PG&E Sanger Substation Expansion Project PEA Deficiencies				
No.	*Reference*	*CPUC Requirement*	*Description of Deficiency*	*PG&E Response*
Project Description				
3, 4, 8	N/A	PEA Checklist sections 3.4, 3.5.1, 3.7.1.1, 3.7.1.2, 3.7.1.3, 3.7.1.5, 3.7.2.1, 3.7.2.2; section V(11) of the Information and Criteria List	**Provide additional detail in the project GIS (or equivalent) data layers.** In Deficiency Response 1, PG&E provided GIS data for several components and confirmed the project would not involve several other components. PG&E omitted from the GIS several components that would be included in the proposed project, and stated it was unknown if several other components would be required for the project. The GIS therefore does not contain but should contain potential locations of: • *New access roads for construction and overland routes for construction.* It would be acceptable to provide a "corridor" of where roads may be located, as well as the maximum disturbance (e.g., length of road and width of road) in lieu of providing precise locations of access roads and overland routes) • *Existing access roads to be used for construction.* Provide the location and extent of the existing twin-track road that would be used to access new pole locations east of South McCall Avenue referenced on page 2-16 of the PEA. • *Staging area within substation area.* Provide a delineation of the area that would be used for staging on the eastern portion of the substation pad, as described on page 2-16 of the PEA. Figure 2-4, which contains information about extent of the expanded substation, may provide constraints for where the staging area would be located within the substation pad.	PG&E is including GIS files for the following: • *New temporary access roads and overland routes for construction* • *Existing access roads to be used for construction* The new temporary access road GIS files are provided as 100-foot-wide corridors. Twelve-foot-wide temporary access roads will be located within the 100-foot corridors. The combined maximum length of all new temporary access roads is approximately 800 linear feet. As described below, PG&E has provided GIS files for the boundaries of the expanded substation; the following areas will be located within these boundaries ("constraint area"): • *Staging area within substation area* • *Soil stockpile areas* The reference to "the eastern portion of the graded pad" on page 2-16 of the PEA should be deleted and replaced with "the boundaries of the expanded substation." The staging area is likely to move within the constraint area during construction, but will not go beyond the boundaries of the expanded substation area. The constraint area includes the entire disturbance area within the expanded substation site, and no set staging area can be identified. The soil stockpile areas will also be constrained to the expanded substation site. Similar to the staging area, over the course of the project, the soil stockpile areas are likely to move within the constraint area, therefore a specific location cannot be identified. • *Temporary shoo-fly pole locations, guard structures, designation of TSPs and LDSPs*

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			• *Temporary shoo-fly pole locations, guard structures, designation of TSPs and LDSPs.* Indicate when preliminary design information will be available so PG&E can provide GIS data for these components. • *Telecommunications locations.* Provide GIS that shows the location of the proposed fiber optic line as described on page 2-10 of the PEA. • *Soil stockpile areas.* PG&E indicated up to 30,000 cubic yards of soil may be imported and that, in general, topsoil would be salvaged and stockpiled. There is a potential that a large area may be needed for soil stockpiling. PG&E should identify where soil would be stockpiled. • *Guy poles.* PG&E stated that it is not yet known whether guy poles will be required. State when PG&E will know whether guy poles will be needed. • *Poles that would be shortened and left in place.* PG&E stated that it is not yet known whether poles would be shortened and left in place for distribution lines. State when PG&E will know whether poles will be shortened and left in place for distribution lines.	These details are anticipated to be determined when further design information is available, likely in the Fall of 2016. PG&E assumes that TSPs will be primarily used for the project. When design information is available, PG&E will determine if any LDSPs will be used. If used, LDSPs typically require less disturbance area than TSPs. • *Telecommunications locations* Detailed information regarding the specifics of the telecommunications locations will not be available until approximately 3 to 4 months after the start of project construction because the vendor (AT&T) will plan and design the fiber optic line. Prompted by the CPUC's deficiency request, PG&E sought additional information from AT&T. AT&T indicated that its new fiber communication cable infrastructure into Sanger Substation would likely be extended from a fiber splice at the intersection of Jensen Avenue and De Wolfe Avenue, approximately two miles west of Sanger Substation. The fiber cable would likely be placed on existing utility poles in an overhead position. Near Sanger Substation, the fiber cable would transition to an underground position, crossing under Jensen Avenue and proceeding into the Sanger Substation. PG&E indicated in the PEA that new telecommunications equipment would follow the path of the existing copper line serving the existing substation. However, AT&T has now indicated that, in an effort to maintain compliance with PG&E's System Protection Requirement for separate communication paths, the new AT&T fiber communication cable would likely enter Sanger Substation on a new/separate path into the MPAC building from the existing AT&T copper communication cable. This information remains preliminary.

PG&E Sanger Substation Expansion Project PEA Deficiencies				
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				• *Guy poles* • *Poles that would be shortened and left in place* When further design information is available during the Fall of 2016, PG&E will be able to provide additional information as to whether these poles will be required as part of the project.
6	PEA page 2-10	PEA Checklist section 3.5.3.1; section V(11) of the Information and Criteria List	**Describe construction methods and operation and maintenance required for the telecommunications component of the proposed project.** In Deficiency Response 1, PG&E's clarified that telecommunications would be a part of the project. PG&E omitted a description of construction methods and operation and maintenance activities for the telecommunications component.	The construction methods for the telecommunications component will not be available until approximately 3 to 4 months after the start of project construction, once the AT&T vendor plans and designs the fiber optic line. Generally, the telecommunications cable would be placed on existing structures using a boom truck and any underground portions would be placed in conduits and trenched and covered with a back-hoe. Operation and maintenance activities would be no different than AT&T's operation and maintenance activities on the existing telecommunications cables.

PG&E Sanger Substation Expansion Project PEA Deficiencies				
No.	*Reference*	*CPUC Requirement*	*Description of Deficiency*	*PG&E Response*
Air Quality				
15	PEA Appendix C	PEA Checklist section 5.3; section V(14) of the Information and Criteria List	**Update Air Quality calculations to use the most recent EMFAC and OFFROAD emission factors. Provide spreadsheets to facilitate CPUC review.** In Deficiency Response 1, PG&E provided updated construction emissions that supersede the information presented in Section 4.3 and Appendix C of the PEA. The information provided presents inconsistencies and/or missing data that needs clarification, as indicated below: • *Offroad Equipment Count.* The 'Offroad Equipment Count' presented in Attachment C of Deficiency Response 1 (PDF pages 15, 55 and 91) shows 6 pieces of equipment for 'Phase 4b-Power line re-route: Install TSP'. This information is inconsistent with Attachment B and Page 12 of Attachment C (both show 7 pieces of equipment for Phase 4-b). Clarify this discrepancy. • *Onroad Vehicles Count.* Attachment C does not list the number of onroad vehicles used to calculate Trips and VMT. Provide the vehicle count for each Phase used in the calculations. Ensure this information is consistent with response to PEA Deficiency No. 22. • *Revised PEA Table 3.3-6.* Provide a revised PEA Table 3.3-6, indicating tons/year emissions.	Updated Air Quality calculations that contain the missing data have been provided as requested by CPUC and described below: • *Offroad Equipment Count:* The discrepancy was due to a CalEEMOD model program issue. The emissions reports were regenerated and the equipment discrepancy issue was resolved. The reports are provided as an attachment (Attachment A). • *Onroad Vehicles Count:* CalEEMOD inputs were revised to be consistent with the vehicle trip by phase information developed in response to PEA Deficiency No. 22. Vehicle count by each phase is included in Table 3.16-3 and in the emissions reports under the "Trips and VMT" section. • *Revised PEA Table 3.3-6:* A revised table is provided as an attachment (Attachment B).

PG&E Sanger Substation Expansion Project PEA Deficiencies				
No.	*Reference*	*CPUC Requirement*	*Description of Deficiency*	*PG&E Response*
Noise				
19	PEA Section 3.12.3	PEA Checklist section 4; section V(12) of the Information and Criteria List	**Provide baseline noise measurements for the project area.** In Deficiency Response 1, PG&E states that background noise levels in the project vicinity fluctuate on a daily and seasonal basis due to the use of agricultural heavy machinery that operates at various times of the year. Page 3.12-10 of the PEA cites the Fresno County Background Report (Fresno County Public Works and Planning Department 2000), which reports equivalent sound pressure levels (Leq) for the Central County area "from high 40s to low 50s". Assuming the Fresno County Background Report provides representative baseline levels for the project, construction noise reported in Tables 3.12-7 and 3.12-8 of the PEA could temporarily exceed ambient noise levels at the closest sensitive receptor (located at 185 feet from the substation site). In order to assess the potential temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the proposed project: • Provide the expected noise reduction from implementation of APM NOI-2 and APM NOI-5. • Clarify if all the equipment listed in Table 3.12-7 of the PEA would be used if nighttime work is needed.	***Provide the expected noise reduction from implementation of APM NOI-2 and APM NOI-5.*** Construction noise, from both stationary and mobile equipment, can be attenuated in two basic ways; controlling a noise source before it is able to emit substantial noise levels and providing distance between the source and nearest sensitive receptor. Noise from a point source, such as grading or construction equipment, can be reduced according to the inverse square law as it propagates outward from its source. As a general rule, noise levels from point sources are reduced by 6 dBA for each doubling of distance. This is the basis for APM NOI-3, which requires that stationary equipment be located as far as practical from sensitive noise receptors. Noise attenuation as it relates to construction equipment (APM NOI-2 and APM NOI-5) is described below. **APM NOI-2. Construction equipment reduction devices.** Exhaust noise is one of the major contributors to noise from vehicles powered by internal combustion engines. For the same power rating, diesel engines are noisier than gasoline engines, since the combustion characteristics of diesel engines produce more harmonics than the slower combustion of gasoline. Mufflers and silencers are commonly used to minimize sound transmission caused by exhaust gases. Mufflers. An un-muffled gasoline engine generates exhaust noise in the range from 90 to 100 dBA while an un-muffled diesel engine under identical conditions radiates exhaust noise in the range from 100 to 125 dBA. Based on studies specifically addressing construction equipment noise, sound attenuation of between 18 to 21 dBA can be obtained from mufflers (Venkanna and Wadawadagi 1999). Silencers. Silencers are a noise abatement device that are typically placed on the inlet or outlet of equipment. It allows

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				the air or other gas to flow freely while providing a reduction in sound levels. Silencers can be designed to meet specific and desired noise levels (dB Noise Reduction 2015). **APM NOI-5. Noise minimization with "quiet" equipment.** According to the U.S. Department of Transportation, the construction equipment type, specific model, equipment condition, and the operation performed influence equipment noise. Because of design improvements and technological advances, newer equipment is generally quieter than old equipment. Newer equipment has better engine mufflers and insulation, refinements in fan design, and improved hydraulic systems. In addition, the use of electric powered equipment is typically quieter than diesel, and hydraulic powered equipment is quieter than pneumatic power (DOT 2015). For example, newer heavy duty diesel generators are designed to emit low noise, with some units up to 15 dBA quieter than older diesel-powered generators and quieter than most gasoline sets. Simple maintenance of equipment can also reduce noise levels by as much as 50 percent (LHSFNA 2015). According to Fresno County Noise Control Ordinance, Section 8.40.30, exterior noise levels at sensitive receptors shall not exceed 50 dBA at 50 feet from the noise source. As shown in Table 3.12-8 in Section 3.12 Noise, at the nearest residence (185 feet from the substation site), maximum noise levels from any single piece of equipment could range from 43 to 74 dBA. Implementation of noise attenuating measures as indicated in APMs NOI-2 and NOI-5 would generally reduce noise by 15 to 21 dBA, depending on the type of attenuation used. Assuming the loudest piece of equipment at 74 dBA, this would result in mitigated noise levels between 53 and 59 dBA at 185 feet at the nearest residence. Since noise reduction also occurs with distance, employing a 6 dBA reduction with each doubling of distance, mitigated noise levels would be between 41 and 47 dBA, which is below the County's threshold of 50

PG&E Sanger Substation Expansion Project PEA Deficiencies				
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				dBA at 50 feet. **References:** dB Noise Reduction. 2015. Frequently Asked Questions. Online at: (http://www.dbnoisereduction.com/whatsetsusapart.php) accessed December 23, 2015. Laborers' Health and Safety Fund of North America (LHSFNA). 2015. *Controlling Noise on Construction Sites.* Online at: (http://www.lhsfna.org/files/bpguide.pdf) accessed December 23, 2015. U.S. Department of Transportation (DOT). 2015. *Effective Noise Control during Nighttime Construction.* Online at: (http://ops.fhwa.dot.gov/wz/workshops/accessible/Schexnayder_paper.htm) accessed December 23, 2015. Venkanna, B. K., & Wadawadagi, Swati B. 1999. Department of Mechanical Engineering, Basaveshwar Engineering College, Bagalkot-587, Karnataka, India. *Experimental Investigations of Noise Attenuation of a Twin Cylinder Stationary Diesel Engine with Different Types of Mufflers.* Online at The American Society of Mechanical Engineers: (http://vibrationacoustics.asmedigitalcollection.asme.org/article.aspx?articleid=1470165) accessed December 23, 2015. ***Clarify if all the equipment listed in Table 3.12-7 of the PEA would be used if nighttime work is needed.*** If nighttime work is required, it is most likely to be limited to testing and line work. No grading equipment or other noise-producing equipment is anticipated to be needed.

PG&E Sanger Substation Expansion Project PEA Deficiencies				
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Utilities and Service Systems				
20	PEA page 3.17-6	Section V(14) of the Information and Criteria List	**Provide more detail about the source of water to be used during construction and provide information about water use during operation.** In Deficiency Response 1, PG&E provided information about the amount of water that would be used during construction and potential source of water for construction. PG&E omitted specific information for certain sources (i.e., "local farmers or other local water purveyors"). PG&E should provide specific information about all purveyors it wishes to use for analysis in the EIR. PG&E also omitted information about water use during operations. PG&E should provide information about water use during operation, including quantity (per year) and source(s).	If the project were underway today, possible water sources would include: landowner of Sunnyside Farms (substation expansion area land owner), other local farmers and water purveyors, the City of Sanger, and the City of Fowler. However, future sources may be available or be subject to change when the project goes into construction in 2018. Over the past few years, PG&E has secured water use agreements in the area for other projects from Fowler Packing and the City of Fowler. The City of Fowler has hydrant meters that would allow PG&E to fill water trucks/tanks at a per gallon cost, then transport to the project site. Similar water use agreements are considered to be a potential option for this project as well. The existing substation does not require water for operation, and neither will the expanded substation.

PG&E Sanger Substation Expansion Project PEA Deficiencies				
No.	*Reference*	*CPUC Requirement*	*Description of Deficiency*	*PG&E Response*
Traffic and Transportation				
22	PEA Table 3.16-3, section 3.1.4.3, page 2-22	PEA Checklist section 3.7.5, 5.15; section V(14) of the Information and Criteria List	**Provide more detail regarding trip generation during AM and PM peak hours.** In Deficiency Response 1, PG&E provided a revised text and transportation table (Attachment E) that replaces text in Section 3.16 and data in Table 3.16-3 of the PEA. The information provided needs clarification, as indicated below: • (1) Clarify the total maximum number of daily trips for the project, and maximum number of daily trips for Worker Trips, Construction Equipment Trips, and Other Construction Support Trucks. • (2) Assumptions listed at the end of the Revised Sanger Substation Transportation Table indicate Phases 4a, 4b, 4c, and 4d would be performed in parallel with Phase 3. Clarify if all worker trips presented in the Revised Sanger Transportation Table for these phases are cumulative. The table provided in Attachment E currently looks as though there could be 120 daily workers if these phases happened concurrently, but the text indicates the project would have a maximum of 30 daily workers. • (3) Assumptions listed at the end of the Revised Sanger Substation Transportation Table indicate that Total Equipment-related Delivery/Removal Trips = (No. of Trucks to Deliver Equipment x No. of Work Days); however these do not appear to add up (ex. Phase 1: 9 Trucks to deliver Equipment x 1	Some of the information requested was previously provided in the table submitted as part of the first deficiency letter response. For other questions, the table has been updated and is provided as an attachment (Attachment C). The changes made are as follows: (1) The total maximum number of daily trips for the project is provided in the "Total Maximum Daily Trips" row of the attached Table 3.16-3: Estimated Truck Trips. The maximum number of daily trips for Worker Trips was provided in the previous submittal, in the "Daily Worker Trips" row. The Construction Equipment Trips has been updated in the "Total Construction Equipment Truck Trips" row of the attached table. Other Construction Support Trucks was provided in the previous submittal in the "Other Construction Support Trucks" row. (2) The table footnote #1 on the attached table has been revised to clarify language and assumptions of how many workers will be onsite at any given time. Work for Phases 4a-4d will be performed in parallel with Phase 3; therefore, it is anticipated that some workers included in Phase 3 construction would be tasked with completing the actions necessary for Phases 4a-4d. There would be no more than 30 workers total onsite at any given time. (3) It would be 18 if counting coming and going from the site as individual truck trips, which is the method used for all other daily trip calculations specified in the table. As specified in the first three lines of the "Construction Equipment Trips" section of the table, a total of 9 trucks would be making a trip to the project site. Each of the 9 trucks would drop off equipment and leave the site to go home for a total of 9 truck trips there and 9 truck trips home, which equals 18 daily truck trips. These round trips would be made in one day, per the table.

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			work day = 9 trips, not 18). Clarify if there would be 2 truck trips (for dropping off equipment and leaving site) for 9 days, or 18 truck trips for 1 day. • (4) Assumptions indicate that all equipment dropped off during Phases 1-5, would be removed at the end of Phase 5, but it is not clear from the table how the daily trips and total trips during Phase 5 were determined.	(4) See footnotes #5, 6, and 7 on the attached table. It is assumed that most equipment would be hauled to the site by trucks that would then leave the equipment onsite for the duration of construction. Some trucks that would be required for multiple phases, such as rigging trucks, are assumed to remain onsite and would not be running back and forth from the site to home. The numbers used were derived from the Construction Equipment and Schedule by Phase table previously provided by PG&E in the response to the first deficiency in November. For the "No. of Trucks to Deliver Equipment" row of the attached table, heavy trucks (2-60 tons) (e.g., flatbeds, semi tractor-trailers) would move necessary construction equipment to the work site then return to haul equipment away after construction. It is assumed that equipment from previous phases would remain onsite throughout construction (Equipment Removal/Cleanup phase). The number of trucks per phase assumes that the equipment delivered to the project site for site grading and access would be used for other construction phases; thus, no additional truck trips would be necessary. The number of trucks to deliver equipment shown in the attached table are not cumulative. For Phase 5, the total number of trucks that would access the project site would include two trucks to drop off new equipment and 12 trucks to return to the site to pick up equipment that remained onsite during construction activities associated with previous phases.