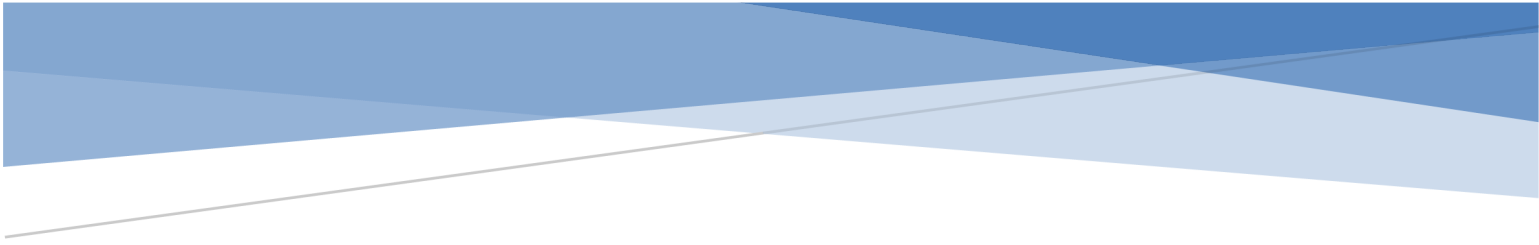


DOCKETED	
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Project Title:	San Jose Data Center 04
TN #:	261695
Document Title:	Microsoft Responses to CEC Data Request Set 5 - SJ04
Description:	N/A
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Organization:	DayZenLLC
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RESPONSE TO CEC STAFF DATA REQUEST SET 5

San Jose Data Center 04 (22-SPPE-02)

SUBMITTED TO: CALIFORNIA ENERGY COMMISSION

SUBMITTED BY: **Microsoft**

February 2025



INTRODUCTION

Attached are Microsoft's responses to California Energy Commission (CEC) Staff Data Request Set No. 5 (117-130) for the SJ04 Data Center Application for Small Power Plant Exemption (SPPE) (22-SPPE-02). Staff issued Data Request Set No. 5 on December 18, 2024.

The Data Responses are grouped by individual discipline or topic area. Within each discipline area, the responses are presented in the same order as Staff presented them and are keyed to the Data Request Numbers. 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.

GENERAL OBJECTIONS

Microsoft objects to all data requests that require analysis beyond which is necessary to comply with the California Environmental Quality Act (CEQA) or which require Microsoft to provide data that is in the control of third parties and not reasonably available to Microsoft. Notwithstanding this objection, Microsoft has worked diligently to provide these responses swiftly to allow the CEC Staff to prepare the Draft Environmental Impact Report (DEIR).

AIR QUALITY

BACKGROUND: RECONDUCTORING CONSTRUCTION EMISSIONS

AQ Memorandum Revised Construction Analysis - SJ04 (TN 255059) does not include estimated construction emissions for the reconductoring portion of the project. The reconductoring activities will be analyzed in the environmental document as the whole of the project because it appears to be a result of the SJ04 project.

DATA REQUESTS

117. Please provide estimated construction mass emissions for the reconductoring portion of the project.

RESPONSE TO DATA REQUEST 117

The California Air Resources Board (CARB) CalEEMod was used to quantify the emissions from construction activities for the PG&E Reconductoring Work of the existing Transmission Lines as described in Section 3.5 of the Second Revised Project Description. The results of the emissions calculations are summarized in Table 1.

In using CalEEMod, several assumptions were made:

1. The existing Transmission Line corridor is offsite from the SJ04 data center.
2. Emissions noted as Onsite in CalEEMod are actually on the existing Transmission Line corridor which is, per 1. above, offsite from SJ04.
3. Only construction emissions were calculated for the Reconductoring Work. No operational emissions were calculated but note that CalEEMod still added some offsite operational emissions which can be ignored.
4. Potential helicopter emissions were calculated outside of CalEEMOD. See Table 2 attached. These emissions were considered as “on-corridor” emissions for purposes of the summary table below.

Table 1 Summary of Reconductoring Work Construction Estimated Emissions									
Scenario	NO _x	CO	ROG	SO _x	PM10 Exhaust	PM10 Fugitive	PM2.5 Exhaust	PM2.5 Fugitive	CO ₂ e
Transmission Line Corridor, tpy ¹	0.92	1.17	0.116	0.0029	0.040	0.105	0.037	0.028	285.6
Helicopter, tpy ²	1.182	3.590	2.941	0.196	0.043	N/A	0.043	N/A	667.63
Total, tpy	2.10	4.76	3.06	0.2	0.083	0.105	0.080	0.028	953.2
Avg, lbs/day	13.46	30.51	19.62	1.28	0.53	0.67	0.51	0.179	-
BAAQMD CEQA Thresholds, lb/day	54	N/A	54	N/A	82	N/A	54	N/A	N/A
Exceeds Thresholds	No	N/A	No	N/A	No	N/A	No	N/A	N/A
Notes: Project period is 1 year (12 months), at 6 days/month = 312 work days/year. ¹ On-corridor mitigated construction emissions only. ² Helicopter emissions data only provide for PM10									

Based on the results of the emissions calculations, the Reconductoring Work construction emissions will be less than the established Bay Area Air Quality Management District (BAAQMD) significance criteria.

Table 2 Helicopter Emissions Estimates															
Activity	# Units	Lift Rating	Model	Mode	Assumed Operations Data				Power shp	Fuel Use lb/hr	HC	Emissions Factors, lbs/hr			PM10
					Days per Week	Hours per Day	Weeks per Year*	Total Hrs/Yr				NOx	CO	SOx	
Pole Remove/Install	1	Light	Hughes 500	LTO	6	0.9	10	54.0	317	36.2	4.4	0.6	5.2	0.02	0.02
Pole Remove/Install	1	Light	Hughes 500	Ops	6	4.1	10	246.0	317	218.3	2.1	1.1	2.6	0.2	0.04
Pole/Tower Upgrades	1	Light	Hughes 500	LTO	6	0.9	26	140.4	317	36.2	4.4	0.6	5.2	0.02	0.02
Pole/Tower Upgrades	1	Light	Hughes 500	Ops	6	4.1	26	639.6	317	218.3	2.1	1.1	2.6	0.2	0.04
Reconductoring	2	Light	Hughes 500	LTO	6	0.9	21	226.8	317	36.2	4.4	0.6	5.2	0.02	0.02
Reconductoring	2	Light	Hughes 500	Ops	6	4.1	21	1033.2	317	218.3	2.1	1.1	2.6	0.2	0.04
Notes:															
1. Data for "zero" emissions factors for the Hughes 500 for SOx and PM10 were ratio'd, based on SHP from the Bell 2148.															
* Assumed Operations Data (these periods may overlap based on the final PG&E schedule)															
2. Each day assumes a maximum of 3 LTOs at a total time of 18 mins for each complete LTO cycle resulting in 54 min/day of LTC											0.9	hrs/day			
3. Total daily ops = 5 hours or 300 minutes															
4. Operations flight mins = 246 mins/day =				4.1	hrs/day										
Emissions Estimates										Fuel Use Summary					
		HC	NOx	CO	SOx	PM10	Mode	Total Lbs/Yr:	434121.5						
Pole Remove/Install	ton/yr	0.1188	0.0162	0.1404	0.00054	0.00054	LTOs	Total Gals/Yr:	62017.4	(Jet kerosene at 7 lbs/gal)					
Pole Remove/Install	ton/yr	0.2583	0.1353	0.3198	0.0246	0.00492	Ops	Btu/lb:	19250	(per aerocorner.com)					
Pole/Tower Upgrades	ton/yr	0.30888	0.04212	0.36504	0.0014	0.0014	LTOs	Btu/gal:	134750						
Pole/Tower Upgrades	ton/yr	0.67158	0.35178	0.83148	0.06396	0.01279	Ops	MMBtu/yr:	8.357E+03						
Reconductoring	ton/yr	0.49896	0.06804	0.58968	0.00227	0.00227	LTOs	Composite CO2e EF	159.78	lbs CO2e/mmbtu					
Reconductoring	ton/yr	1.08486	0.56826	1.34316	0.10332	0.02066	Ops	Total CO2e Emissions	667.63	tons/yr					
Total Tons/Year		2.941	1.182	3.590	0.196	0.043			605.6	Mtons/yr					
Avg Lbs/Day		18.86	7.58	23.01	1.26	0.27	(based on 312 work days per year)								
References:															
FOCA Guidance on Determination of Helicopter Emissions, 1st Edition, March 2009															
California PUC: PGE_Responses>Data1>AQ_Helicopter_Em">https://ia.cpuc.ca.gov/Environment/info/panoramaenv/Fulton-Fitch>PGE_Responses>Data1>AQ_Helicopter_Em															
PG&E, Fulton-Fitch 60 kV Power Line Reconductoring Project															

118. Please provide the updated CalEEMod spreadsheets used to calculate the construction emissions due to reconductoring.

RESPONSE TO DATA REQUEST 118

The updated CalEEMod spreadsheet, CalEEMod output and the helicopter emission calculation sheet will be electronically provided to the CEC.

ALTERNATIVES

BACKGROUND: Dimensions of Proposed Genset Assembly

The Alternatives section of the EIR will include a comparative analysis of the Natural Gas Internal Combustion Engine Alternative to the diesel-fueled gensets proposed for SJDC 04. The description of the alternative includes approximate dimensions of the genset assembly and the comparative dimensions for the proposed diesel gensets. Staff reviewed the original and revised project descriptions and data in Appendix A but has not found information listing dimensions of the proposed diesel genset assembly.

DATA REQUEST

119. Please provide dimensions of the genset assembly for the project.

RESPONSE TO DATA REQUEST 119

In Section 8.3.3 of the SPPE Application, Microsoft explained that natural gas-fired internal combustion engines were rejected because they did not meet the Project Objectives. Natural gas-fired generators were not rejected because they would require a larger footprint. Specifically, the SPPE Application described:

This technology option was rejected because it would require interconnection to a single natural gas pipeline in the same manner as discussed above for Gas-Fired Turbines. For the reasons discussed above a single point of interconnection would not meet the reliability needs outlined in the Project Objectives. Additionally, as discussed above, storage of sufficient natural gas on-site to maintain emergency backup electricity demands of the Project during an outage would not be tenable given the volume of natural gas that would be required.

Microsoft did not collect information about potential dimensions of natural gas-fired generators for a technology that would not meet the Project Objective of providing the most reliable technology.

It is not necessary for Staff to compare the land disturbance between the proposed diesel-fired generators to natural gas-fired generators in order to provide a thorough CEQA analysis in the EIR. In its recent FEIR for the Bowers Backup Generating Facility SPPE Application, Staff used data on dimensions from equipment not provided or evaluated by the Applicant. For the SJ04 Project, Microsoft simply does not have the data relating to size of potential natural gas generators because they simply were not studied.

CULTURAL RESOURCES

BACKGROUND: Record and Evaluate the Guadalupe River Channel

Previous Data Request Set 4 DR 106 has not been fully addressed regarding the Guadalupe River Channel, as the revised Cultural Resources Assessment Report (CRAR) does not record and evaluate the Guadalupe River Channel (Sinsky et al. 2024). The Guadalupe River Channel is 45+ years in age, directly adjacent to the Project Area, and a 45+ year old reconductoring line crosses the Guadalupe River Channel within or immediately adjacent to the Project Area. The buildings proposed for construction as part of the SJ04 Campus would be large in surface area and up to 135 feet tall. These buildings will be clearly visible from the Guadalupe River Channel and the channel is clearly within a reasonable visual impact area.

DATA REQUEST

120. Please assess and evaluate in accordance with CRHR guidelines, the 45+ year old Guadalupe River Channel Levee-Dike as previously requested in Data Request Set 4 DR 106.

RESPONSE TO DATA REQUEST 120

The Guadalupe River Channel Levee-Dike has been evaluated and is now included in the Revised CRAR, which will be docketed under confidential cover on or before February 15, 2025

BACKGROUND: New Tower Construction Location and Height: Survey of Additional Features as Required

The current project description is vague regarding the construction of new towers, noting that such actions may be necessary but without producing any exact locations. The project description states, "If new towers must be installed, they will likely be installed using the drilled pier method" (DayZenLLC 2024a, page 26).

The applicant also mentions a "new PG&E distribution system to the existing PG&E Trimble Substation and the existing PG&E Newark Substation through a new transmission line with poles up to 125 feet in height" (DayZenLLC 2024b). It is unclear whether the new transmission line is on existing towers up to 125 feet in height, or whether new poles up to 125 feet in height might be constructed.

DATA REQUESTS

121. Please clarify whether the new reconductored transmission line is on existing towers up to 125 feet in height, or that new towers up to 125 feet in height may be constructed to carry the new reconductored transmission line.

RESPONSE TO DATA REQUEST 121

Staff is conflating two distinct project components that each involve different types of transmission-related work. The first is a new transmission line that will connect the SJ04 Data Center Buildings to the existing PG&E transmission system which is described in Section 3.3.3.4 of the Third Revised Project Description (Interconnection Transmission Line). The second project component is PG&E's Reconductoring of an existing transmission line (115 kV power line between Newark Substation and Trimble Substation) as described in detail in Section 3.5 of the Second Revised Project Description (Reconductoring Work).

The Interconnection Transmission line will connect the new PG&E Switching Station (on the SJ04 Site) to an existing PG&E transmission line that currently crosses the SJ04 Project site. The exact number of towers and their locations are not yet known as the design is not completed. Please see TN255773. It is these new, on-site transmission poles that will be up to 125 feet in height. These are not part of the Reconductoring Work of the existing PG&E 115 kV Transmission line that connects the Newark Substation and Trimble Substation.

The Reconductoring Work may include replacement of poles or transmission towers if the existing towers or poles cannot support the new conductor. PG&E has anticipated that any replacement towers or poles would not be taller than the existing towers or poles. As described in the CRAR, the Reconductoring Work would not create any additional visual impact area above the current existing setting and therefore no additional analysis need be completed.

122. Please provide the known locations of any newly proposed towers regardless of height.

RESPONSE TO DATA REQUEST 122

With respect to the new towers for the Interconnection Transmission line that will be up to 125 feet and constructed completely onsite, the full design has not yet been completed and therefore exact locations on the site have not been selected. This level of design detail is not necessary to conduct an adequate CEQA review as documented in the last several prior SPPE Approvals by the CEC.

123. If there are any existing known new tower installation locations, please survey and evaluate any 45+year old built environment features within a one-building/parcel-band and a reasonable visual impact area surrounding each tower installation location as these are above-ground project related construction features. In addition, if the new tower installation footprint exceeds the area previously surveyed for archaeological resources, then please conduct an archaeological survey of all additional areas, as necessary.

The recommended conducting of new field surveys and evaluation of 45+year old built environment features within a one-building/parcel-band and a reasonable visual impact area does not apply to reconductoring on existing towers unless the height of an existing tower is raised.

RESPONSE TO DATA REQUEST 123

As described in Response to Data Request 121, the height of any replacement of existing towers or poles for the Reconductoring Project is not anticipated and therefore no new field surveys are necessary.

HAZARDS AND HAZARDOUS MATERIALS

BACKGROUND: Fuel Vapor Monitoring for Interior Fuel supply system

The July 2024 Revised Project Description identifies the addition of two new diesel engine fire pumps (one inside each of the two data center buildings). No further information is provided about the fuel source or location of these two new diesel engine fire pumps.

DATA REQUESTS

124. Please provide information about the onsite fuel source for the two new diesel engine fire pumps. Would these pumps have integrated fuel tanks, or would the diesel fuel be stored in other onsite tanks? What would be the location and capacity of the fuel tanks for the fire pump engines? How often would they need to be refilled?

RESPONSE TO DATA REQUEST 124

Each diesel driven fire pump will have a remote 200-gallon above-ground fuel storage tank located within the fire pump room located on Level 1 along the east side of each building. Diesel driven fire pump basin tanks will be topped off/refilled approximately four times per year. A fill port on the outside of the building will be used to remotely fill the aboveground fuel storage tank.

125. Please provide an updated building layout showing the location of these two new diesel engine fire pumps.

RESPONSE TO DATA REQUEST 125

Please see Revised Figure 3.3-2 in Attachment HAZ DR-125. The fire pump room is location on Northeast face of Level 1, with the room identified on the plan as FIRE PUMP-WATER BOOSTER of the floor plan. The location of the diesel driven fire pump will be similar in both the SJ04 and SJ06 buildings.

LAND USE

BACKGROUND: Building Heights

In March 2024, the applicant submitted a revised project description along with Federal Aviation Administration (FAA) Final Notices of Determination of No Hazard to Air Navigation for each of eight points on the two data center buildings (TN 255061). For each final FAA notice, the building height is stated as 135 feet above ground level (AGL).

The applicant's April 2024 building elevation drawings for the project show that the roof high point for the data center buildings, including the parapet walls, would be 135 feet 6 inches above the Level 1 slab (i.e., building height AGL) (TN 255411), which is 6 inches greater in height than is stated in the final FAA notices. (As described in the revised project description, the parapet walls would extend to a height approximately 40 feet above the roof high point.)

DATA REQUEST

126. Staff requests information explaining the reason for the 6-inch difference between the data center building heights in the applicant's elevation drawings and the building heights AGL stated in the FAA Final Notices of Determination of No Hazard to Air Navigation. If the final FAA notices incorrectly show building heights of 135 feet AGL, please explain when new FAA notices will be provided.

RESPONSE TO DATA REQUEST 126

In response to the FAA requirement for the building not to exceed 135 feet Above Ground Level, the applicant has updated the building design to not exceed 135 feet Above Ground Level. Revised Building Elevations in Figure 3.3-7 and in Figure 3.3-8 have been updated to show the current design which complies with the FAA Determination of No Hazard and are included in Attachment LU DR-126.

NOISE AND VIBRATION

BACKGROUND: RECONDUCTORING CONSTRUCTION HELICOPTER USE

The SJDC04 Revised Project Description (TN# 255161, Section 3.5.2.10 Helicopter Use) discusses the use of helicopters to access towers located on marshland and open-water habitat.

Reconductoring activities would include the use of helicopters, two light duty Hughes 500 or similar and one medium- or heavy-duty Bell Ranger UE205.

DATA REQUESTS

127. Provide the time of day/night flights would occur.

RESPONSE TO DATA REQUEST 127

PG&E expects that flights to occur from 08:00 to 15:00. No night flights will take place unless they are in an emergency.

128. Provide the time of day/night flights would occur.

RESPONSE TO DATA REQUEST 128

This data request duplicates Data Request 127. See Response to Data Request 127.

129. How long (number of hours/days) would any noise sensitive receptor located along the flight path be affected by helicopter noise?

RESPONSE TO DATA REQUEST 129

The maximum hours that a helicopter would be used would be three hours in a single day. On average, helicopter hours will be a combined total of one and a half hours a day three days a week during work at a single location. Helicopter work at a single location is expected to be limited to one to two weeks. Due to varying landing zones and flight paths which may be required for the project, helicopter noise for a single receptor will vary. However, PG&E does not expect any one location to experience helicopter noise for greater than approximately three to four weeks. In addition, the use of the helicopter would be limited areas where cranes cannot be safely used (typically in the marshland and open water habitat) where there are no residential receptors. Due to the limited time frame and infrequency of use and operation only during the daytime hours, the temporary noise from use of a helicopter for the Reconductoring Work would be less than significant.

130. Provide the noise level of the helicopters' flyover at the project's noise sensitive receptors at the ground level nearest to the flight path?

RESPONSE TO DATA REQUEST 130

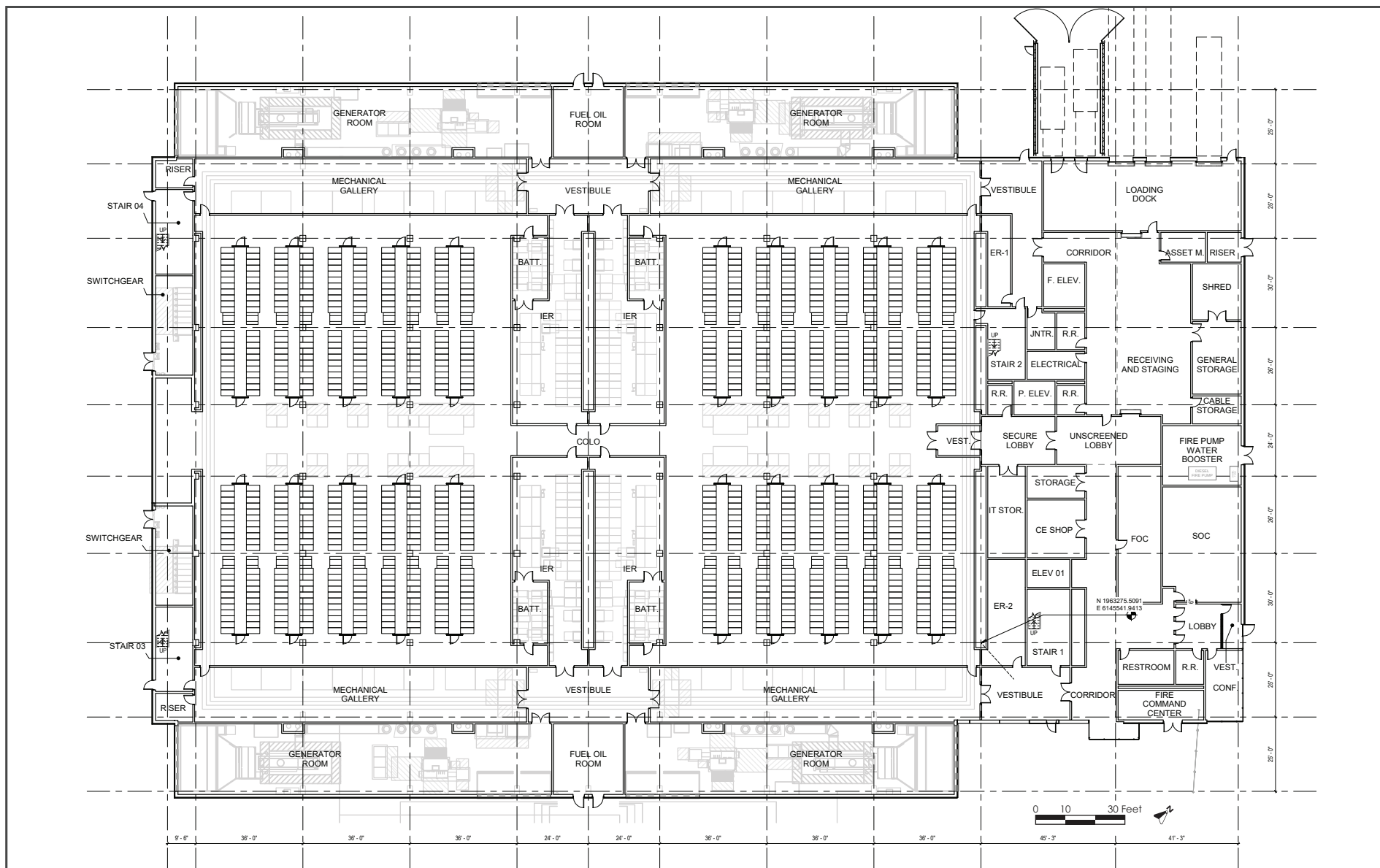
PG&E anticipates using a light-duty helicopter for the installation of the high voltage conductors from tower-to-tower and anticipates using a medium-duty helicopter to install the replacement transmission line tower where cranes cannot be safely used (typically in the marshland and open water habitat). Along the transmission line alignment the helicopters will potentially take-off, land, travel at a constant level and hover. Anticipated sound levels are estimated below for these scenarios at 100', 250', 500', 1000' and 2,000' away from the helicopter for the light load and medium load helicopters.

Equipment Description	Activity	Lmax at 100 feet (dBA)	Lmax at 250 feet (dBA)	Lmax at 500 feet (dBA)	Lmax at 1000 feet (dBA)	Lmax at 2,000 feet (dBA)
Light Helicopter (MD500); used for Reconductoring	Take-off	88	80	74	68	62
	Landing	91	83	77	71	65
	Level Flight	87	79	73	67	61
	Hover	85	77	71	65	59

Equipment Description	Activity	Lmax at 100 feet (dBA)	Lmax at 250 feet (dBA)	Lmax at 500 feet (dBA)	Lmax at 1000 feet (dBA)	Lmax at 2,000 feet (dBA)
Medium Helicopter (Bell 206); used for Tower Modifications	Take-off	87	79	73	67	61
	Landing	92	84	78	72	66
	Level Flight	87	79	73	67	61
	Hover	85	77	71	65	59
Notes: dBA = A-weighted decibels; Lmax = maximum sound pressure level Source: FAA (FAA 1984, 1985)						

ATTACHMENT HAZ DR-125

Revised Figure 3.3-2

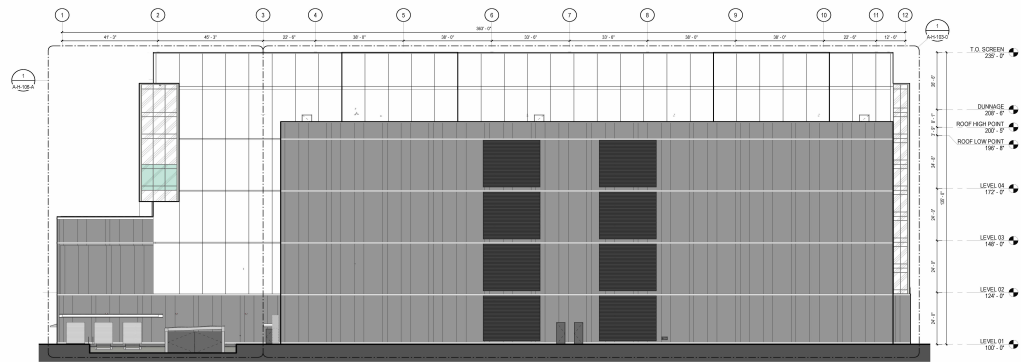


DATA CENTER BUILDING FIRST LEVEL FLOOR PLAN

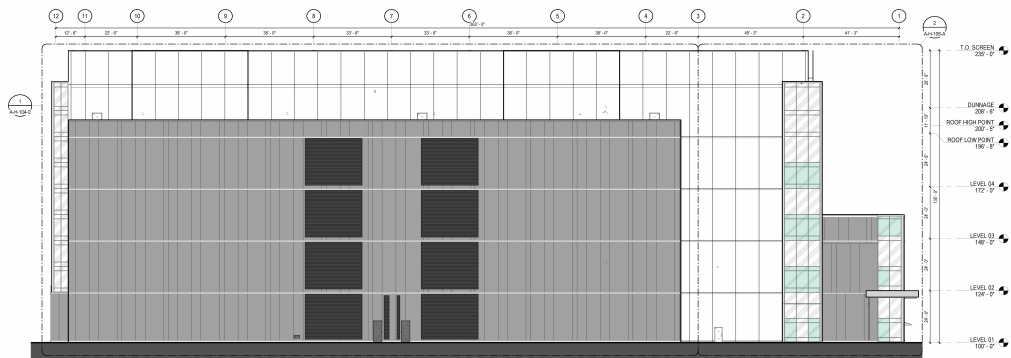
FIGURE 3.3-2

ATTACHMENT LU DR-126

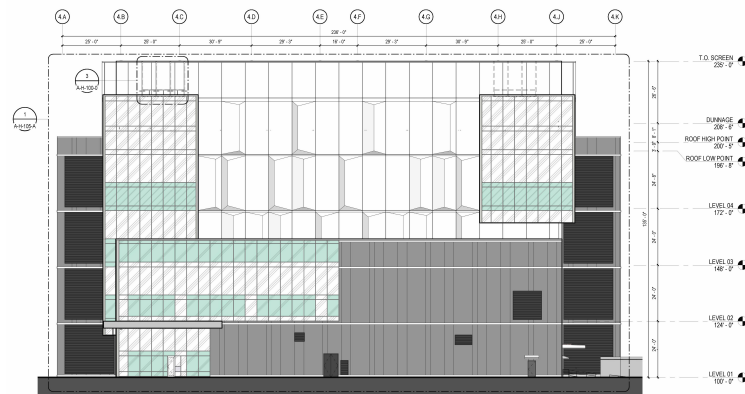
Revised Elevation Figures 3.3-7 and 3.3-8



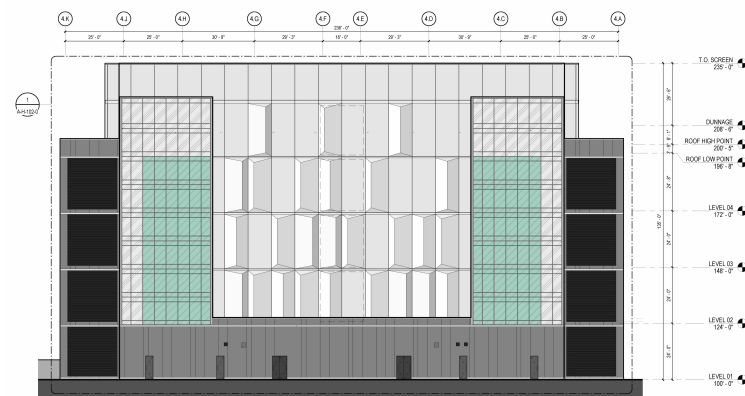
1 OVERALL NORTH ELEVATION
1/16" = 1'-0"



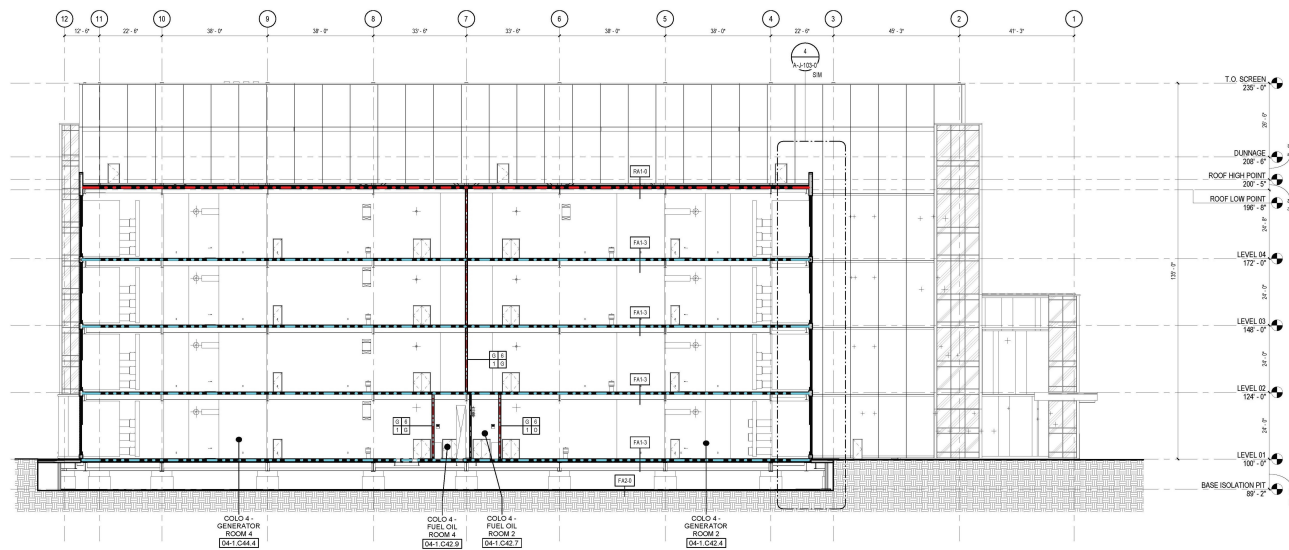
2 OVERALL SOUTH ELEVATION
1/16" = 1'-0"



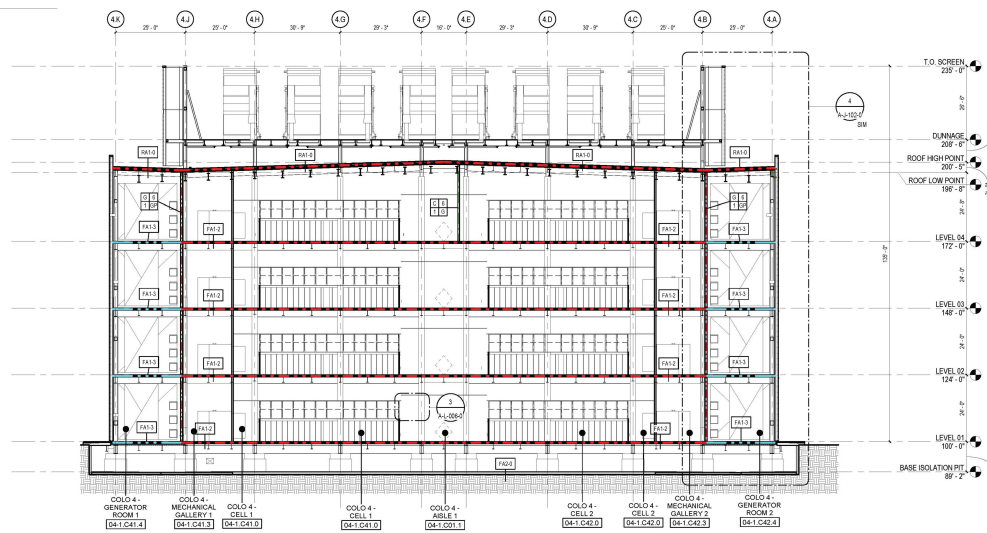
2 OVERALL EAST ELEVATION
1/16" = 1'-0"



1 OVERALL WEST ELEVATION
1/16" = 1'-0"



2 EW BUILDING SECTION
1/16" = 1'-0"



1 NS BUILDING SECTION
1/16" = 1'-0"

LONGITUDINAL AND TRANSVERSE SECTION BUILDING ELEVATIONS

FIGURE 3.3-8