

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



February 21, 2018

Jamie Dean, AICP
Senior Land Planner
Pacific Gas & Electric
Environmental Management - Transmission
245 Market Street, Room 1072A
San Francisco, CA 94105

RE: Windsor Substation Project: Minor Project Change #12

Dear Ms. Dean,

On February 13, 2018, Pacific Gas and Electric Company (PG&E) submitted Minor Project Change #12 request for the use of a drone to facilitate installing the new distribution underbuild on the Fulton No. 1 60 kV line in support of the Windsor Substation Project in the Town of Windsor, California.

The CPUC voted on April 3, 2014 to approve the PG&E Windsor Substation Project (Decision D.14-03-031) and a Notice of Determination was submitted to the State Clearinghouse (SCH# 2013072033).

The CPUC also adopted a Mitigation, Monitoring, Compliance and Reporting Program (MMCRP) to ensure compliance with all mitigation measures imposed on the Windsor Substation Project during implementation. The MMCRP acknowledges that the Mitigated Negative Declaration (MND) for the Project was based on preliminary designs and minor changes may be necessary to complete construction, such as final engineering refinements. The MMCRP also acknowledges that changes are anticipated and common practice for construction efforts of this scale and that a Minor Project Change request would be required for these activities. This letter documents the CPUC's thorough evaluation of all activities covered in this Minor Project Change, and that no new impacts or increase in impact severity would result from the requested Minor Project Change activities.

Minor Project Changes are reviewed for consistency with CEQA requirements and are located within the geographic boundary of the project study area. Minor Project Changes do not create new or substantially more severe significant impacts, or conflict with any mitigation measure or applicable law or policy. Also, they do not trigger other permit requirements unless the appropriate agency has approved the change, and clearly and strictly comply with the intent of the mitigation measure or applicable law or policy.

Minor Project Change #12 for the use of a drone to facilitate installing the new distribution underbuild on the Fulton No. 1 60 kV line in support of the Windsor Substation Project is granted by CPUC based on the factors described below.

PG&E Minor Project Change Request. Excerpts from the PG&E Revised Minor Project Change request, received February 13, 2018, are presented below (indented [brackets for clarifications]):

The Final MND for the project states that increasing the distribution capacity from the new substation will require installing two, 12 kV underbuilt distribution circuits on the Fulton No. 1 60 kV line (Section 4.12 Reconductoring of Distribution Line and Power Line Underbuild). Currently, the Fulton No. 1 60 kV line consists of a 60 kV line with a 12 kV underbuild; the second 12 kV underbuild will be installed between the two existing lines. To install the new

12 kV line, PG&E proposes to use a small, approximately 24" [inch] by 24" [inch] by 12" [inch] drone instead of ground equipment to pull a string between the poles, which will then pull the sock line into place.

The drone will be used to install the new distribution line on the entire length of the project along the Fulton No. 1 60 kV line, divided into approximately three sections. It is anticipated that the drone will be used approximately four hours per section, flying three times in each section as it pulls a string into place for each of the three wires to be installed. Use of the drone avoids extensive labor and several customer outages in comparison to stringing the sock line by traditional methods, which would involve multiple days walking the alignment, crossing through yards, dragging rope, and throwing rope over obstacles.

The flight path will include flying over the backyards of residences where there is no vehicle access between poles. As described further below, multiple spotters will monitor the drone to ensure line of sight is maintained and to avoid flying over people. The landing zones for the drone will be within PG&E's alignment for the Fulton No. 1 60 kV line or along the railroad tracks where the pilot is positioned.

As noted in the specifications below, the drone is battery powered and would not generate emissions. In terms of noise, the drone will generate no more than 56 decibels (dBA) at 50 feet, which is comparable to the typical noise level of a pick-up truck or line truck and trailer and is below the 70 dBA in the Town of Windsor General Plan Noise Element considered "conditionally acceptable" for residential areas.

The drone proposed to be used on the Windsor Substation Project has been custom built from a DAYA 550/model 550 drone. The specifications of the drone that will be used are as follows:

- Type – Quadrotor (X)
- Size – approximately 24"W by 24"L by 12"H
- Power system – 11.1v (3s) lithium polymer batteries
- Control system – 2.4GHz spread spectrum transmitter
- Video System – 5.8GHz 7 channel receiver and 200mW transmitter
- Range – 2,000 feet horizontal (limited by video feed)
- Flight controller – DJI NAZA V2 with GPS, failsafe, on-screen telemetry and geo-fencing
- Maximum speed – 26 mph
- Maximum altitude – 400-foot aboveground-level (set and verified before takeoff with software-based geo-fencing)
- Approximate total weight – 9.8 pounds when loaded with string
- Payload – 600 feet of 140-pound test string or 1,250 feet of 40-pound test string

The drone will be operated by a Federal Aviation Administration (FAA)-licensed operator/person-in-charge (PIC), in compliance with the FAA requirements for unmanned aircraft, Summary of Small Unmanned Aircraft Rule (Part 107), and the measures listed below.

- All flights will be conducted by the PIC manipulating the drone controls.
- A clear line of sight between the PIC and the drone will be maintained at all times. For portions of the alignment, this line of sight will be from the railroad tracks, which parallel the alignment.
- A minimum of two spotters will walk the flight path of the drone during its use to ensure the drone does not fly over people and also to ensure expedient action in the event of any unanticipated issues. Spotters will be positioned at each pole location as well as mid-span and anywhere there is a possible viewing obstruction. Furthermore, spotters will be placed in aerial lifts to get an elevated view of areas that may not be viewed from ground.
- When the drone must be reloaded with string, a member of the flight team will be present for the landing of the drone and to facilitate reloading.

- The flight path includes crossing on road (Starr Road). Flaggers will be used to briefly stop vehicle traffic when the drone is crossing the road, just as would be done with a manned helicopter.

This minor project refinement does not involve substantial changes to the project or project circumstances as described in the Final MND, and will reduce the project's already less-than-significant construction impacts from those analyzed in the IS/MND. It will not result in new significant environmental effects or a substantial increase in the severity of previously identified impacts.

CPUC Evaluation of Minor Project Change Request

In accordance with the MMCRRP, the subject Minor Project Change request was reviewed by CPUC to confirm that no new impacts or increase in impact severity would result from the requested Minor Project Change activities, and that the subject request was within the geographic boundary of the Project study area. The following discussion summarizes this analysis for air quality, biological, cultural, paleontological, and hydrological resources, and sensitive land uses/noise. A list of bulleted conditions is presented to define additional information and clarifications regarding mitigation requirements. In some cases, these items exceed the requirements of the Mitigation Measures (MMs) and Applicant Proposed Measures (APMs), and are based on specific site conditions and/or are proposed conditions by PG&E.

Air Quality: The drone is battery powered and would not generate emissions; therefore, no impacts to air quality would occur.

Biological Resources: The use of the drone would not cause any earth disturbing activities that could impact biological resources. Nesting birds could be impacted by the use of the drone; however, with the implementation of Applicant Proposed Measures (APMs) BIO-1 (special-status species/sensitive habitat worker education program), APM BIO-3 (worker educational brochure), APM BIO-4 (preconstruction wildlife survey prior to the start of construction), and Mitigation Measures (MMs) B-1 (environmental training, preconstruction surveys, and biological resources monitoring), and MM B-4 (protect nesting birds) impacts to nesting birds would be avoided.

Cultural and Paleontological Resources: The use of the drone would not cause any earth disturbance activities; therefore, no impacts would occur to cultural or paleontological resources.

Hazards and Hazardous Materials. A Hazardous Substance Control and Emergency Response Plan was submitted with NTP Request #1, which was reviewed and approved by the CPUC on June 8, 2016. The Plan prescribes hazardous material handling procedures to reduce the potential for a spill during construction or exposure of the workers or public to a hazardous material. The Plan provides a discussion of appropriate response actions in the event hazardous materials are released or encountered during field activities. No new or increased impacts to hazards or hazardous materials would occur with the use of the drone.

Hydrology and Water Quality. The drone is battery powered, so no additional use of hazardous materials would be required. No new or increased impacts to hydrology or water quality would occur with the use of the drone.

Sensitive Land Uses/Noise. Reconductoring of the distribution line along the Fulton No. 1 line includes lands zoned primarily as Surrounding Residential, with portions of the line being adjacent to lands zoned as Estate Residential and Planned Development to the west and Service Commercial, Public Institutional, Medium Density Residential, and Village Residential to the east. Construction notifications have been provided to the public prior to the start of construction along with contact information for complaints related to construction

activities. The drone will generate no more than 56 decibels (dBA) at 50 feet, which is comparable to the typical noise level of a pick-up truck or line truck and trailer and is below the 70 dBA in the Town of Windsor General Plan Noise Element considered “conditionally acceptable” for residential areas. Therefore, no new or increased impacts to sensitive land uses from noise would occur.

Traffic/Public Safety: Multiple spotters will monitor the drone to ensure line of sight is maintained and to avoid flying over people. The landing zones for the drone will be within PG&E’s alignment for the Fulton No. 1 60 kV line or along the railroad tracks where the pilot is positioned. Flaggers will be used to briefly stop vehicle traffic when the drone is crossing Starr Road, just as would be done with a manned helicopter; therefore, no new or increased impacts to traffic or public safety would occur.

The conditions noted below shall be met by PG&E and its contractors:

- All applicable Project MMs, APMs, compliance plans, and permit conditions shall be implemented. Some measures have on-going/time-sensitive requirements and shall be implemented prior to and during construction where applicable.
- Copies of all relevant permits, compliance plans, and this Minor Project Change shall be available on site for the duration of construction activities. All permits and plans shall be made available to the CPUC EM upon request.
- All crew members shall be WEAP trained prior to working on the Project as described by APMs BIO-1, BIO-3, CU-1, HM-3, and WQ-3, and MM B-1. A log shall be maintained on-site with the names of all crew personnel trained. The WEAP training brochure can be provided in Spanish or other languages if appropriate. All participants will receive a hard-hat sticker for ease of compliance verification.
- No movement or staging of construction vehicles or equipment shall be allowed outside of the approved areas. If additional temporary workspace areas or access routes, or changes in technique and mitigation implementation to a lesser level are required, a Minor Project Change request shall be submitted for CPUC review.

Sincerely,



Eric Chiang
CPUC Environmental Project Manager

cc: V. Strong, Aspen