

PUBLIC UTILITIES COMMISSION

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April 7, 2015

Robert Donovan
Senior Land Planner
Pacific Gas & Electric
Environmental Management - Transmission
245 Market Street, N10A
San Francisco, CA 94105

RE: Embarcadero-Potrero 230 kV Transmission Project (E-P): Notice to Proceed #6

Dear Mr. Donovan,

On February 19, 2015, Pacific Gas and Electric Company (PG&E) submitted a Notice to Proceed request to the California Public Utilities Commission (CPUC) for the submarine cable installation component of the Embarcadero-Potrero 230 kV Transmission Project in the San Francisco Bay, in the City of San Francisco, San Francisco County, California.

The PG&E Embarcadero – Potrero 230 kV Transmission Project was evaluated in accordance with the California Environmental Quality Act (CEQA). The mitigation measures and applicant-proposed measures (APMs) described in the Final Mitigated Negative Declaration (MND) were adopted by the CPUC as conditions of project approvals. The CPUC also adopted a Mitigation, Monitoring, Compliance and Reporting Program (MMCRP) to ensure compliance with all mitigation measures imposed on the Embarcadero – Potrero 230 kV Transmission Project during implementation. The CPUC voted on January 16, 2014 to approve the Final MND for the PG&E Embarcadero – Potrero 230 kV Transmission Project (Decision D.14-01-007) and a Notice of Determination was submitted to the State Clearinghouse (SCH#2013082047).

The Embarcadero – Potrero Project will be constructed in 6 phases and NTPs will be issued for each phase. This is a typical process for transmission line projects. Given that the Embarcadero – Potrero Project has been approved by the CPUC, as described above, this phased construction review process allows PG&E to proceed with individual project components where compliance with all applicable mitigation measures and conditions can be documented.

This letter documents the CPUC's thorough evaluation of all activities covered in this NTP, including the mitigation compliance table provided with the subject NTPR. The evaluation process ensures that all mitigation measures applicable to the location and activities covered in the NTP are implemented, as required in the CPUC's Decision.

NTP #6 for the submarine cable installation component of the Embarcadero- Potrero 230 kV Transmission Project is granted by the CPUC based on the factors described below.

PG&E NTP Request

The CPUC has carefully reviewed the NTP request (NTPR) submitted by PG&E, and verified that it incorporates compliance with all applicable mitigation measures and APMs. Excerpts from the PG&E NTPR dated February 19, 2015 are presented as follows (indented):

As previously discussed with CPUC, PG&E intends to construct the project in several phases to coincide with construction phasing, environmental restrictions, and implementation of the pre-construction mitigation measures. This sixth Notice to Proceed (NTP) is being sought for the submarine cable installation component of the project. Laying of the submarine cable includes site preparation for the submarine cable installation, laying the cable, and pulling the cable to land at either end, beginning in June 2015. A grapnel run will be completed to further clear the pathway of the hydroplow, then the hydroplow will be used to install each of three submarine cable circuits. Each of the submarine cables will be directly buried using a hydroplow into the bay floor to a depth of approximately 6 to 10 feet below the bay floor.

The water depth increases to 80 feet east of Piers 28 and 30/32 where the exit pits are already excavated. The water depth slopes gradually to 35-40 feet at the southern HDD exit location. The conduit has been installed to the exit pits under the previous NTP 2.

A barge or vessel will tow the hydroplow, a water jet that consists of a long blade mounted to a sled-mounted submerged vehicle. The hydroplow blade contains water nozzles on the leading edge that fluidize the sediment using high-pressure water. Water pumps utilize water from the bay to the plow for jetting. The water pump intakes will be equipped with a fish screen meeting CDFW standards.

In addition, submarine-cable related activities are as described in the MND pages 4-59 to 4-63, and include:

- Pulling the submarine cables back through the HDPE pipes and then into the splice vaults.
- Splicing the submarine cable to the underground land cable in the splice vaults.

Equipment anticipated to be used as part of the submarine cable installation include:

- Cable Lay Barge
 - The cable lay barge is to be determined/vessel of opportunity located in the West coast Area/Approximate size 180' X 60' X 12' with a 150+ ton crawler crane, a 75+ ton rough terrain crane, 90' spuds, and a 4 point mooring winch system. See Appendix A.1, Figure 1 for general layout and Appendices A.16 and A.17 for crane specifications.
- Main Support Tug
 - To be determined / Vessel of opportunity located in the San Francisco Bay Area / Min. length 55' @ 1000 hp Min / twin engine / 50,000 lb. towing winch Cable Lay Barge
- Aux Support Tug
 - To be determined / Vessel of opportunity located in the San Francisco Bay Area / Min. length 45' @ 800 hp Min / twin engine
- Survey Boat
 - To be determined / Vessel of opportunity located in the San Francisco Bay Area / Min. length 24'
- Work Skiffs
 - Two (2) 24' minimum / Durocher Marine
- Anchor Winches
 - Two (2) RB 90 twin drum / Rasmussen Equipment V-653 Detroit Diesel Engine. See Figure 2. Amsteel Blue rope will be used as the tow line material. The specifications for Amsteel Blue rope can

be found in Appendix A.11, Figure 20. Calculations for the amount of winch wire that can be installed on the drum are provided in Appendix C.3.

- Anchors, Fairleads & Sheaves
 - Four (4) 1 ½" Balances Fairleads, Two (2) Vertical Sheaves, Four (4) Horizontal Sheaves and Four (4) – 8000 lb. anchors
- Barge Generator 250 kw / Local Rental
- Aux Barge Generator 100 kW / Local Rental
- Running Line Tensionmeter
 - 0 to 90k for plow tow wire with digital readout and output to plow control computer software. See Figure 3 for specifications and Figure 4 for a photo.
- ROV System
 - Light Duty Inspection Class equipped with color video camera, VCR and 1000' umbilical
- Applanix POS MV Differential Global Positioning System.
- Hypack Navigation Software
- LinkQuest TrackLink 1500USBL Acoustic Tracking System.
 - See Figures 41 & 42.
- GS2500 Cable Toner and Detection System
- BlueView High Resolution 2D Forward Looking Sonar- Barge mounted for viewing of cable catenary and water jet plow pull wire. See appendix A.21.
- BlueView High Resolution 2D Forward Looking Sonar- Water jet plow mounted for viewing of cable catenary, water jet plow pull wire, and obstacle avoidance. See appendix A.21.
- Foreman's Tool Container
 - An 8' X 8' X 20' Durocher Marine shipping container outfitted with small tools, safety equipment, communications, survey equipment and an office area.
- Rigging Container
 - An 8' X 8' X 20' Durocher Marine shipping container for storing spill clean-up kit, rigging and tools.
- Office Trailer
 - Two 10' X 30' rental office trailers for crew and client.
- Cable Container
 - The cable container supplied by J-Power Systems is 31.2' in diameter X 12.8' high. The following weights are provided by J-Power Systems:
 - 36.1 tons (72,200 pounds) – Weight of empty cable container
 - 276.1 tons (552,200 pounds) – Weight of power cable
 - 312.2 tons (624,400 pounds) – Weight of container with power cable
 - See Figure 5.
- Cable Pan Turntable
 - Durocher Marine's cable pan turntable and pickup arm with roller system has a capacity of 750 tons. See Figures 5 & 6 for plan and profile views. Figure 8 also shows a photograph of the turntable.
- Turntable Snorkel
 - The Durocher Marine snorkel will be used to transfer the submersible power cable from the cable container to the linear cable engines on the cable highway. See Appendix A.18, Figures 36-40.
- Linear Cable Engine (LCE)
 - Each of Durocher Marine's three LCE's each having a 6,000 lb. line pull capacity and are powered by a 60 HP diesel engine. See Figures 9 and 10. Allowable side wall pressure is 1,000Lb(500kg)/tire.

- Cable Over-boarding Chute
 - Durocher Marine provided chute is 12' radius 90° / tension monitor / angle meter. Tension is measured by the over-boarding chute utilizing load pins in the supporting frame and angle is measured by the inclinometer sensor. See Figure 19.
- Miscellaneous Cable Equipment
 - Durocher Marine to provide miscellaneous cable equipment including quadrants, rollers, stoppers, etc.
- Cable Floats
 - Cable floats will be constant buoyancy type. See Appendix A.12 for specifications on rigid floats (45 pounds of buoyance) and photos of inflatable floats (250 pounds of buoyancy) used on previous projects (Figures 21-23).
- Water Jet Plow
 - ETA "Sea Venture I" water jet plow with pump/ 0' to 10' burial depth. Provided by Durocher Marine. See Appendix A.7 for Figures 11-15.
- Cable Plow Electronics
 - The cable plow electronics and control system were developed in house by Kokosing Construction. Real time data is logged during cable lay operations. See Table 1 and Figure 16.
- Cable Plow Control
 - The water jet plow control and instrumentation was developed by ETA Systems Engineering Technology Associates. They are the designers of the water jet plow.
- Pump for Cable Plow
 - The cable plow requires a rental pump similar to a Godwin HL225M Dri-Prime pump – 10" X 8" 3,600 gpm. See Appendix A.9, Figures 17 & 18.
- Dive Support Equipment
 - Durocher Marine will provide an air package (to 120') including decompression chamber.
- Land-based Winch Truck
 - A 60,000 lb. minimum line pull truck will be used for pulling the submersible power cable into shore. A typical truck is shown in Appendix A.14, Figure 25.
- Fiber Optic Cable LBE
 - A separate linear belt engine will be used to control the payoff of the fiber optic cable. A single engine will provide 6,000 lb. of pulling/tensioning performance. See Appendix A.15, Figure 26.
- Fiber Optic Pulling Head
 - A Kellems Pulling Grip will be installed on the fiber optic cable to serve as a pulling head. Specifications for the grip can be found in Appendix A.16, Figure 27.

CPUC Evaluation of Preconstruction Mitigation Implementation

All applicable project mitigation measures, APMs, compliance plans, and permit conditions shall be implemented. Some measures have on-going/time-sensitive requirements and are required to be implemented prior to and during construction where applicable. A discussion of PG&E's compliance with pre-construction and during construction biological (marine), cultural, paleontological, and water resources requirements is presented below. The Compliance Status Table in PG&E's NTPR provides preconstruction compliance information for the other issue areas addressed by the Embarcadero – Potrero MND.

Following the discussion of biological (marine), cultural, paleontological, and water resources, a list of bulleted conditions is presented to define additional information and clarifications regarding outstanding requirements. In some cases, these items exceed the requirements of the Mitigation Measures and Applicant

Proposed Measures, and are based on specific site conditions. In these cases, the conditions will not appear in the NTPR mitigation compliance table.

Biological Resources, Marine Habitat

The submarine portions of the Project route would pass through natural and artificial intertidal, subtidal, and open-water habitats. Marine habitats and associated marine communities in the Project area include natural (rock) and artificial (concrete, rock riprap, wood, and concrete pilings) hard intertidal areas near shore; soft substrate subtidal habitat; and open water (NMFS, 2007a; CCC, 2010). The Bay depth in the Project area is about 10 feet along the east-west portion near the former Potrero Power Plant and ranges from approximately 30 feet along the southern portion to 70 feet deep along the northern portion of the proposed submarine route. Ambient underwater noise levels in the Project area are heavily influenced by the anthropogenic activity in the Bay, such as marine vessels or construction that occurs in the water (Aspen 2013, MND 5-51 – 5-51).

Intertidal habitat is habitat between the low and high tide lines. Intertidal habitat located along the Project route consists of riprap and soft-bottom mud at the southern cable landing and pavement, ports, wharfs, and soft-bottom mud at the northern cable landing. There are no natural rocky areas, sandy beaches, or wetlands on the shore along the proposed route (Aspen 2013, MND 5-51). Under NTP #2, the Project drilled through sediment beneath the Bay shoreline and adjacent intertidal habitat, 40 to 50 feet below the water surface.

Subtidal habitat consists of the submerged area below the low tide mark. Within the San Francisco Bay, these habitats include mud, shell, sand, rocks, artificial structures, shellfish beds, eelgrass beds, algal beds, and the water column above the bay bottom (CCC, 2010). Subtidal habitat along the proposed route consists of soft-bottom mud and sandy habitats and the water column above them. There are no eelgrass (*Zostera marina*) beds, shell, or rock areas along the route, nor are there any planned eelgrass or shell bed restoration projects in the area (Subtidal Habitat Goals Project [SHGP], CCC, 2012). The project route passes through subtidal open-water and bottom-sediment habitat (PG&E, 2012; Aspen 2013, MND 5-51) and this habitat is the subject area of NTP #6.

There are 11 special-status marine species (fish and mammals) with high or moderate potential to be present in the Project area and include: green sturgeon (*Acipenser medirostris*), central California coast Coho salmon (*Oncorhynchus kisutch*), Chinook salmon (*Oncorhynchus tshawytscha*), California central coast steelhead (*Oncorhynchus mykiss irideus*), longfin smelt (*Spirinchus thaleichthys*), Pacific herring (*Clupea pallasii*), great white shark (*Carcharodon carcharias*), Pacific harbor seal (*Phoca vitulina richardsi*), California sea lion (*Zalophus californianus*), harbor porpoise (*Phocoena phocoena*), and gray whale (*Eschrichtius robustus*). The San Francisco Bay is federally designated as critical habitat for the southern Distinct Population Segment (DPS) of North American green sturgeon and for the DPS of Central California Coast steelhead (Aspen 2013, MND 5-52).

The NMFS issued a “not likely to adversely affect” letter for the Project and no USFWS permit is required because no potential for species under their jurisdiction will be impacted. CDFW has authorized the Project to proceed, requiring the hydroplow intake screens to be tested to measure the actual approach velocity prior to use on the project. A BCDC permit was also obtained. All construction personnel will receive biological resource and environmental awareness training prior to starting work.

Cultural Resources

A records search for information was performed at the Northwest Information Center (NWIC) and the California Historical Resources Information System (CHRIS) on April 20, 2012. The records search conducted for the proposed route centered on the alignment and included a one-quarter mile buffer on either side. The records search included a review of base maps and resource records on file at the NWIC, as well as the California Office of Historic Preservation (OHP) listings of significant resources. A search of the Sacred Lands Files maintained by the Native American Heritage Commission (NAHC) was requested on June 27, 2012 and again on July 6, 2012. In its response, the NAHC noted that a search of the Sacred Lands Files failed to indicate the presence of Native American cultural resources in the immediate Project area, and provided a list of recommended contacts that may have additional information concerning archaeological sites or traditional cultural properties near the Project area.

Deeper areas of the Bay, generally those that lie 30 feet (10 meters) or more below sea level, were fully inundated by sea level rise during the early Holocene more than 7,000 years ago, making them unavailable for subsequent human use and occupation in the Holocene. Additionally, rapid sea level rise during the early and middle Holocene may have eroded portions of this surface along with any associated archaeological deposits. These factors further reduce the potential of discovering buried prehistoric archaeological deposits beneath the Bay Mud in this part of the project area (Aspen 2013, MND 5-83).

There is a higher potential for buried prehistoric sites within the near-shore zone, where Bay Mud deposits are generally thinner and inundation occurred later in time. However, since the earth disturbances proposed in these zones is relatively small and highly localized, relatively little, if any, of the buried surfaces with the potential for buried prehistoric archaeological deposits (if present) would be impacted by project-related activities (Aspen 2013, MND 5-84).

Marine Geophysical Survey: A maritime archaeologist reviewed the *Final Embarcadero to Potrero ZA-1 230kV Underground Transmission Project Feasibility Study* prepared by Black and Veatch for PG&E (B&V Project No. 173915.42.3008). A review of the Black and Veatch report included a detailed examination of *Exhibit K, Final Report, Submarine Utility Corridor Investigation, Marine Geophysical Survey, Proposed AZ-1 Transmission Line, San Francisco Bay, California* (OSI Report No. 11ES057), the geophysical report prepared by Ocean Surveys, Inc. (OSI) for Black and Veatch. The review also included a detailed examination of the digital geophysical datasets collected by OSI, specifically the side scan sonar and magnetometer data. Although OSI collected a suite of geophysical data, the datasets most relevant to an evaluation of the potential that historical resources in the form of cultural/archaeological deposits are present within the APE are the side scan sonar imagery and the magnetometer data. As detailed in the OSI report, side scan sonar uses acoustical data to create an image of the sea floor, while the magnetometer records variations in the earth's magnetic field that may represent ferrous metal objects. The side scan sonar imagery records objects visible above the sea floor, while the magnetometer can determine the presence of either visible or buried material. Used together, the instruments are the primary tools used by maritime archaeologists to determine the presence of submerged cultural resources, primarily shipwrecks (Aspen 2013, MND 5-82).

The online California State Lands Commission (CSLC) Shipwreck Database (http://shipwrecks.slc.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp) lists shipwrecks by county and is based primarily on historical accounts of these incidents. The San Francisco Planning Department updated information in the CSLC database using research provided by the Institute for Western Maritime Archaeology. Additional potential shipwreck locations are maintained in the San Francisco Maritime Museum archives. Additional information about shipwreck locations along the submarine portion of the transmission cable alignment was sought at the J. Porter Shaw Library at San Francisco Maritime National Historical Park. The

NOAA Office of the Coast Survey's AWOIS database was also consulted for information about potential shipwrecks along the submarine portion of the transmission cable alignment. There are six named shipwrecks mapped within one-half mile of the project area listed in the CSLC database. These are primarily located in the Mission Bay and China Basin areas. The location of only one of these shipwrecks has been confirmed. The AWOIS database and the NOAA Chart no. 18650 depict a charted shipwreck in the vicinity of the transmission cable alignment. No information is known about the shipwreck other than its location, size, and orientation (Aspen 2013, MND 5-87).

The results of the Marine Geophysical Survey indicate a variety of small, isolated side scan sonar targets and magnetometer anomalies throughout the survey area. These are typical results expected in a harbor that has had an active maritime industry for more than 150 years. OSI documented 106 side scan sonar targets (OSI, 2011; Appendix 3). The majority is identified as isolated "linear" or "oblong" objects varying in length from 3 ft. to 220 ft. Five targets are identified as tires or groups of tires; one target (SS62) is identified as a rectangular object measuring 19 ft. long by 7 ft. wide by 2 ft. high, which OSI indicated as a possible wreck. There is no magnetic anomaly directly associated with the target (the nearest magnetic anomaly is approximately 80 ft. north), and additional review by a maritime archaeologist suggests the object is unlikely to be a shipwreck, but is most likely an isolated piece of non-ferrous debris. The most striking side scan sonar target recorded in the survey area is a large shipwreck located in the northeastern portion of the survey area. The target is approximately 300 ft. long by 150 ft. wide and is located approximately 165 ft. east of the 600-ft survey corridor centerline, extending outside the survey corridor. The side scan sonar target corresponds to the charted wreck location from NOAA's AWOIS database. Review of the side scan sonar data by a maritime archaeologist revealed that no other targets of interest were recorded (Aspen 2013, MND 5-93).

OSI recorded 272 magnetic anomalies in the survey area, ranging in size from less than 20 gammas to nearly 15,000 gammas (OSI, 2011; Appendix 4). The majority of the anomalies are low to moderate intensity and of short duration, indicating they are likely caused by isolated ferrous masses. Additional processing of the magnetometer data using magnetic gradient processing, which looks for changes in the earth's magnetic field over short distances, helped to isolate magnetic anomalies that may be associated with cultural objects such as shipwrecks. The largest magnetic anomaly recorded during the OSI survey, which is nearly 15,000 gammas, is associated with the shipwreck also recorded by the side scan sonar (see above). The extremely large magnetic anomaly associated with the shipwreck suggests the vessel is iron or steel. There are a number of large magnetic anomalies associated with piers at both the southern and northern ends of the survey area and associated with the Trans Bay Cable in the southern end of the survey area. One additional magnetic anomaly recorded within the survey area is of interest. The anomaly is an 800 gamma anomaly with a 368-ft duration located in the southern half of the survey area (identified by OSI as anomaly no. M63 at 6019099E, 2106491N). There is no side scan sonar target associated with M63, indicating that the source of the anomaly is buried beneath the bay floor. Although it is impossible to predict the size or composition of the ferrous material causing the anomaly, the high intensity and long duration suggests it is either a very large, isolated ferrous object or a cluster of smaller ferrous masses (Aspen 2013, MND 5-93).

All construction personnel will receive cultural resource training prior to starting work. In the event that an unanticipated discovery of cultural materials is made within the HDD sites, the find shall be managed in compliance with the *Archaeological Monitoring and Inadvertent Discovery Plan for the Potrero Portion of the Embarcadero-Potrero 230 kV Transmission Project, City of San Francisco, California* (July 2014 FINAL), prepared by Far Western Anthropological Research Group, Inc.

Paleontological Resources

Published and available unpublished geological and paleontological literature was reviewed to develop a baseline paleontological resource inventory of the Project area, and to assess the potential paleontological productivity of the stratigraphic units that may be affected by the Project. Sources included geological maps, paleontological and geological reports, and available electronic databases. A paleontological resources record review was conducted for the Project on May 12, 2012 using the online database maintained by the University of California at Berkeley Museum of Paleontology (UCMP) (Aspen 2013, MND 5-82).

Geologic mapping by Schlocker (1974) was used to determine the underlying geology for each of the project components. The submarine portion of the proposed transmission route would be through Holocene deposits of Bay Mud (Aspen 2013, MND 5-87). Bay Mud consists of water-saturated, estuarine mud underlying the marshlands and tidal mud-flats of the San Francisco Bay, and in subtidal areas. Generally composed of soft and silty clays, Bay Mud also typically contains lenses of fine sand and peaty material. Bay Mud deposits were laid down after the post-glacial rise of sea level inundated the San Francisco Bay area approximately 10,000 radiocarbon years ago (Atwater, 1979) and, as such, are Holocene in age. This unit is therefore designated as having low paleontological sensitivity (Aspen 2013, MND 5-89).

All construction personnel will receive paleontological resource training prior to starting work.

Water Resources

PG&E received a USACE Nationwide Permit and Regional Water Quality Control Board 401 certification for work in the marine environment.

Conditions of NTP Approval

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

- All applicable Project mitigation measures, 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 NTP #6 shall be available on site for the duration of construction activities.
- Prior to the start of construction, PG&E shall coordinate with CDFW in regards to the required testing of the hydroplow intake screens to measure the actual approach velocity prior to use on the project. PG&E shall submit CDFW's approval to the CPUC prior to the start of construction.
- Per the BCDC Major Permit #2014.003.00 dated October 17, 2014, Special Condition A.1., BCDC shall review and approve final project plans. PG&E shall submit the BCDC approval to the CPUC prior to the start of construction.
- If unanticipated biological resources or special-status species are encountered, the CPUC EM shall be notified immediately, as well as the appropriate resource agencies.

- Prior to the start of construction and in accordance with APM TR-2, PG&E shall submit to the CPUC documentation of coordination with the United States Coast Guard regarding Vessel Safety Zone and documentation of Notices to Mariners.
- Prior to the start of construction, PG&E shall provide documentation that all vessels, barges, and marine equipment are from within the San Francisco Bay, or provide an Invasive Marine Species Control Plan as required by MM B-1.
- All crew members shall be Worker Environmental Awareness Program (WEAP) trained prior to working on the Project. A log shall be maintained on-site with the names of all crew personnel trained. For any crew members with limited English, a translator shall be on-site to ensure understanding of the training program. In place of a translator, the WEAP training brochure can be provided in Spanish or other languages as appropriate. All participants will receive a hard-hat sticker for ease of compliance verification.
- In the case of an unanticipated cultural resources discovery, the CPUC Environmental Monitor (EM) shall be notified immediately and the find shall be managed in compliance with the *Archaeological Monitoring and Inadvertent Discovery Plan for the Embarcadero-Potrero 230 kV Transmission Project, City of San Francisco, California* (July 2014 Final), prepared by Far Western Anthropological Research Group, Inc.
- All complaints received by PG&E in regard to the Project shall be logged and reported immediately to the CPUC. This includes complaints relevant to marine traffic, noise, etc. Complaints shall also be forwarded to the Coast Guard. If complaints cannot be resolved, activities may need to be modified depending on the nature of the complaint.
- If construction debris or spills enter into marine waters, appropriate jurisdictional agencies and the CPUC EM shall be notified immediately.

Sincerely,



Billie Blanchard
CPUC Environmental Project Manager

cc: V. Strong, Aspen