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June 7, 2018

Mr. Eric Chiang  
California Public Utilities Commission  
505 Van Ness Avenue  
San Francisco, CA 94102

**RE: Pacific Gas and Electric Company Martin Substation Extension / Egbert Switching Station Project (A. 17-12-021) Response to California Public Utilities Commission Application Data Request No. 3**

Dear Mr. Chiang:

This letter is in reply to your May 17, 2018, letter in which you request certain additional information regarding Pacific Gas and Electric Company's (PG&E's) application (A.17-12-021) for a Certificate for Public Convenience and Necessity for the Egbert Switching Station Project (project). The original text for each data request from the California Public Utilities Commission (CPUC) is included, followed by PG&E's response.

There are three attachments to this letter to support PG&E's response:

- |              |                                                                                                                                                                                                                                                     |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Attachment 1 | Vehicle Trip Generation Summary, PCE update                                                                                                                                                                                                         |
| Attachment 2 | Preliminary Transmission EMF Management Plan Magnetic Field Calculations                                                                                                                                                                            |
| Attachment 3 | GIS shapefiles for (1) proposed underground 230 kV route realignment with proposed road realignment of Santos Street and (2) proposed transmission lines stationing identifying locations described in Table 2 of Preliminary Field Management Plan |
| Attachment 4 | Confidentiality Declaration regarding certain GIS shapefiles being provided in Attachment 3                                                                                                                                                         |

***CPUC Data Request Item 1 – Transportation and Traffic***

- a) The PCE factor of 1.5 provided in Data Request Response No. 2 is used for trucks when analyzing freeway use. For planning-level analysis of signalized intersections, as is the project area conditions, a conversion factor of 2.0 is recommended for heavy vehicles in mixed traffic stream in the Highway Capacity Manual 6th Edition (TRB). Based on the location of the project components, Dudek recommends using a factor of 1.5 for trucks and 2.0 for heavy haul trucks. Please provide project trip generation for the project based on these factors.

***PG&E's Response***

- a) PG&E has provided Attachment 1 with an updated vehicle trip generation summary using a PCE factor of 2.0 for heavy-duty haul trucks. This is a conservative planning-level analysis based on the high-level construction schedule detail available (see response to

Data Request #1, Item 17a&b for original table). Construction traffic volume assumptions from the AQ-GHG emissions calculations workbook were reviewed for this response; however, the assumptions in the workbook were not revised. Estimated use of medium-duty trucks continues to be included in the heavy-duty truck summary. Heavy haul trucks arrival and departure trips previously counted in workforce trips are now included in the heavy-duty truck summary to clearly apply the 2.0 PCE factor. This response provides adjustments to the peak month for each trip type and the combined trip summary: the workforce trips now peak in 2021, Month 5; the light-duty or pick-up trips now peak in 2020, Month 8; the heavy-duty trips now peak in 2020, Month 9; and the total workforce and truck trips (combined) now peak in 2020, Month 9. The conservative estimate of peak construction trip generation is inset below and provided in Attachment 1.

Construction Phase	2020												2021												2022
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	
<b>Workforce Trips</b>																									
Transmission Line	-	-	-	0	8	20	38	50	38	32	32	26	26	26	26	26	42	30	20	20	24	8	0	0	0
Switching Station	-	-	-	20	20	22	22	22	26	26	24	24	24	28	24	34	42	48	54	58	38	24	0	0	0
Substation-Remote Ends	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	8	8	8
Subtotal	-	-	-	20	28	42	60	72	64	58	56	50	50	54	50	60	84	78	74	78	65	35	8	8	8
<b>Workforce Trips<sup>1</sup></b>	-	-	-	40	56	84	120	144	128	116	112	100	100	108	100	120	168	156	148	156	129	69	16	16	16
<b>Light-duty Truck Trips</b>																									
Transmission Line	-	-	-	0	155	135	220	248	220	192	192	119	119	119	119	119	121	64	64	64	9	7	0	0	0
Switching Station	-	-	-	6	6	6	6	6	6	10	4	4	4	6	6	8	6	6	12	12	6	0	0	0	0
Substation-Remote Ends	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10	15	15	15
Subtotal	-	-	-	6	161	141	226	254	226	202	196	123	123	125	125	127	127	70	70	76	31	23	15	15	15
<b>Truck Trips per Day<sup>2</sup></b>	-	-	-	6	161	141	226	254	226	202	196	123	123	125	125	127	127	70	70	76	31	23	15	15	15
<b>Heavy-duty Truck Trips</b>																									
Transmission Line	-	-	-	0	45	93	99	99	126	96	96	65	65	21	21	4	4	1	1	1	1	1	0	0	0
Switching Station	-	-	-	14	37	29	28	23	19	5	2	2	2	4	3	5	4	4	4	10	13	20	0	0	0
Substation-Remote Ends	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	6	9	9
Subtotal	-	-	-	14	82	122	127	122	145	101	98	67	67	25	24	9	8	5	5	11	14	21	9	6	9
<b>Truck Trips per Day<sup>3</sup></b>	-	-	-	14	82	122	127	122	145	101	98	67	67	25	24	9	8	5	5	11	14	21	9	6	9
<b>Passenger Car Equiv (PCE, 2.0)</b>	-	-	-	28	164	244	254	244	290	202	196	134	134	50	48	18	16	10	10	22	28	42	18	12	18
<b>TOTAL COMBINED DAILY TRIPS<sup>4</sup></b>	-	-	-	74	381	469	600	642	644	520	504	357	357	283	273	265	311	236	228	254	188	134	49	43	49

The peak construction trip generation summary, average daily total, is updated to align with the total combined workforce and truck trips peak in 2020, Month 9.

Trip Type	ADT	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Workforce	128	12	0	12	0	12	12
Light-duty Trucks	226	10	10	20	10	10	20
Heavy-duty Trucks (2.0 PCE)	290	8	8	16	8	8	16
<b>Total Construction Traffic in PCE</b>	<b>644</b>	<b>30</b>	<b>18</b>	<b>48</b>	<b>18</b>	<b>30</b>	<b>48</b>

The project's construction activities would generate slight increases in traffic on interstate highways and local roads, the effects will be minimal, short term, dispersed, and periodic. Potential impacts would be less than significant and Applicant-Proposed Measure (APM) Transportation and Traffic (TR)-1, would further reduce any impact.

**CPUC Data Request Item 2 - Air Quality / Health Risks**

- a) If there are any revisions to construction traffic volume assumptions based on the response to item 1a) above, please update the air quality and greenhouse gas emissions calculations accordingly.
- b) Please provide a construction Health Risk Assessment for the Egbert Switching Station site. In regards to the construction health risk assessment, we understand that there is not a regulatory requirement that triggers this. However, we reiterate our request for a construction health risk assessment based on the public concerns regarding this topic. There are several important factors that warrant this assessment:

- i. The PEA cites the 2017 BAAQMD CEQA Guidelines as support for not conducting the construction health risk assessment. However, although the BAAQMD CEQA Guidelines were adopted in 2017, they are re-adopted based on the 2010 BAAQMD CEQA Guidelines, which do not account for the 2015 revisions to the Office of Environmental Health Hazard Assessment's (OEHHA) Guidance Manual for Preparation of Health Risk Assessments. OEHHA's updated Guidance accounts for the higher sensitivity of infants and children by applying age-specific daily breathing rates (DBRs) and age-sensitivity factors (ASFs). This updated OEHHA Guidance recommends that exposure be assumed to start in the 3rd trimester and

"We do not recommend assessing cancer risk for projects lasting less than two months at the MEIR [Maximum Exposed Individual Resident]. We recommend that exposure from projects longer than 2 months but less than 6 months be assumed to last 6 months (e.g., a 2-month project would be evaluated as if it lasted 6 months). Exposure from projects lasting more than 6 months should be evaluated for the duration of the project." (OEHHA 2015, page 8-18)

Therefore, health risk evaluation for even short-term (over 2 months) exposure of toxic air contaminants (such as from construction activity at the Martin Substation site) is recommended based on the potential early-life impact.

- ii. We have evaluated short-term construction health risk impacts following the updated 2015 OEHHA Guidelines for other projects in similar proximity to sensitive residential receptors as the Martin Substation site and have identified potentially significant health risk impacts. These projects have required greater mitigation than the APMs provided in the PEA in order to reduce health risk impacts to less than significant levels.
- iii. The PEA notes that construction emissions are short-term and do not exceed the BAAQMD significance threshold for any criteria pollutant and thus will not have a significant impact on the nearby sensitive receptors during construction. However, criteria air pollutants are not the same as toxic air contaminants. Even if criteria pollutant emissions are found to be less than significant, toxic air contaminant exposure and health risk can still exceed thresholds.

#### ***PG&E's Response***

- a) No revisions were made to construction traffic volume assumptions; and therefore, air quality and greenhouse gas emissions calculations were not updated.
- b) PG&E will perform a screening Health Risk Assessment (HRA) to evaluate the potential health risks due to project construction of the switching station site and the terminal equipment removal activity at Martin Substation. In PEA Section 3.8, the potential for impacts on public health from hazards and hazardous materials is discussed. With the unknown but potential for residual soil or groundwater contamination, PG&E included APM Hazardous Material (HM)-1 (Development and Implementation of Hazardous Material and Emergency Response Procedures) in the PEA to minimize the potential exposure of the public and project workers to potential hazardous materials during all project phases. Additionally, APM HM-3 (Soil, Groundwater, Underground Tank, and Wastewater Characterization) is proposed to conduct soil and groundwater sampling

where existing data are not available prior to or upon commencement of construction and was previously discussed in PG&E's response to Data Request 1, Item #14e. The potential for unknown emissions from unknown residual soil or groundwater contamination will not be included in the screening HRA. Therefore, diesel particulate matter (DPM) is the only toxic air contaminant (TAC) expected to be emitted during construction and the only TAC to be included in the screening HRA.

The screening HRA will use American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) to model DPM emissions, resulting from exhaust of diesel-fueled construction equipment and vehicles operated within the project area. The modeled emission rates will be derived from PG&E's PEA construction emission estimates, averaged over the construction period, and spatially distributed within the construction area. PG&E will estimate cancer and chronic (non-cancer) risks for residential and worker exposure using the modeled output (maximum annual ground-level concentrations) and equations from the Air Toxic Hot Spots Guidance Manual for Preparation of Health Risk Assessments (Office of Environmental Health Hazard Assessment [OEHHA], 2015). This approach has been successfully used for several California Energy Commission (CEC) licensing projects in southern California, such as with AES' Alamitos Energy Center (refer to Section 5.9.1.3 and Appendix 5.9C of TN #211013 of Docket No. 13-AFC-01).

The screening HRA is currently being prepared and is expected to be provided to the CPUC in mid-late June 2018.

***CPUC Data Request Item #3 – Noise***

- a) If there are any revisions to construction traffic volume assumptions based on the response to item 1a) above, please provide analysis of the worst-case construction traffic noise level increase within Brisbane and San Francisco, based upon comparison of existing roadway volume to existing plus construction traffic roadway volumes, at the closest noise-sensitive receptor along potential construction truck and equipment haul routes.

***PG&E's Response***

- b) No revisions were made to construction traffic volume assumptions; and therefore, the described noise analysis is not provided.

***CPUC Data Request Item #4 – Electric and Magnetic Fields***

- a) Clarification is needed whether the Egbert Avenue site satisfies CPUC EMF policy goals (and meets CAISO reliability goals) as well as, or better than, other sites. Note that this request does not depend on final design engineering. Please disclose the following additional information concerning the Egbert Switching Station:
  - i. Area required for the 230 kV switching station in respect of the proposed 1.7 acre Egbert site;
  - ii. Locations, if any, of sites for a 230 kV switching station in the target zone near the Martin Substation and evaluation of such sites for no- cost/low-cost EMF reductions.

- iii. Factors relevant to EMF levels in inhabited environments that influenced selection of the Egbert Avenue site and disclose other sites superior to the Egbert Avenue site with regard for CPUC EMF policy.
- b) Provide information to clarify the magnitude of environmental EMF increases associated with the project and locations where such EMF increases would indicate the usefulness of no-cost/low-cost EMF reductions. Note that Table 1 of the preliminary EMF Management Plan shows reductions within the ROW due to greater conductor depth, but does not inform on reductions of environmental EMF levels, such as at the locations given in Table 2 (lac. cit.) that include sensitive receptors. EMF levels at various distances from the proposed Underground 230 kV transmission cables are not presented and should be given in a tabular or graphical form, as commonly is done for overhead transmission lines. Presentation of such data would be informative, consistent with intentions of CPUC policy, and would not require comparisons of environmental levels to any existing or proposed exposure standard.
- c) Provide tables and maps of sufficient resolution and detail (greater than in Figure 2.5-1 of the PEA) to show distances from residential and sensitive receptor sites to the proposed rights-of-way of the new Jefferson-Egbert, Egbert-Embarcadero and Martin-Egbert underground 230 kV transmission lines. Depending on the locations of residences and sensitive receptors (e.g., schools, hospitals, daycare centers), additional design factors may be useful to clarify compliance with CPUC EMF policy. Such other factors include location of cables entering and exiting the Egbert switching station, ductwork design, cable phasing and conceivably, slant distances from utility infrastructure to residences in multi-story buildings.

#### ***PG&E's Response***

- a) As the CPUC concluded as a matter of law in its 2006 EMF Decision: "EMF concerns in future CPCN and PTC proceedings for electric transmission and substation facilities should be limited to the utility's compliance with the Commission's low-cost/no-cost policies." PG&E will implement low-cost/no-cost EMF mitigation measures to reduce public EMF exposures where feasible. The CPUC's EMF policy does not require PG&E to conduct a comparative evaluation of substation or transmission line sites to determine which site better achieves the EMF policy goals. By implementing the CPUC's no-cost/low-cost policy, PG&E achieves the goals of the policy. EMF exposure issues are indirectly addressed in PG&E's comparative evaluation of land use constraints of potential sites and routes. We seek to avoid impacting sensitive receptors, such as schools and hospitals as a general matter, but must balance those concerns with other environmental and engineering constraints. Given that this project is primarily located within the City of San Francisco, which is a densely developed city with a complex mosaic of multiple land uses that can vary from block to block, the result of our comparative evaluation is the proposed project and alternatives presented in the application. Once a proposed site is identified to present to the CPUC in the permit application, PG&E prepares a preliminary field management plan and substation checklist for the proposed site as part of the application. The field management plan considers feasible design changes to the proposed project that could meet the CPUC's no-cost/low-cost policy for magnetic field mitigation. The CPUC may authorize construction of the project at the proposed site or it may specify another site. Once the CPUC has issued the permit and identified the location for the switching station and the alignments for the

underground 230 kV lines, PG&E will prepare a final field management plan and substation checklist that implements the CPUC's no-cost/low-cost policy.

- i. During the siting process, the preferred size and shape for the switching station site was two acres with equal width and depth dimensions. Engineering did find that although the size and shape were not optimal, the 1.7 acre Egbert site would be adequate for operation and maintenance of the switchyard.
  - ii. The PEA includes two alternative sites where PG&E could seek to acquire approximately two acres for the switching station. PG&E prepared a preliminary field management plan and substation checklist for the proposed site as part of the application. However, PG&E is not required to, nor does it, prepare preliminary field management plans or substation checklists for alternative sites, and did not prepare preliminary field management plans for the two alternative sites discussed in the application. However, for both of the alternative sites the substation checklist would be the same as for the Egbert site.
  - iii. PG&E's comparative evaluation of land use constraints of potential sites and routes indirectly addressed EMF exposure issues. PG&E prepared a preliminary field management plan and substation checklist for the proposed site as part of the permit application. However, PG&E is not required to, nor did it prepare a preliminary field management plan or substation checklist for the alternative sites discussed in the application. However, for any siting alternative, the switchyard size and general arrangements would be similar. Therefore, the substation checklist for the alternative would be the same as for the Egbert site.
- b) Provided as Attachment 2, please find the Preliminary Transmission EMF Management Plan Magnetic Field Calculations for the project that provides magnetic field levels for both types of the proposed underground 230 kV transmission cables in a tabular and graphical form.
- c) Provided as Attachment 3, are GIS shapefiles providing proposed transmission lines' stationing that correspond with the stationing used in Table 2 of the preliminary field management plan. The first column of Table 2 lists the stationing in 100-foot increments, starting with 10+00. So, 10+00 to 13+00 equals a line length of 300 feet. The shapefiles should allow general determination of distances between the proposed lines and various land uses. During final engineering, design factors such as locations of existing and newly installed utilities, maintaining traffic flow during installation, cable bend radii and pulling tensions will determine line placement within the roadways. In the final field management plan, both the duct bank and pipe type cable configurations will be strategically placed within the right of way to reduce magnetic field exposure to properties along the entire route, except where the location of existing underground utilities and other constraints prevent strategic line placement.

We would be happy to meet, and tour the project area to explain the design factors and routing constraints in more detail.

***CPUC Data Request Item #5 – Santos Street – New Alignment***

- a) Based on the proposed road alignment for Santos Street due to the Sunnydale Housing complex, please provide updated GIS data layers that reflect this change to the alignment for the Egbert Switching Station Project.

***PG&E's Response***

- a) Provided as Attachment 3 to this letter, please find the updated GIS shapefiles for a revised proposed project route for the Jefferson-Egbert underground 230 kV line to align with the proposed road alignment for Santos Street due to the Sunnydale Housing complex. We are deeming the GIS shapefiles as confidential for the reasons stated in the confidentiality declaration provided as Attachment 4.

We trust the information provided herein is fully responsive to your requests. However, should you have any further requests, please do not hesitate to contact me at (415) 973-0301.

Sincerely,



Bob Donovan  
Senior Land Planner

Enclosure(s):  
Attachments 1-4

cc:  
Wendy Worthey, Dudek  
Mathew Swain, PG&E Law Department  
Colleen Taylor, Jacobs