Pacific Gas and Electric

Missouri Flat-Gold Hill 115 kV Power Line Reconductoring Project

Response to Data Request No.2

Below are responses to Data Request No.2 submitted by the California Public Utilities Commission ("CPUC") dated February 12, 2014, regarding the Proponent's Environmental Assessment ("PEA") prepared for the Missouri Flat-Gold Hill 115 kV Power Line Reconductoring Project (the "project"). Each CPUC data request is organized by PEA Chapter, set forth in italics and followed by PG&E's response.

This document includes the following attachments, which are described in more detail in the text below under the applicable response.

Attachment A: Description of Temporary Line Poles at Clarksville Substation
Attachment B: PEA Tree Count/Brush Unit Summary Estimate

I. Chapter 2: Project Description

1. *The PEA states the Missouri Flat-Gold Hill Line crosses U.S. Highway 50 at five (5) locations and the Gold Hill No. 1 Line crosses the highway at two (2) locations. The PEA indicates that road closures or a rolling stop would be arranged during reconductoring activities for any locations where lines cross over roads. Any road closures that occur on private or county roads would typically not exceed a few minutes and would be coordinated with the county or landowner. Crews may also need to access mid-span locations to avoid conductor breakage during pulling operations. These locations may be accessed by truck, helicopter, or foot depending on site conditions at the time of construction. The PEA also indicates that crossing structures would be installed where the project alignment crosses over major roads, such as Highway 50, to allow traffic to safely use the road while PG&E removes the existing conductor and pulls the new conductor into place. Temporary road closures would be required at various locations to ensure public safety.*

   Regarding the crossings of Highway 50 proposed by the project, please provide the following:

   i. *Confirm that the number of crossings described in the PEA is accurate.*

   ii. *Indicate whether the project would require the closure of Highway 50 at any of the proposed seven (7) crossing locations, and if so, which ones.*

   iii. *If closure is required, indicate the anticipated duration of closure as well as the time of day.*

   iv. *If closure is required, have alternative routes for emergency and non-emergency vehicles been identified?*

v. Indicate whether a helicopter would be necessary to access mid-span locations during pulling operations over Highway 50, or at any other location. If helicopter use is anticipated describe the anticipated level of use including duration.

PG&E Response: Responses for questions *i.* through *v.* are provided below.

i. The number of crossings described in the PEA is accurate.

ii. The project would not require closure of Highway 50 at any of the proposed seven crossing locations.

iii. Not applicable.

iv. Not applicable.

v. A helicopter would not be necessary to access mid-span locations during pulling operations over Highway 50, or at any other mid-span location. Helicopter operations would be limited to those described in the PEA.

2. *Please indicate the width of the proposed new 100-foot-long unpaved spur road near the intersection of Finders Way and Saratoga Way in El Dorado Hills.*

PG&E Response: The 100-foot-long unpaved spur road near the intersection of Finders Way and Saratoga Way in El Dorado Hills is anticipated to be between 12-18 feet wide. The study area used in the PEA accounted for a potential disturbance area of up to 18 feet for all access roads. Note that, during our review of the Project Description, we will add this fact to the footnote to Table 2.1 regarding the potential width of all access roads. For roads outside of the Pine Hill Preserve, a width of up to 18-feet may be required to accommodate the turning radius on larger vehicles. All roads within the Pine Hill Preserve will be limited to a width of 12-feet.

3. *Please indicate if the temporary line poles proposed at the Shingle Springs, Pacific Western Pipe, CPM tap, and Gold Hill Substations would be located entirely or partially within the substations' boundary.*

PG&E Response: Temporary line poles proposed at the Shingle Springs, Pacific Western Pipe, CPM Tap, and Gold Hill Substations would be located within and, in some instances, immediately outside substation boundaries. All temporary poles would be located within the study area and within the disturbance footprint analyzed in the PEA.

As indicated during a conference call with CPUC staff and consultants on February 13, 2014, PG&E identified the need for additional temporary line poles at the Clarksville Substation after submittal of the PEA. The temporary poles are described in Attachment A to this response, which also includes a markup of the PEA Project Description identifying the small text changes necessary to add the temporary line. As is the case with the aforementioned temporary line poles at the Shingle Springs, Pacific Western Pipe, CPM Tap, and Gold Hill Substations, the temporary line poles proposed at the Clarksville Substation would be located within the study area and the disturbance footprint analyzed in the PEA. The addition of the new temporary line poles at the Clarksville Substation would not change any analyses or conclusions in the PEA.

4. *Regarding portable washing stations used during concrete pour, the PEA states that washed materials would be contained and disposed of properly. Please describe how materials would be disposed.*

PG&E Response: As stated on PEA page 2-27, excess construction materials will be transported to an area service center or other appropriate facility for disposal in accordance with applicable laws. Washed materials are typically allowed to dry before transport and disposal.

5. *PG&E previously provided information regarding the types and sizes of trees proposed for removal in the Response to PEA Review and Deficiency Letter, Response #14. Is this information based on actual tree survey data? If so, please provide a copy of the survey.*

PG&E Response: The previously provided information was based on a field survey that was conducted to estimate the number of trees and area of brush that may be removed as a part of the project. The survey was conducted in June 2013, and the results are included as Attachment B to this response. Please note that vegetation conditions in the project area fluctuate and may have changed somewhat since that time as a result of natural growth and regularly-scheduled vegetation management. All information on vegetation removal is therefore based on estimates and is subject to changing conditions.

6. *For project construction, please populate the table below as available. For "Estimated Schedule," please provide dates for the three primary project components: Missouri Flat-Gold Hill Line Reconductoring, Gold Hill No. 1 Line Reconductoring, and Substation Modifications.*

PG&E Response: The populated table is provided below.

Proposed Construction Timetable				
Project Component	**Length**	**Duration (months)**	**Approximate Progression Rate (feet per week)**	**Estimated Schedule (based on summer 2015 start date)**
Missouri Flat-Gold Hill Line Reconductoring	**12.5 miles**	**18**	**2,500**	**10/15-6/17**
Establish staging areas Road construction	N/A	8	N/A	
Modifying approximately 13 existing lattice steel towers	2.9 miles	7	561	
Replace approximately 60 existing TSPs	9.6 miles	9	1,310	
Access road construction	100 feet	8	N/A	
Distribution line undergrounding	1,000 feet	4	N/A	
Gold Hill No. 1 Line Reconductoring	**7 miles**	**6**	**1,540**	**10/15-4/16**
Establish staging areas Road construction	N/A	2	N/A	
Replace 80 existing wood poles / modify 40 existing poles	7 miles	6	1,540	
Distribution feeder line relocation	150 feet	2	N/A	
Substation Modifications	**NA**	**8**	**NA**	**4/16-12/16**

Attachment A
Temporary Line at Clarksville Substation

After submittal of the PEA, PG&E identified the need for a temporary line at Clarksville Substation to accommodate required line outages during construction (referred to as a "shoofly"). The shoofly would require installation of up to approximately 20 temporary wood poles that could range in height from approximately 45 to 90 feet. The most likely shoofly configuration at Clarksville Substation would involve temporary installation of 1-2 wood poles of up to 90 feet. It is possible that additional temporary wood poles (up to approximately 20) may be installed around Clarksville Substation if an alternative configuration becomes necessary.

All poles associated with the temporary line would be located within the study area and the disturbance footprint analyzed the PEA. The addition of the new temporary line poles at Clarksville Substation is considered a minor addition to the project description and would not change any analyses or conclusions in the PEA. Revisions to PEA Chapter 2, Project Description, that would be required for the addition of the temporary line at Clarksville Substation are provided below as bolded and struck-out text.

Proposed Text Changes to the PEA Project Description

The second paragraph under Section 2.6.2 on PEA page 2-10 is revised as follows:

2.6.2 Structures

The project will include modifying existing lattice steel towers and replacing TSPs along the Missouri Flat-Gold Hill Line, as well as replacing existing wood poles with new wood or LDS poles and approximately one TSP along the Gold Hill No. 1 Line. Approximately seven interset wood or LDS poles will also be installed along the Gold Hill No. 1 Line.

Temporary wood poles will also be installed to accommodate various construction activities. Guard structures consisting of temporary wood poles will be installed to establish conductor-stringing guard structures for safety at various locations along the project alignment, including public road crossings and crossings with other utility lines. Snub poles, which are temporary wood poles used to facilitate pulling operations, may be required at each pull site where the conductor cannot be attached directly to the structure because of structure design. Wood pole structures also will be installed to establish temporary lines at ~~four~~ **five** locations—Shingle Springs Substation, the private CPM tap, Pacific Western Pipe Substation, **Clarksville Substation,** and Gold Hill Substation—during construction.

The second paragraph on PEA page 2-16 is revised as follows:

Temporary Line Poles

~~Four~~ **Five** temporary lines are planned as part of the project to accommodate required line outages during construction. Specifically, temporary lines will be installed at Shingle Springs Substation, Pacific Western Pipe Substation, the private CPM tap, **Clarksville Substation,** and Gold Hill Substation, as all of these facilities must remain energized throughout construction. The temporary lines will be supported by wood poles and three-pole wood structures that will be guyed for stability and range in height from approximately 40 to 65, **with the exception of the temporary line at Clarksville Substation, which may be up to approximately 90 feet in height**. Drawings of a typical wood pole and three-pole structure are provided in Figure 2-4:

Typical Wood or LDS Pole Drawing and Figure 2-5: Typical Three-Pole Structure Drawing, respectively.

Table 2-2 on PEA page 2-26 is revised as follows:

Table Error! No text of specified style in document.**-1: Summary of Typical Structure Dimensions**

Structure Feature	Structure Type	Approximate Metrics
Pole Diameter	TSP	30 inches to 50 inches
	Wood and LDS Pole	1 to 2 feet
	Temporary Wood Pole	16 to 24 inches
	Lattice Steel Tower	Not Applicable (NA)
Auger Hole Depth	TSP	19 to 24 feet
	Wood and LDS Pole	7 to 10 feet
	Temporary Wood Pole	6.5 to 16 feet
	Lattice Steel Tower	NA
Footprint (Permanent and Temporary)	TSP	5 to 8 square feet (permanent)
	Wood and LDS Pole	1 to 3 square feet (permanent)
	Temporary Wood Pole	1 to 3 square feet (temporary)
	Lattice Steel Tower	600 to 800 square feet (permanent)
Number of Poles/Towers	TSP	60
	Wood and LDS Pole	122
	Temporary Wood Pole	~~301~~ **321**
	Lattice Steel Tower	13
Average Pole/Tower Work Area	TSP	0.3 acre
	Wood and LDS Pole	0.05 acre
	Temporary Wood Pole	0.06 acre
	Lattice Steel Tower	0.3 acre
Approximate Total New Permanent Pole/Tower Footprint Acreage[1]		*0.002 acre*
Notes: [1] Because the project involves replacement of existing structures at an approximately one-to-one ratio, the total permanent pole/tower footprint acreage includes the permanent footprints for new additional structures only.		

Section 2.8.8.4 on PEA page 2-29 is revised as follows:

Comment [SS1]: The revision below is optional for inclusion. We discovered this in our review of the project description as an appropriate revision to account for temporary poles. Please delete or include at your discretion.

2.8.8.4 Conductor Installation

*Temporary Guard Structures, ~~and~~ Snub Poles, **and Temporary Line Structures***

To facilitate conductor installation, ~~two~~ **three** types of temporary wood poles will be installed—guard structures and snub poles.

- **Guard Structures.** Guard structures will be installed alongside roadways or at utility crossings to prevent conductor from sagging or falling into traveled lanes or into contact with other utility lines if the conductor loses tension during reconductoring activities. As

such, guard structures will be installed at crossing locations before conductor pulling activities begin. The structures typically consist of paired, single-Y configured pole structures or paired wood poles with cross bracing designed to catch falling conductor; a network of cables and netting may also be tied onto these poles. An approximately 40-by 40-foot work area will be used to install the guard structures. Final design will determine guard structure work area locations. Guard structures will be installed from paved roads whenever possible, and will be located along roadsides in disturbed areas, causing relatively limited disturbance. Where this is not feasible, guard structure sites will be accessed by existing dirt roads and structures will be installed in a way that minimizes soil disturbance. As an alternative to the installation of guard structures, line or bucket trucks may be staged at crossings. PG&E will obtain any necessary city, county, or state encroachment permits.

- **Snub Poles.** Snub poles, which are single wood poles, will be used to facilitate pulling operations. Up to two poles will be installed at pull sites where the conductor cannot be directly attached to the structure because of structure design.

- **Temporary Line Structures. Wood pole structures, including single poles and three-pole structures with guys for stability, will be installed to establish temporary lines during construction. These temporary lines will support facilities that must remain energized throughout construction.**

Attachment B

Missouri Flat-Gold Hill 115 kV Power Line Reconductoring Project
First Draft PEA Tree Count / Brush Unit Summary Estimate
June 2013

Tree Species	***Diameter at Breast Height (DBH) Classes***				***Tree Totals***
	4-11.9 inches	***12-23.9 inches***	***24-35.9 inches***	***36 + inches***	
Valley Oak	16	5	9	4	34
Live Oak	49	10	2	2	63
Blue Oak		5	13	5	23
CA Black Oak	3		1		4
Red Oak		1			1
Foothill Pine	14	20	1		35
Pine	2	6	1		9
Cottonwood	1	4	1		6
Willow			1		1
Sycamore		2			2
Redwood		14			14
Other	16	7	1		24
Tree Totals	101	74	30	11	216
*Brush**	113,550 ft^2				

*Brush <4 inches DBH includes: Pine, Oak, Poison Oak, Cercis, Coyotebrush, Toyon, Manzanita and others.