

Contents

1. Mitigated Negative Declaration	1-1
1.1 Project Information	1-1
1.2 Introduction	1-1
1.3 Project Description	1-2
1.4 PG&E PEA Alternatives Considered	1-3
1.5 CAISO San Francisco Peninsula Reliability Assessment	1-3
1.6 San Francisco Port Commission Negotiations	1-4
1.7 Environmental Determination	1-5
2. Environmental Determination	2-1
2.1 Environmental Factors Potentially Affected	2-1
2.2 Environmental Determination	2-1
3. Introduction to the Initial Study	3-1
3.1 Proposed Project Overview	3-1
3.2 Environmental Analysis	3-1
3.2.1 CEQA Process	3-1
3.2.2 CEQA Lead Agency	3-1
3.2.3 Initial Study	3-2
4. Project Description	4-1
4.1 Project Title	4-1
4.2 Project Sponsor’s Name and Address	4-1
4.3 Lead Agency Name and Address	4-1
4.4 Lead Agency Contact Person and Phone Number	4-1
4.5 Project Location	4-1
4.6 Surrounding Land Uses and Setting	4-2
4.7 General Plan Designation	4-7
4.8 Zoning	4-7
4.9 Project Overview	4-8
4.9.1 Project Objectives	4-8
4.9.2 Purpose and Need	4-9
4.10 Project Components	4-10
4.10.1 New 230 kV Transmission Line	4-11
4.10.2 Embarcadero 230 kV Bus Upgrade Project	4-22
4.10.3 Potrero 230 kV Switchyard	4-37
4.11 Project Construction	4-47
4.11.1 General Construction Considerations	4-47
4.11.2 Traffic Controls and Lane Closures	4-50
4.11.3 Staging Areas	4-50
4.11.4 Easements and Right-of-Way	4-51
4.11.5 Underground Transmission Line Construction	4-52
4.11.6 Substation and Switchyard Construction	4-56
4.11.7 Submarine Cable Installation	4-58
4.11.8 Construction Phasing	4-63
4.11.9 Workforce and Equipment	4-67

4.12	Operation and Maintenance	4-69
4.12.1	Submarine Cable	4-69
4.13	Applicant Proposed Measures	4-70
4.14	Other Permits and Approvals	4-83
4.15	Electric and Magnetic Fields Summary	4-85
4.15.1	Electric and Magnetic Fields	4-85
4.15.2	EMF in the Proposed Project Area	4-86
4.15.3	EMF Management Plan for the Proposed Project	4-87
5.	Initial Study	5-1
5.1	Aesthetics	5-1
5.1.1	Setting	5-1
5.1.2	Environmental Impacts and Mitigation Measures	5-18
5.2	Agriculture and Forestry Resources	5-35
5.2.1	Setting	5-35
5.2.2	Environmental Impacts and Mitigation Measures	5-36
5.3	Air Quality	5-37
5.3.1	Setting	5-37
5.3.2	Environmental Impacts and Mitigation Measures	5-43
5.4	Biological Resources	5-49
5.4.1	Setting	5-49
5.4.2	Environmental Impacts and Mitigation Measures	5-67
5.5	Cultural Resources	5-77
5.5.1	Setting	5-77
5.5.2	Environmental Impacts and Mitigation Measures	5-96
5.6	Geology and Soils	5-101
5.6.1	Setting	5-101
5.6.2	Environmental Impacts and Mitigation Measures	5-111
5.7	Greenhouse Gas Emissions	5-121
5.7.1	Setting	5-121
5.7.2	Environmental Impacts and Mitigation Measures	5-125
5.8	Hazards and Hazardous Materials	5-129
5.8.1	Setting	5-129
5.8.2	Environmental Impacts and Mitigation Measures	5-139
5.9	Hydrology and Water Quality	5-147
5.9.1	Setting	5-147
5.9.2	Environmental Impacts and Mitigation Measures	5-163
5.10	Land Use and Planning	5-175
5.10.1	Setting	5-175
5.10.2	Environmental Impacts and Mitigation Measures	5-183
5.11	Mineral Resources	5-191
5.11.1	Setting	5-191
5.11.2	Environmental Impacts and Mitigation Measures	5-191
5.12	Noise	5-193
5.12.1	Setting	5-193
5.12.2	Environmental Impacts and Mitigation Measures	5-198

5.13	Population and Housing	5-207
5.13.1	Setting	5-207
5.13.2	Environmental Impacts and Mitigation Measures	5-208
5.14	Public Services	5-209
5.14.1	Setting	5-209
5.14.2	Environmental Impacts and Mitigation Measures	5-211
5.15	Recreation	5-215
5.15.1	Setting	5-215
5.15.2	Environmental Impacts and Mitigation Measures	5-216
5.16	Transportation and Traffic	5-219
5.16.1	Setting	5-219
5.16.2	Environmental Impacts and Mitigation Measures	5-225
5.17	Utilities and Service Systems	5-233
5.17.1	Setting	5-233
5.17.2	Environmental Impacts and Mitigation Measures	5-240
5.18	Corona and Induced Current Effects	5-249
5.18.1	Environmental Setting	5-249
5.18.2	Environmental Impacts and Assessment	5-249
5.19	Mandatory Findings of Significance	5-251
5.19.1	Cumulative Projects	5-251
5.19.2	Cumulative Impact Assessment	5-255
5.19.3	Results of Mandatory Findings	5-265
6.	Mitigation Monitoring Plan	6-1
6.1	Minor Project Changes or Variances	6-1
6.2	Dispute Resolution	6-2
7.	References	7-1
8.	Response to Comments	8-1
	Introduction	8-1
	Comment Set A California Department of Fish and Wildlife	8-3
	Responses to Comment Set A	8-8
	Comment Set B San Francisco Bay Conservation Development Commission	8-13
	Responses to Comment Set B	8-14
	Comment Set C San Francisco Public Utilities Commission	8-15
	Responses to Comment Set C	8-20
	Comment Set D NRG Potrero LLC	8-24
	Responses to Comment Set D	8-26
	Comment Set E Andrey Gusev	8-28
	Responses to Comment Set E	8-29
	Comment Set F Pacific Gas & Electric Company	8-30
	Responses to Comment Set F	8-56

Tables

Table 4-1	Transmission Line Sections, Approximate Length	4-10
Table 4-2	Submarine Cable Parameters, Approximate Distances and Depths	4-22
Table 4-3	Preliminary Proposed Construction Schedule	4-64

Table 4-4	Equipment Expected to be Used During Construction.....	4-67
Table 4-5	Applicant Proposed Measures.....	4-70
Table 4-6	Permits that May Be Required for the Embarcadero-Potrero 230 kV Transmission Project.....	4-84
Table 5.1-1	Applicant Proposed Measures Related to Aesthetics.....	5-18
Table 5.1-2	Visual Impact Significance Criteria.....	5-20
Table 5.1-3	Approximate Dimensions of Major Project Components.....	5-21
Table 5.3-1	National and California Ambient Air Quality Standards.....	5-38
Table 5.3-2	Attainment Status for BAAQMD.....	5-38
Table 5.3-3	Summary of Ambient Air Quality Monitoring Data in San Francisco.....	5-39
Table 5.3-4	Applicant Proposed Measures Related to Air Quality.....	5-42
Table 5.3-5	Estimated Average Daily Construction Emissions including Mitigation for Tier 2 Equipment.....	5-44
Table 5.3-6	Estimated Maximum Daily Construction Emissions including Mitigation for Tier 2 Equipment.....	5-44
Table 5.4-1	Street Trees along Northern Project Route.....	5-50
Table 5.4-2	Managed Fish Species (Magnuson-Stevens Act) in the Project Area.....	5-52
Table 5.4-3	Applicant Proposed Measures Related to Biological Resources.....	5-64
Table 5.5-1	Paleontological Sensitivity Ratings Employed.....	5-82
Table 5.5-2	Site Sensitivity in the Proposed Project Areas.....	5-90
Table 5.5-3	Buildings Along or Adjacent to Onshore Portions of the Proposed Route.....	5-91
Table 5.5-4	Applicant Proposed Measures Related to Cultural Resources and Paleontological Resources.....	5-94
Table 5.6-1	Significant Active and Potentially Active Faults within 50 miles of the Proposed Project.....	5-105
Table 5.6-2	Significant Historic Earthquakes.....	5-106
Table 5.6-3	Applicant Proposed Measures Related Geology and Soils.....	5-110
Table 5.7-1	Applicant Proposed Measures Related to Greenhouse Gas Emissions.....	5-124
Table 5.7-2	Estimated Construction Emissions, GHG.....	5-126
Table 5.7-3	Estimated GHG Emissions from Gas-Insulated Switchgear.....	5-126
Table 5.8-1	Applicant Proposed Measures Related to Hazards and Hazardous Materials.....	5-135
Table 5.9-1	Impaired Surface Waters in the Project Area.....	5-149
Table 5.9-2	Water Quality, San Francisco Bay, 2005-2010.....	5-149
Table 5.9-3	Sediment Quality, San Francisco Bay, 2005-2010.....	5-150
Table 5.9-4	Applicant Proposed Measures Related to Hydrology and Water Quality.....	5-159
Table 5.10-1	Zoning and Land Use Adjacent to Proposed Facilities Embarcadero-Potrero 230 kV Transmission Project.....	5-176
Table 5.10-2	Applicant Proposed Measures Related to Land Use and Planning.....	5-182
Table 5.12-1	Noise Measurements at the Northern HDD Area.....	5-196
Table 5.12-2	Applicant Proposed Measures Related to Noise.....	5-198
Table 5.12-3	Typical Noise Levels for Construction Equipment.....	5-199
Table 5.12-4	Linear Work Zone Construction Noise Levels versus Distance.....	5-199
Table 5.12-5	HDD Equipment Noise Levels after Implementation of Noise Reduction Measures.....	5-201
Table 5.12-6	Vibration Velocities for Construction Equipment.....	5-204
Table 5.14-1	Emergency Services and Law Enforcement Providers.....	5-210
Table 5.15-1	San Francisco Parks Near the Proposed Project.....	5-215

Table 5.16-1	Applicant Proposed Measures Related to Transportation.....	5-225
Table 5.17-1	Local Utility and Service Providers.....	5-234
Table 5.17-2	Applicant Proposed Measures Related to Utilities and Service Systems.....	5-238
Table 5.17-3	Existing Gas Transmission Lines Near the Proposed Route.....	5-244
Table 5.19-1	Cumulative Projects in the Project Vicinity.....	5-252
Table 6-1	Mitigation Monitoring Plan.....	6-4
Table 8-1	Comments Received on the Proposed Mitigated Negative Declaration.....	8-1

Figures

Figure 4-1	Project Vicinity.....	4-3
Figure 4-2	Project Location.....	4-5
Figure 4-3	Embarcadero Substation Area.....	4-13
Figure 4-4	Potrero Switchyard Area.....	4-15
Figure 4-5	Potential Staging Locations.....	4-17
Figure 4-6	Typical Duct Bank.....	4-19
Figure 4-7	Typical Manhole.....	4-21
Figure 4-8	Embarcadero HDD Transition Area.....	4-23
Figure 4-9	Potrero HDD Transition Area.....	4-25
Figure 4-10	Southern HDD Transition Manhole Layout.....	4-27
Figure 4-11	Geologic Profile of North Transition from Land to Marine.....	4-29
Figure 4-12	Typical Submarine Cable Layout.....	4-31
Figure 4-13a	Cross Section of the Proposed 230 kV XLPE Submarine Cable with Double Steel Armoring Design.....	4-33
Figure 4-13b	Cross Section of the Proposed 230 kV XLPE Submarine Cable with Double Copper Armoring Design.....	4-35
Figure 4-14a	Revised Site Plan for Proposed Potrero 230 kV Switchyard.....	4-38
Figure 4-14b	Revised Parcel Map for Private Land Rights Acquisition near Potrero Switchyard.....	4-39
Figure 4-15a	Revised Potrero 230 kV Switchyard East Elevation.....	4-41
Figure 4-15b	Revised Potrero 230 kV Switchyard West Elevation.....	4-42
Figure 4-15c	Revised Potrero 230 kV Switchyard North Elevation.....	4-43
Figure 4-16	Potrero Interconnection with 115 kV System.....	4-45
Figure 4-17	Hydroplow.....	4-59
Figure 4-18	HDD Outfall.....	4-65
Figure 4-19	San Francisco Downtown, Pedestrian Magnetic Field Levels.....	4-87
Figure 5.1-1	Photograph Viewpoint Locations.....	5-5
Figure 5.1-2a	Photographs of the Potrero Switchyard Site Sheet 1 of 4.....	5-7
Figure 5.1-2b	Photographs of the Potrero Switchyard Site Sheet 2 of 4.....	5-9
Figure 5.1-2c	Photographs of the Potrero Switchyard Site Sheet 3 of 4.....	5-11
Figure 5.1-2d	Photographs of the Potrero Switchyard Site Sheet 4 of 4.....	5-13
Figure 5.1-3a	Existing View from 23rd Street East of Illinois Street.....	5-23
Figure 5.1-3b	Visual Simulation from 23rd Street East of Illinois Street.....	5-25
Figure 5.1-4a	Existing View from 23rd Street at Illinois Street.....	5-27
Figure 5.1-4b	Visual Simulation from 23rd Street at Illinois Street.....	5-29
Figure 5.4-1	Subtidal Habitat.....	5-53
Figure 5.4-2	Herring Spawning and Seal Haulout.....	5-57
Figure 5.6-1	Geologic Map.....	5-115

Figure 5.6-2	Regional Active Fault Map.....	5-117
Figure 5.6-3	Seismic Hazard Map	5-119
Figure 5.8-1	Contaminated Sites and Potrero Switchyard.....	5-145
Figure 5.10-1	Embarcadero Area Existing Land Use.....	5-187
Figure 5.10-2	Potrero Area Existing Land Use.....	5-189
Figure 5.19-1	Cumulative Projects.....	5-257

Appendices

Appendix A	Emission Calculations
Appendix B	Special-status Plants and Wildlife
Appendix C	List of Preparers
Appendix D	Proof of Publication