CHAPTER 1.0

Executive Summary

1.1 Overview

The proposed Embarcadero-Potrero 230 kV Transmission Project will include construction, operation, and maintenance of a 230 kV transmission line in San Francisco from Embarcadero Substation near the corner of Fremont and Folsom Streets, to Potrero Switchyard on Illinois Street between 22nd and 23rd Streets. The project is approximately 3.5 miles in total length, including approximately 2.5 miles to be installed offshore in the San Francisco Bay (the Bay), 0.4 mile to be installed in horizontal directional drills (HDD) from the Bay to the transition points on land, and approximately 0.6 mile to be installed underground in paved areas.

The submarine portion of the proposed transmission line will typically be buried 6 to 10 feet underneath the floor of the Bay, roughly 1,500 to 2,500 feet off the western shoreline. At the ends of the submarine portion of the route, transitional sections totaling approximately 0.4 mile will be installed in HDD conduit where the submarine cable transitions from offshore to onshore. At the northern end, the transition to underground cable in city streets will be located in the lower Embarcadero area south of the Bay Bridge, with the HDD passing between Piers 28 and Piers 30-32 to end inland at Spear Street. At the southern end, the cable transition will be located along 23rd Street. Figures 2-1, Project Vicinity, and 2-2, Project Location, in Chapter 2 (Project Description) show the location of the project on the northeastern portion of the San Francisco Peninsula.

PG&E will interconnect the new 230 kV transmission line within Embarcadero Substation (which is currently being upgraded pursuant to the separate Embarcadero Substation 230 kV Bus Upgrade project) and will install a new 230 kV switchyard adjacent to the existing Potrero Switchyard to accommodate additional substation equipment. In addition, construction will require equipment staging sites and laydown yards.

1.2 Purpose and Need and Project Objectives

PG&E's customers in the San Francisco area are supplied with electricity by PG&E's 230 kV and 115 kV transmission systems. These systems are not currently interconnected within San Francisco. The 230 kV system is supplied from PG&E's Martin Substation in Daly City. The 115 kV system is supplied from Martin Substation and also by the Trans Bay Cable (TBC) connection at PG&E's Potrero Switchyard. Because no central power generation station is located within its borders, San Francisco is entirely dependent on electric transmission lines to provide electricity to residents, businesses, and public agencies.

The Embarcadero-Potrero 230 kV Transmission Project will construct a new, single circuit, 230 kV transmission line between PG&E's Embarcadero Substation and PG&E's Potrero Switchyard. The project is intended to enhance the reliability of PG&E's electric service to San Francisco, and particularly to the downtown area served by Embarcadero Substation, given the significant adverse impacts that a service outage would have on the citizens and economy of San Francisco.

PG&E's Embarcadero Substation is the sole source of electricity to much of downtown San Francisco including the Financial District, Union Square, North Beach, The Embarcadero, Chinatown, Nob Hill, Telegraph Hill, and the South of Market and North of AT&T Park areas including Rincon Hill.

Embarcadero Substation is currently fed by two high pressure fluid filled (HPFF) pipe-type 230 kV cables from Martin Substation, installed in 1974. PG&E's Martin-Embarcadero 230 kV cables, like PG&E's underground transmission lines generally, have been very reliable to date. At present, and projected through at least 2030, either one of the two existing 230 kV cables can deliver enough electricity to meet current and expected demand at Embarcadero Substation. Nonetheless, this project addresses various low-probability but very high-impact scenarios under which both Martin-Embarcadero cables are out of service, causing a potentially lengthy loss of electricity in downtown San Francisco.

By connecting PG&E's Embarcadero Substation and Potrero Switchyard, the project will also provide an interconnection for PG&E's San Francisco 230 kV and 115 kV transmission systems. Such an interconnection

would provide a number of benefits to PG&E operations and reliability, including: (a) provide the 115 kV system with an additional source of power when the Martin-Embarcadero cables are in operation; (b) facilitate the eventual replacement of the 115 kV cables, some of which are now 55-65 years old; and (c) provide power from the 115 kV system to the 230 kV system if the 115 kV system were operational, but both TBC and the Martin-Embarcadero cables were not.

In addition to providing an immediate assurance of increased reliability to customers served through Embarcadero Substation, the project has additional reliability benefits in the long run. At some point in the future, PG&E likely would be required to install a third cable to Embarcadero Substation to meet the North American Electric Reliability Corporation (NERC) transmission planning reliability standards approved by the Federal Energy Regulatory Commission (FERC) as well as the California Independent System Operator's (ISO's) planning standards.

The objectives of the project are to:

- Improve reliability of PG&E's 230 kV transmission system in San Francisco by constructing a new 230 kV transmission line between Embarcadero Substation and Potrero Switchyard that provides a high likelihood of continued electric service to downtown San Francisco in the event of overlapping outages on both of the two existing 230 kV transmission lines.
- Construct an economically and technically feasible third 230 kV transmission line to PG&E's Embarcadero Substation that 1) increases the likelihood that the new transmission line will remain operable following a major earthquake in the San Francisco Bay Area, and 2) so that, if either of the two existing 230 kV transmission lines to PG&E's Embarcadero Substation must be replaced, downtown San Francisco is not at risk of a single-cable outage causing a prolonged loss of electric service; and 3) so that PG&E may allow one of the two existing 230 kV transmission lines serving Embarcadero Substation to be de-energized to allow infrastructure construction without placing downtown San Francisco at risk of a single-cable outage causing a prolonged loss of electric service.
- Interconnect PG&E's San Francisco 230 kV and 115 kV transmission systems at Potrero Switchyard.
- Construct a third 230 kV transmission line to PG&E's Embarcadero Substation from Potrero Switchyard, the only PG&E substation on the San Francisco 115 kV network with sufficient capacity to serve current and future Embarcadero loads in the event that both existing 230 kV cables are out of service.
- Improve reliability of PG&E's San Francisco 230 kV system by having a new 230 kV transmission line to Embarcadero Substation that will allow PG&E to maintain electric service to all customers served from Embarcadero Substation with any one of the 230 kV transmission lines serving Embarcadero Substation out of service.

1.3 Scope of the PEA and Conclusions

The PEA describes the affected environment and project related environmental effects for the following resource areas:

- Aesthetics (Section 3.1)
- Agriculture and Forestry (Section 3.2)
- Air Quality (Section 3.3)
- Biological Resources (Section 3.4)
- Cultural and Paleontology (Section 3.5)
- Geology and Soils (Section 3.6)
- Green House Gases (Section 3.7)
- Hazards (Section 3.8)
- Hydrology and Water Quality (Section 3.9)
- Land Use and Planning (Section 3.10)
- Mineral Resources (Section 3.11)
- Noise (Section 3.12)
- Population and Housing (Section 3.13)
- Public Services (Section 3.14)
- Recreation (Section 3.15)
- Transportation and Traffic (Section 3.16)
- Utilities and Service Systems (Section 3.17)
- Mandatory Findings of Significance, Cumulative, and Growth-Inducing Impacts (Section 4.0)
- Alternatives (Section 5.0)

The project was planned and engineered to avoid or minimize environmental impacts. As part of PG&E's standard construction practices, applicant-proposed measures (APMs) have been incorporated into the project design and will be implemented to avoid or minimize impacts to environmental resources. PG&E has also proposed resource-specific measures to ensure that potential impacts are less than significant. These APMs are identified in the respective resource sections listed above; Table 2-6 in Section 2 contains a summary list of all APMs for this project. With implementation of the proposed APMs, all potential project-related impacts will be avoided or reduced to a less-than-significant level. There are no known areas of controversy, and no major issues that must be resolved related to the project.

1.4 Organization of the PEA

The remainder of the document is organized as follows:

- Chapter 2, Project Description, provides a detailed description of the project and a compiled list of all the APMs later described in the various resource subsections in Chapter 3.
- Chapter 3, Environmental Setting and Impacts, describes the environmental setting and presents an analysis of potential impacts to various categories of resources (as defined in Appendix G of the California Environmental Quality Act [CEQA] Guidelines) that may result from implementing the project. Each subsection includes a description of the regulatory context, environmental setting, resource-specific APMs for minimizing potential impacts, and analysis of potential impacts resulting from construction and from operation and maintenance of the project.
- Chapter 4, Mandatory Findings of Significance, Cumulative, and Growth-Inducing Impacts, addresses findings of significance, an analysis of the project's potential contribution to cumulative projects, and analysis of the project's potential for growth inducement.
- Chapter 5, Alternatives, describes PG&E's review of alternative methods for achieving the basic project objectives, purpose, and need which resulted in the selection of the proposed project.

Appendices are as follows:

- Appendix A: Air Quality and GHG Emissions
- Appendix B: Biological Resources Appendix
- Appendix C: Electric and Magnetic Fields Discussion (general background information)
- Appendix D: Cultural Resources Appendix (provided under separate cover to CPUC) including Native American Heritage Commission Correspondence (project correspondence with the Native American Heritage Commission and Native American organizations and individuals) (provided under separate cover to the CPUC)
- Appendix E: List of Parcels Located within 300 Feet of the proposed Right-of-Way (provided under separate cover to the CPUC)