 1-3 noted above.

Table 1 Scenario 1 Revised Operations Residential Risk Results

<b>Receptor ID</b>	<b>Receptor, UTM</b>	<b>Cancer Risk</b>	<b>Chronic HI</b>	<b>Acute HI</b>
PMI	30, 608154.6, 4121397.9	3.56E-5	0.012	-
MEIR	6493, 608800, 4121050	3.90E-6	0.00132	-
MEIS	6588, 608900, 4120900	2.90E-6	0.00098	-

DPM is the surrogate compound for construction equipment diesel exhaust. No acute REL has been established for DPM.  
FAH=defaults for all age groups from 3<sup>rd</sup> trimester to 16 years.  
MEIS – Los Paseos School

As noted in the text above, since the FAH=default run indicated that a school was within the 10<sup>-6</sup> isopleth a follow up analysis was conducted which set the FAH values to 1 for the period starting at the 3<sup>rd</sup> trimester through 16 years. The results of this analysis are presented in Table 2.

Table 2 Scenario 2 Revised Operations Residential Risk Results

Receptor ID	Receptor, UTM	Cancer Risk	Chronic HI	Acute HI
PMI	30, 608154.6, 4121397.9	4.47E-5	0.012	-
MEIR	6493, 608800, 4121050	4.91E-6	0.00132	-
MEIS	6588, 608900, 4120900	3.65E-6	0.00098	-

DPM is the surrogate compound for construction equipment diesel exhaust. No acute REL has been established for DPM.  
FAH=1 for all age groups from 3<sup>rd</sup> trimester to 16 years.  
MEIS – Los Paseos School

Table 3 Scenario 3 Revised Operations Worker Risk Results

Receptor ID	Receptor, UTM	Cancer Risk	Chronic HI	Acute HI
PMI	30, 608154.6, 4121397.9	1.56E-5	0.012	-
MEIW	3572, 608220, 4121360	9.92E-6	0.00763	-
MEIS	6588, 608900, 4120900	1.27E-6	0.00098	-

DPM is the surrogate compound for construction equipment diesel exhaust. No acute REL has been established for DPM.  
FAH not used.  
MEIS – Los Paseos School

## **BACKGROUND**

**Page 92 of the SPPE application only shows health risk results for the maximum impacted sensitive/residential receptor (#6444) for construction of the project. Staff needs health risk results for the point of maximum impact (PMI) and maximum exposed individual worker receptor (MEIW) to complete analysis of the project impacts. The applicant also used the age-specific FAH for 3rd trimester to 16 years as well as for 16 years to 70 years in the cancer risk analysis for construction of the project. Staff needs to verify that the cancer risks at any school would be less than 1 in a million using FAH = 1, so that the age-specific FAH factors could be used for the cancer risk analysis for construction of the project. This applies to any revised health risks assessment requested in Data Request #13 in Data Requests Set 2 (TN 232755).**

## **DATA REQUESTS**

66. Please provide health risk results for PMI, MEIW, and school receptors for construction of the project.

## **RESPONSE TO DATA REQUEST 66**

As noted in Response 65, the HRA was revised to incorporate the changes in FAH values for both the operational and construction analyses. The table which follows presents the revised HRA results for the PMI, MEIW, and MEIS (school) receptors for the project construction phase as requested.

Table 4 Revised Construction Risk Results

Receptor ID	Receptor, UTM	Cancer Risk	Chronic HI	Acute HI
PMI	3362, 608160, 4121380	3.58E-5	0.0156	-
MEIR	6493, 608800, 4121050	3.58E-6	0.00156	-
MEIW	3500, 608200, 4121340	3.76E-6	0.0139	-
MEIS	6588, 608900, 4120900	2.72E-6	0.0019	-

DPM is the surrogate compound for construction equipment diesel exhaust. No acute REL has been established for DPM.  
 4.3 year construction period.(HRA used 5 year exposure period.)  
 FAH=1 for all age groups from 3<sup>rd</sup> trimester to 16 years, for MEIR and MEIS.  
 FAH not used for MEIW.  
 MEIS – Los Paseos School

67. Please verify that the cancer risks at any school would be less than 1 in a million using FAH = 1, so that the age-specific FAH factors could be used for the cancer risk analysis for construction of the project.

**RESPONSE TO DATA REQUEST 67**

The operational HRA analyses indicated that schools were within the 10<sup>-6</sup> risk isopleth. As such, an HRA analysis was conducted using FAH values of 1 for all periods from the 3<sup>rd</sup> trimester to 16 years of age. The risk at a single school was above 1x10<sup>-6</sup>, and as such, the construction HRA was run using FAH values of 1 for the entirety of the 4.3-year construction period (a 5 year period was used in HARP, see Response 65b above).

**BACKGROUND**

*Table AQ5-1 in Appendix AQ5 (TN 232467-1) provides a list of sensitive receptors. These sensitive receptors match those in the modeling files starting from receptor #12334. However, the modeling files included more receptors for residential areas and workers. For example, the maximum exposed individual residential receptor (MEIR) with receptor #6493 shown in Table 4.5-21 and MEIW with receptor #3572 shown in Table 4.5-22 of the SPPE application are not listed in Table AQ5-1. In order to verify the modeling results, staff needs all the receptor numbers and UTM coordinates for the residential areas and worker receptors other than those listed in Table AQ5-1.*

**DATA REQUEST**

68. Please provide all the receptor numbers and UTM coordinates for the residential areas and worker receptors other than those listed in Table AQ5-1.

## **RESPONSE TO DATA REQUEST 68**

For purposes of clarification, Table AQ5-1 in Appendix AQ5 was not meant to be used to determine final MEIR or MEIW receptors. It is simply a table which shows types of receptors and receptor locations around the immediate area of the project site. It is highly probable that none of these receptors will be the actual location of the MEIR or MEIW because this table does not include the UTM coordinates of all the residential or worker receptors in the site regional area, only a representative sampling of residential and worker receptors near the site. See Response 69 below.

### **BACKGROUND**

*Staff compared the sensitive receptor locations provided by the applicant and those from the Homeland Infrastructure Foundation-Level Data (HIFLD) website (<https://hifld-geoplatform.opendata.arcgis.com/>). Staff noticed the applicant missed some sensitive receptors in the project area. Staff needs to have the health risk impacts on all the sensitive receptors in the project area to verify the MEIR, MEIW, and MEIS. This applies to health risk assessment for both construction of the project and testing and maintenance of the standby engines.*

### **DATA REQUESTS**

69. Please provide a complete list of sensitive receptors in the project area and complete a health risk assessment for the project that includes calculated impacts at all the sensitive receptors. This applies to the health risk assessment for construction of the project and testing and maintenance of the standby engines.

## **RESPONSE TO DATA REQUEST 69**

Receptors 12157 through 12190 as contained in the dispersion modeling input and output files represent all identified sensitive receptors. The revised HRAs for operations and construction used these locations for all analyses. It should be noted that although this group of receptors contains locations for residential, worker, and other sensitive receptors as identified through mapping, the actual modeling grid overlaps many other residential and worker receptors, therefore the MEIR and MEIW locations may not be one of the receptors listed below. The modeling input and output files for operation and construction are included herein (electronic format), as well as the input/output files for the revised HRAs (electronic format).



**Table AQ5-1 Sensitive Receptors and Distances from Site**  
*(all sites and coordinates from Google Earth unless otherwise noted)*  
**Equinix Data Center**

Image Date: 8/19/2018

Receptor ID	UTM Em	UTM Nm	Distance from Stack Mid-point			Modeling Receptor #	UTM E	UTM N
			meters	feet	miles			
<b>Site (approx. mid-point)</b>	<b>607974.00</b>	<b>4121531.00</b>	na	na				
Hospital (Kaiser)	606410.00	4122146.00	1680.6	5513.7	1.04	12157	606410	4122146
Daycare	606647.00	4122198.00	1485.2	4872.7	0.92	12158	606647	4122198
School	607561.00	4121110.00	589.8	1934.9	0.37	12159	607561	4121110
School	606868.00	4121601.00	1108.2	3635.9	0.69	12160	606868	4121601
School (pre-school)	606374.00	4121612.00	1602.0	5256.1	1.00	12161	606374	4121612
School	607591.00	4120778.00	844.8	2771.7	0.52	12162	607591	4120778
School	607962.00	4120464.00	1067.1	3500.9	0.66	12163	607962	4120464
School	609037.00	4120914.00	1229.1	4032.4	0.76	12164	609037	4120914
Residences (East)	608965.00	4121329.00	1011.4	3318.2	0.63	12165	608965	4121329
Residences	607873.00	4121162.00	382.6	1255.2	0.24	12166	607873	4121162
Residences	607714.00	4121199.00	421.7	1383.5	0.26	12167	607714	4121199
Residences	607759.00	4121241.00	361.0	1184.4	0.22	12168	607759	4121241
Residences	607709.00	4121274.00	369.2	1211.1	0.23	12169	607709	4121274
Residences	607671.00	4121305.00	378.0	1240.2	0.23	12170	607671	4121305
Residences	607631.00	4121334.00	395.5	1297.7	0.25	12171	607631	4121334
Residences	607590.00	4121368.00	417.2	1368.6	0.26	12172	607590	4121368
Residences	607545.00	4121389.00	451.9	1482.6	0.28	12173	607545	4121389
Residences	607483.00	4121439.00	499.5	1638.9	0.31	12174	607483	4121439
Residences	607437.00	4121473.00	540.1	1772.1	0.34	12175	607437	4121473
Residences	607393.00	4121502.00	581.7	1908.5	0.36	12176	607393	4121502
Worker (school dist office)	607562.00	4121579.00	414.8	1360.8	0.26	12177	607562	4121579
Worker	608017.00	4121672.00	147.4	483.6	0.09	12178	608017	4121672
Worker	608082.00	4121576.00	117.0	383.9	0.07	12179	608082	4121576
Worker	608143.00	4121541.00	169.3	555.4	0.11	12180	608143	4121541
Worker	608208.00	4121492.00	237.2	778.3	0.15	12181	608208	4121492
Worker	608335.00	4121411.00	380.4	1248.1	0.24	12182	608335	4121411

Worker	608231.00	4121317.00	334.4	1097.2	0.21	12183	608231	4121317
Worker	608141.00	4121260.00	318.3	1044.4	0.20	12184	608141	4121260
Worker	608017.00	4121196.00	337.7	1108.1	0.21	12185	608017	4121196
Worker	608074.00	4121162.00	382.3	1254.3	0.24	12186	608074	4121162
Worker	607597.00	4121496.00	378.6	1242.2	0.24	12187	607597	4121496
Worker	607676.00	4121576.00	301.4	988.8	0.19	12188	607676	4121576
Worker	607721.00	4121628.00	271.0	889.0	0.17	12189	607721	4121628
Worker	607760.00	4121687.00	264.8	868.8	0.16	12190	607760	4121687

This list represents identified sensitive receptors that are located close to the site. It should not be assumed that the PMI, MEIR or MEIW will be a receptor on this list. These important HRA locations will be determined from the modeling grid and HRA output. With respect to the MEIS, this location will most likely be one of the receptors on the above list, since the list contains the identified nearfield hospitals, daycare centers, schools, convalescent care facilities, etc.