

Comment Set A California Department of Fish and Wildlife



State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
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EDMUND G. BROWN JR., Governor
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September 13, 2013

Billie Blanchard
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California Public Utilities Commission
c/o Aspen Environmental Group
235 Montgomery Street, Suite 935
San Francisco, CA 94104-3002

Subject: Draft Mitigated Negative Declaration and Supporting Initial Study for Pacific Gas and Electric Company's Embarcadero-Potrero 230 kV Transmission Project

Dear Ms. Blanchard:

The California Department of Fish and Wildlife (Department) has reviewed the Draft Mitigated Negative Declaration (MND) and Supporting Initial Study for Pacific Gas and Electric Company's (PG&E) Embarcadero-Potrero 230 kilovolt (kV) Transmission Project (Project). The Project proposes to add a 230 kV transmission line within the city and county of San Francisco from the Embarcadero substation, at the corner of Fremont and Folsom streets, to the Potrero Switchyard, on Illinois Street between 22nd and 23rd Streets. The 3.5 mile long transmission line will be installed using a horizontal directional drill for 0.4 miles between the terrestrial end points to the waters of San Francisco Bay (Bay) and 0.6 miles of the cable will be installed underground in paved areas of San Francisco's Rincon Hill neighborhood. Within the Bay, 2.5 miles of cable will be laid in a 6-10 ft. deep by 1 ft. wide trench. The trench will be excavated using a hydroplow. In addition, 650 ft. of cable within the Bay cannot be buried. This section of cable will require a concrete blanket or steel half pipes covering approximately 32,500 square ft. of Bay floor.

As a trustee for the State's fish and wildlife resources, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, and habitat necessary for biologically sustainable populations of those species. In this capacity, the Department administers the California Endangered Species Act, the Native Plant Protection Act, and other provisions of the California Fish and Game Code that afford protection to the State's fish and wildlife trust resources. The Department is recognized as a "Trustee Agency" under the California Environmental Quality Act (CEQA guidelines §15386). Pursuant to our jurisdiction, the Department has the following concerns, comments, and recommendations regarding the Project.

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Conserving California's Wildlife Since 1870

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Biological Significance

The San Francisco Bay-Delta is the second largest estuary in the United States and supports numerous aquatic habitats and biological communities. It encompasses 479 square miles, including shallow mudflats. This ecologically significant ecosystem supports a number of state and federally threatened and endangered species, and sustains important commercial and recreational fisheries. Protected fish species under the State and Federal Endangered Species Acts that could potentially be impacted by Project activities include:

- Chinook salmon (*Oncorhynchus tshawytscha*), state and federally threatened (Spring-run), state and federally endangered (Winter-run);
- Steelhead (*Oncorhynchus mykiss*), federally-threatened (Central California Coast and Central Valley ESUs);
- Green sturgeon (*Acipenser medirostris*), federally-threatened (southern DPS); and
- Longfin smelt (*Spirinchus thaleichthys*), state-threatened.

Several species with important commercial and recreational fisheries value that could potentially be impacted by Project activities include:

- Dungeness crab (*Cancer magister*),
- Pacific herring (*Clupea pallasii*),
- Rockfish (*Sebastes* spp.),
- California halibut (*Paralichthys californicus*)
- Surfperches (*Embiotocidae*).

A-2

Applicant Proposed Measure (APM) BIO-3: Seasonal Work Windows

The work window for Chinook salmon, steelhead, and Pacific herring stated in APM BIO-3 is incorrect. The work windows stated within the San Francisco Bay Long Term Management Strategy is June 1 - November 30 for Chinook salmon and steelhead and March 1 - November 30 for Pacific herring. Therefore, the correct work window for all in-water Project activities is June 1 - November 30. The Department requests this correction be made in the Final MND. These work windows were put in place to protect listed species and recreational and commercially important species from in-water work in the Bay. While the work windows were specifically put in place for dredging projects, they are relevant to all in-water work.

A-3

APM BIO-4: Herring Spawning Protection Outside Work Windows

Herring schools stage in deeper parts of the Bay during the spawning season and therefore may be present offshore within the footprint of the cable installation from December through February. The sediment plume from the hydroplow could potentially scatter the fish making them more vulnerable to predation. Additionally, the fine particles from suspended bay sediments have

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been shown to cause gill abrasion, changes to respiration, and potentially make fish more susceptible to infection (Anchor Environmental 2003). Increased suspended sediment has also been shown to have impacts on herring eggs. Within the first two hours of herring eggs being in water with elevated sediment concentrations, increased mortality and abnormalities in larval fish have been documented. The Department uses a standard 500 meter buffer zone for projects conducted outside of the herring work window that will cause suspended sediment. Monitoring should include detection of schools of fish within the footprint of the cable laying.

A-4 cont.

If a herring school is detected within the projected path of the cable and hydroplow, work should stop immediately and postponed until the herring school has moved. A written approval from the Department will be required in order to proceed with Project activities outside of the work window. The Department should be notified 30 days in advance if PG&E intends to apply for a work window extension, and a Department trained independent observer would be required during all in-water Project related activities that occur outside of the work window. If herring spawning is detected, Project activities should halt immediately and Department personnel contacted (contact info below). Work will not be allowed to continue within the spawning location buffer zone for 10-14 days to allow sufficient time for eggs to hatch and larval herring to disperse. Due to the likelihood of herring being present at this location during the spawning season, compliance with the protective work window will be mandatory.

APM BIO-6 and Mitigation Measure B-3: Incidental Take Permit and Fish Screens
The Department appreciates this mitigation measure acknowledging the potential need for an Incidental Take Permit (ITP) and looks forward to consulting with PG&E regarding an ITP application. The hydroplow intakes should be screened according to current Department fish screen criteria that will be protective of longfin smelt (http://www.dfg.ca.gov/fish/Resources/Projects/Engin/Engin_ScreenCriteria.asp). The Department recommends that PG&E consult Department staff to design an acceptable fish screen that will avoid impingement and entrainment of sensitive fish species.

A-5

Loss of Benthic Habitat

Benthic habitat in San Francisco Bay provides a multitude of benefits for marine species such as invertebrates, marine mammals, as well as commercially and recreationally important fish species. The Department recommends that PG&E propose some form of compensatory mitigation for the loss of an estimated 32,500 square feet (0.74 acres) of benthic habitat that would be covered by a concrete blanket or steel half pipes to bury 650 ft. of cable. Suggested mitigation may be in the form of funding toward approved habitat restoration projects in San Francisco Bay or habitat restoration undertaken by PG&E in the vicinity of the habitat affected by Project activities.

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Electromagnetic Fields

The draft MND does not analyze the potential effects of electromagnetic fields (EMF) on marine species from an electrical power cable. Analysis of the potential effects of EMF on sensitive species, such as salmonids and elasmobranchs (sharks, rays skates, and sturgeon), should be described. Additionally, there is no information in the document on what the expected EMF levels would be from this cable in the Bay. This information needs to be presented for the Department to complete its review of potential EMF impacts.

A-7

Conclusion

The Department appreciates the opportunity to review and comment on this Draft MND. As always, Department personnel are available to discuss our comments, concerns, and recommendations in greater detail. To arrange for discussion, please contact Arn Aarreberg, Environmental Scientist, California Department of Fish and Wildlife, 5355 Skylane Blvd., Suite B, Santa Rosa, CA 95403, phone (707) 576-2889, email Arn.Aarreberg@wildlife.ca.gov.

Sincerely,



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References

Anchor Environmental LLC. 2003. Literature review of effects of suspended sediments due to dredging operations. iii+87 pp. +App. A-C. June. Prepared for Los Angeles Contaminated Sediments Task Force.

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Responses to Comment Set A, California Department of Fish and Wildlife

A-1 The California Department of Fish and Wildlife (CDFW) notes that as a trustee for the State’s fish and wildlife resources, CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, and their habitat. CDFW administers the California Endangered Species Act, the Native Plant Protection Act, and other provisions in the California Fish and Game Code. The CPUC acknowledges CDFW’s role and its expertise. Table 4-6 (Permits that May Be Required for the Embarcadero-Potrero 230 kV Transmission Project) in Section 4.14 (Other Permits and Approvals) of the Final IS/MND notes that CDFW has jurisdiction over endangered species consultation. Table 4-6 has been revised as shown below to specify that CDFW also has authority over the Native Plant Protection Act and other provisions of the Fish and Game Code as applicable. The discussion of State Applicable Regulations in Section 5.4.1 (Biological Resources) in the Draft IS/MND also describes CDFW’s jurisdiction over the state’s biological resources.

Table 4-6. Permits that May Be Required for the Embarcadero-Potrero 230 kV Transmission Project

Agency	Jurisdiction	Requirements
Federal/State Agencies		
California Department of Fish and Wildlife (CDFW)	Endangered species consultation	California Endangered Species Act coordination, Section 20801 Incidental Take Permit or Consistency Determination under California Fish and Game Code Section 2080.1, <u>Native Plant Protection Act, and other provisions of the Fish and Game Code as applicable</u>

A-2 CDFW notes that the San Francisco Bay-Delta is the second largest estuary in the United States and that it supports numerous aquatic habitats, biological communities, state and federally protected species, and commercial and recreational fisheries. CDFW then lists four listed species and five commercial and recreation species that could be affected by the project. These nine species are addressed below.

Section 5.4.1 of the Draft IS/MND discusses Chinook salmon (*Oncorhynchus tshawytscha*) and potential impacts to this species are identified in Section 5.4.2, see pp. 5-55, 5-67, and 5-69. Steelhead (*Oncorhynchus mykiss*) and potential impacts to this species are also discussed on pp. 5-55, 5-67, and 5-69. The environmental setting and potential impacts to green sturgeon (*Acipenser medirostris*) are described on pp. 5-52, 5-67, and 5-69. Longfin smelt (*Spirinchus thaleichthys*) and the potential impacts of the Proposed Project are discussed on pp. 5-55 to 5-56, 5-67, 5-69. Potential impacts on longfin smelt are also specifically addressed in Mitigation Measure B-3 (Protect marine species).

The environmental setting and potential impacts to Pacific herring (*Clupea pallasii*) are discussed in the Draft IS/MND, see pp. 5-56, 5-67, and 5-69. These potential impacts are addressed by APM BIO-4 (Herring Spawning Protection. California halibut (*Paralichthys californicus*) and is mentioned in the impact analysis in Section 5.3.2 of the Draft IS/MND (see p. 5-67). Two species of rockfish (*Sebastes* spp.) are included in Table 5.4-2 (Managed Fish Species [Magnuson-Stevens Act] in the Project Area).

In addition, Section 5.4.1 (Special-Status Plants and Animals) of the Final IS/MND has been revised as follows:

There are least 16 federally managed fish species (Magnuson-Stevens Act, see Applicable Regulations) that may be present in the project area (SF Planning Department, 2011). These managed fish species are shown in Table 5.4-2. Other commercial and recreational marine species, such as Dungeness crab (*Cancer magister*) and surf-perches (*Embiotocidae*), are also present in the project area.

A-3 CDFW states that APM BIO-3 contains the incorrect seasonal work window for protected fish. APM BIO-3 in the Draft IS/MND would confine work to a window between March 1 and November 30. As CDFW notes, this work window is longer than the actual window for Chinook salmon and steelhead. The work window in the San Francisco Bay Long Term Management Strategy (LTMS) is actually *June 1–November 30* for Chinook salmon and steelhead and *March 1–November 30 only* for Pacific herring. The discussion of Special-Status Plants and Animals in Section 5.4.1 of the Draft IS/MND states that there may be low numbers of spring-run Chinook salmon in the Central Bay in the vicinity of the Proposed Project and that there is suitable foraging habitat for Central California Coast steelhead along the project route. Section 5.4.2(a) of the Draft IS/MND concluded that foraging salmon and steelhead would likely avoid project equipment while foraging. The commenter states that the LTMS work windows are relevant to all in-water work. The commenter also requests that APM BIO-3 be changed to reflect an in-water work window from June 1 to November 30.

In response, APM BIO-3 has been revised as follows:

Seasonal Work Windows. Where feasible, hydroplow cable installation will be conducted between ~~June~~ March 1 and November 30, based on the seasonal work windows for steelhead, Chinook salmon, and Pacific herring (USEPA et al., 1996). If work is planned to occur outside of this work window, PG&E will coordinate any additional measures, such as buffer zones and monitoring for herring spawn, with NMFS, USFWS, and CDFW. PG&E will notify CDFW at least 30 days in advance of its intent to apply for an extension of the work window.

A-4 CDFW states that herring schools may be present within the Proposed Project's cable installation footprint from December through February. CDFW suggests that sediments dispersed by the hydroplow may scatter fish and make them more vulnerable to predation and may cause gill abrasion, changes to respiration, and increased susceptibility to infection. In addition, CDFW notes that suspended sediment may affect herring eggs and larval fish, which is why CDFW typically uses a standard 500 meter buffer zone. CDFW requests that monitoring for herring include detection of schools of fish within the project footprint. If a herring school is detected within the cable and hydroplow path, CDFW requests that work be halted immediately and postponed until the herring school has moved. CDFW states that PG&E must request written approval to conduct project activities outside the specified work window, and that CDFW should be notified 30 days in advance if PG&E intends to apply for a work window extension. CDFW suggests that a CDFW-trained independent observer should be present during all in-water work outside the work window. If herring spawning is detected, project activities should be halted immediately and CDFW should be contacted. After detection of herring spawning, CDFW would not allow work in the spawning location buffer zone for 10 to 14 days to allow time for eggs to hatch and larval herring to disperse. CDFW states that because of the likelihood of herring being present in the project footprint during spawning season, compliance with the protective work window would be necessary.

In response, APM BIO-3 includes revisions shown in this Final IS/MND. APM BIO-3 commits PG&E to coordinating with CDFW (and USFWS and NMFS) if there would be in-water work outside of the seasonal work window for Pacific herring, as described in Response to Comment A-3. APM BIO-3 (as revised) would implement the recommendations of CDFW for both monitoring for herring spawning and coordination regarding buffer zones. PG&E notes in Response to CPUC Data Request Bio-14 (dated October 4, 2013) that CDFW required a 200-meter buffer for herring spawns during dredging activities for the replacement span of the San Francisco Bay Bridge (PG&E, 2013a; BCDC, 2012).

- A-5 CDFW states that the Mitigation Measure B-3 (Protect marine species) acknowledging the potential need for an Incidental Take Permit (ITP) is appreciated and that CDFW looks forward to consulting with PG&E regarding an ITP application. CDFW also suggests that hydroplow intakes should be screened according to current CDFW fish screen standards (http://www.dfg.ca.gov/fish/Resources/Projects/Engin/Engin_ScreenCriteria.asp). CDFW recommends that PG&E consult with CDFW staff to design an appropriate fish screen. In response, the following bullet point in Mitigation Measure B-3 (Protect marine species) has been revised as follows:

The mesh screen or screening device shall comply with applicable state (CDFW) and federal (NMFS) criteria for screening intakes such as those found in NMFS's 1996 *Juvenile Fish Screen Criteria for Pump Intakes* and CDFW's *Fish Screening Criteria* (http://www.dfg.ca.gov/fish/Resources/Projects/Engin/Engin_ScreenCriteria.asp) or as required in coordination with ~~by~~ NMFS and CDFW.

- A-6 CDFW states benthic habitat in the San Francisco Bay provides a multitude of benefits for marine species. CDFW recommends that PG&E propose compensation for loss of 32,500 square feet (0.74 acres) of benthic habitat that would be covered by concrete blanket or steel half pipes to bury 650 feet of cable. CDFW suggests that PG&E could fund approved restoration projects in the San Francisco Bay or create habitat restoration in the project vicinity.

Section 5.4.2(a) of the Draft IS/MND notes that the Proposed Project would temporarily impact 13,200 square feet (0.0005 square miles) of benthic habitat through fluidizing sediment and would permanently impact up to 32,500 square feet (0.74 acres or 0.001 square miles) of benthic habitat through the installation of concrete or steel pipe. According to PG&E's preliminary engineering, this level of permanent impact is unlikely to occur, and a smaller amount of concrete and steel pipe is likely to be necessary. However, because the San Francisco Bay covers 400 square miles, the Draft IS/MND concluded that even this worst-case impact would be an adverse, but less than significant impact. Final calculations for any permanent impacts to benthic habitat would be discussed with CDFW, NMFS, and USACE while PG&E secures the necessary USACE permit (Table 4-6), and PG&E would comply with any required measures, including participation in Bay restoration projects, if required (PG&E, 2013a). This process would be monitored through APM BIO-5 (Aquatic Habitat Protection), which commits PG&E to obtaining and complying with all necessary permits and permit conditions related to cable installation in the San Francisco Bay to ensure protection and preservation of benthic habitat.

- A-7 CDFW states that the Draft IS/MND does not analyze the potential effects of electromagnetic fields (EMF) on marine species from installation of the underwater cable for

the Proposed Project. CDFW requests discussion of potential effects of EMF on sensitive species, such as salmonids and elasmobranchs (sharks, rays, skates, and sturgeon). CDFW also requests additional information on the expected levels of EMF from the proposed submarine transmission line.

In response, potential EMF levels are discussed generally in Section 4.15.1 (Project Description, Electric and Magnetic Fields) in the Draft IS/MND. As with the study of the human health impacts of EMF, of lack of strong evidence applies to the understanding of potential behavioral changes experienced by marine species. Substantially fewer studies have been conducted related to EMF emitted by undersea power cables and any possible environmental impact to marine organisms. However, to elaborate on potential effects, the following discussion has been added to the impact analysis in the Final IS/MND (Section 5.4.2[a], Fish):

Marine fish and invertebrates are able to detect some electromagnetic fields (EMF) (Woodruff et al., 2012). Electric fields are detected by elasmobranchs (sharks, skates, and rays), sturgeons, and lampreys (Kalmijn, 1971); these fields are used by these fishes to detect prey, find mates, and perhaps for orientation. Magnetic fields may be detected by salmonids, rockfishes, halibuts, and others for navigation, homing, and orientation (Love et al., 2012; Taylor et al., 1986). However, there is limited evidence of the specific effects of EMF on fishes and other marine organisms (Normandeau et al., 2011; Schultz et al., 2010; Woodruff et al., 2012; Bochert and Zettler, 2006). Current research concludes that behavioral responses to electric or magnetic fields are known for some species but extrapolation to impacts resulting from exposure to undersea power cables is speculative (Normandeau et al., 2011).

Electric and magnetic fields would be generated from the operation of the 230 kV cable for the Proposed Project. Because the undersea cable would be shielded to maximize transmission, there would be very minimal electrical field outside the cable insulation. However, magnetic and induced electrical fields would not be shielded by the cable itself, so these would be present during cable operation. PG&E calculated that the intensity of the magnetic field from normal cable operation (base case / expected 2022 summer peak load of 280 amps) 3 feet above the bay floor, directly above each of the cables, would be approximately 20 microTesla (equivalent to 200 milliGauss). In making this calculation, PG&E assumed a separation of 150 feet between each of the cables and a cable burial depth of 6 feet. The CPUC has evaluated, and concurs with information and analysis provided by PG&E indicating that under normal conditions, the Proposed Project would not cause any magnetic field above 52 microTesla (520 milliGauss) at any location in the water column. (PG&E Supplemental Comment Letter, dated October 10, 2013; see Section 8 of this Final IS/MND and Comment F-16.) Elasmobranchs could potentially sense each of the proposed cables if they were within a few meters of it (Paulin, 1995; Kalmijn 2000). Theoretical responses for marine mammals include a temporary change in swim direction or a deviation from a migratory route. Although these theoretical responses have not been tested, given the spatial limitations of fields from power cables, the likelihood of such a change affecting a large enough area to elicit a significant course alteration would be low (Normandeau et al., 2011).

Estimating the magnitude of the induced electrical field from the cable under normal conditions would involve complex modeling. Induced electrical field studies

indicate that to repulse electro-sensitive species, the strength of the induced electrical field needs to be greater than 0.0001 Volts per meter (Normandeau et al. 2011). At its short-term emergency rating, the transmission cable would only produce an induced electrical field greater than 0.0001 Volts per meter within a few meters of each cable. In addition, studies on elasmobranchs interacting with induced electrical fields show that these fishes typically react to weak induced electrical fields at low frequencies (1-10 Hz; Normandeau et al. 2011). The transmission cable for the Proposed Project would operate at 60 Hz. There is not currently enough definitive data to determine whether and how electro-sensitive fishes change their behavior in response to alternating current electrical fields in the 50-60 Hz range (Normandeau et al., 2011).