Sanger Substation Expansion Project Data Request # 3

Data requests for Pacific Gas and Electric Company's (PG&E's) Sanger Substation Expansion Project are described in detail in the table below.

No.	*Reference*	*Description of data being requested*	*PG&E Response*
Project Description			
1	Section 2.5.1, "Expanded Substation"; April 29th 2016 Data Response, Item 6	**Provide more detail about the proposed changes to the Sanger Substation expansion layout design.** PG&E's Data Response Item 6 from April 29, in response to Data Request #6, states that the proposed project would include installation of a microwave tower on the expanded substation site instead of installing the fiber optic telecommunication route described in the PEA (page 2-10). In addition, Item 6 describes a substation design update to allow for relocation and enlargement of the two MPAC buildings proposed within the expanded substation site. Updated figures and visual simulations are needed to analyze the impacts of these components. Provide the following additional detail regarding recent updates to the substation design: • Updated PEA Figure 2-4 showing the location of the proposed microwave tower and relocation of MPAC Building #2. If an updated Figure 2-4 is not currently available, provision of a basic layout schematic showing proposed expanded substation components is acceptable. • Similar to PEA Figure 2-6, a basic microwave tower design drawing, indicating components and above and below ground dimensions. • Updated PEA Figures 3.1-3b, 3.1-4b, and 3.1-5b, corresponding to visual simulations of the	Updated PEA figures are provided in Attachment A. The updated Figure 2-4 shows the expanded substation general arrangement. Also included is a typical microwave tower schematic depicting the Mendota Substation microwave tower, which is 100 feet tall. At this time, the design for the attachments to the Sanger Substation microwave tower are preliminary and may differ from what is shown in the schematic. The microwave tower will likely have two antenna dishes due to the distance of the microwave path, which is similar to the tower at Mendota Substation, but they will likely face NE. The visual simulations are in the process of being updated. PG&E will provide updated Figures 3.1-3b, 3.1-4b, and 3.1-5b as soon as they are available. At this time, PG&E has not determined what type of foundation will be required for the microwave tower. The foundation design for the microwave tower will be determined based on the geotechnical report after the design is further developed, but will be either a reinforced concrete slab foundation or drilled pier. The reinforced concrete slab can be up to 42 inches thick with 2-foot piers and 2 feet of soil cover. The drilled pier foundation can be approximately 40-foot deep drilled piers. The construction of a concrete slab foundation is completed by a back hoe/bob cat machine with hand digging near the identified underground utilities. The

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		proposed project from VP1, VP 2, and VP6, respectively. A revised figure for VP7 is not needed at this time.	crew will build the reinforced steel cage for the foundation on site. The erection of the tower and installation of the antennas will be completed using a crane. The drilled pier foundation will be built by boring a hole using a boring machine, then pouring slurry into the opening to keep the soil walls from caving in. The reinforced steel column will be installed using a crane. After the foundation has cured, the tower and antennas will be completed using a crane. The dimensions for the new MPAC buildings are estimated to be approximately 98 feet by 15 feet 4 inches.
2	Table 2-1, "Typical Construction Equipment"; April 29, 2016 Data Response, Item 3	**Confirm estimate of concrete to be imported.** The PEA notes that concrete would be imported for foundations. PG&E's response to Data Request No. 2 states that information about concrete use is not yet available. An estimate of concrete import is necessary to analyze traffic, air quality, and greenhouse gas impacts. Based on average capacity of concrete trucks and the specific dimensions for concrete footings and foundations required for the structures and buildings described in the PEA and the response to Data Request No.2, it is estimated that approximately 2,300 cubic yards of concrete would be used during the proposed project construction, requiring about 230 truck trips total (assuming use of 10-CY capacity trucks). Confirm these estimates are valid; if not, provide a revised estimate. State whether these truck trips were accounted for in provided truck trip figures; if not, provide revised truck trip figures.	Based on the current general arrangement, the volume of concrete to be imported is likely to be approximately 1,183 cubic yards (CY). Including a 20% contingency buffer, this equates to approximately 1,420 CY resulting in approximately 142 truck trips (assuming a 10 CY hauling capacity per truck). A revised Estimated Truck Trips (Table 3.16-3) will be submitted when available.

No.	*Reference*	*Description of data being requested*	*PG&E Response*
3	April 29, 2016 Data Response, Item 7; March 4, 2016 Data Response, Items 28 and 29; November 23, 2015 Deficiency Letter Response, Item 19.	**Confirm number of soil hauling trips required during construction.** PG&E's response to Data Request No. 2 states that "there may be two to four dump trucks for soil inhaul and outhaul in the expanded substation at any time." PG&E's response to Deficiency Letter No. 1 states that a rough estimate for maximum soil import would be 30,000 cubic yards (assuming an overall site grade height increase of 2 feet). Revisions to Table 3.16-3 provided by PG&E in response to Data Request No. 1 indicate that there will be 1,056 construction support trucks over the course of Phase 1. However, soil imports do not appear to included in the trip generation table. An estimate of soil import haul trips is necessary to analyze traffic, air quality, and greenhouse gas impacts. Based on average capacity of dump trucks, it can be assumed that there would be approximately 3,000 truck loads all occurring during Phase 1 and evenly distributed throughout this construction phase. This assumption would lead to additional 45 daily roundtrips for soil hauling trips during the proposed project construction. Confirm these estimates are valid; if not, provide a revised estimate.	PG&E is currently undertaking the preparation of the preliminary grading plans, which are anticipated to be completed by the second week of June. PG&E will provide the requested soil hauling trip information when the grading plans are available. A revised Estimated Truck Trips (Table 3.16-3) will be submitted when available.

No.	*Reference*	*Description of data being requested*	*PG&E Response*
4	April 29, 2016 Data Response, Item 7; March 4, 2016 Data Response, Items 28 and 29;	**Confirm number of support vehicle trips.** PG&E's response to Data Request No. 2 states that " there may be up to 12 to 15 standard vehicles within the expanded substation site during construction." Clarify what is defined as a "standard vehicle" and whether this definition would include worker vehicles. which have been identified in PG&E's response to Data Request No. 1 as 30 vehicles every day. It is presumed, but not clear, that the 12 to 15 standard vehicles would be onsite any one time, instead of being a daily total of standard vehicles that would visit the site. Please confirm this interpretation is correct.	This interpretation is correct. The 12 to 15 standard vehicles is a subset of the 30 worker trips per day, which was provided by PG&E in the Estimated Truck Trips table. A standard vehicle is the same thing as a worker vehicle.