PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

June 8, 2004 Agenda ID #3645
Ratesetting

TO: PARTIES OF RECORD IN APPLICATION 02-09-043

RE: NOTICE OF AVAILABILITY OF PROPOSED DECISION GRANTING A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO PACIFIC GAS AND ELECTRIC COMPANY TO CONSTRUCT A NEW 230 KV TRANSMISSION PROJECT

Consistent with Rule 2.3(b) of the Commission's Rules of Practice and Procedure, I am issuing this Notice of Availability of the above-referenced proposed decision. The proposed decision was issued by Administrative Law Judge (ALJ) Charlotte TerKeurst on June 8, 2004. An Internet link to this document was sent via e-mail to all the parties on the service list who provided an e-mail address to the Commission. An electronic copy of this document can be viewed and downloaded at the Commission's Website (www.cpuc.ca.gov).

Any recipient of this Notice of Availability who is not receiving service by electronic mail in this proceeding may request a paper copy of this document from the Commission's Central Files Office, at (415) 703-2045; e-mail cen@cpuc.ca.gov.

This is the proposed decision of ALJ TerKeurst, previously designated as the principal hearing officer in this proceeding. It will not appear on the Commission's agenda for at least 30 days after the date it is mailed. This matter was categorized as ratesetting and is subject to Pub. Util. Code § 1701.3(c). Pursuant to Resolution ALJ-180, a Ratesetting Deliberative Meeting (RDM) to consider this matter may be held upon the request of any Commissioner. If that occurs, the Commission will prepare and mail an agenda for the RDM 10 days before hand. When an RDM is held, there is a related ex parte communications prohibition period.

When the Commission acts on the proposed decision, it may adopt all or part of it as written, amend or modify it, or set it aside and prepare its own decision. Only when the Commission acts does the decision become binding on the parties.

Parties to the proceeding may file comments on the proposed decision as provided in Article 19 of the Commission's "Rules of Practice and Procedure." These rules are accessible on the Commission's website at http://www.cpuc.ca.gov. Pursuant to Rule 77.3 opening comments shall not exceed 25 pages.

Consistent with the service procedures in this proceeding, parties should send comments in electronic form to those appearances and the state service list that provided an electronic mail address to the Commission, including ALJ TerKeurst at cft@cpuc.ca.gov. Service by U.S. mail is optional, except that hard copies should be served separately on ALJ TerKeurst, and for that purpose I suggest hand delivery, overnight mail or other expeditious methods of service. In addition, if there is no electronic address available, the electronic mail is returned to the sender, or the recipient informs the sender of an inability to open the document, the sender shall immediately arrange for alternate service (regular U.S. mail shall be the default, unless another means – such as overnight delivery is mutually agreed upon). The current service list for this proceeding is available on the Commission's Web page, www.cpuc.ca.gov.

/s/ ANGELA K.MINKIN
Angela K. Minkin, Chief
Administrative Law Judge

ANG:tcg

Attachment

Decision **PROPOSED DECISION OF ALJ TERKEURST** (Mailed June 8, 2004)

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application of Pacific Gas and Electric Company (U 39 E) for a Certificate of Public Convenience and Necessity Authorizing the Construction of the Jefferson-Martin 230 kV Transmission Project.	Application 02-09-043 (Filed September 30, 2002)

(See Attachment A for List of Appearances.)

OPINION GRANTING A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY

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OPINION GRANTING A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY

I. Summary

This decision grants a certificate of public convenience and necessity (CPCN) to Pacific Gas and Electric Company (PG&E) to construct a new 230 kilovolt (kV) electric transmission line between PG&E's Jefferson substation and PG&E's Martin substation, along with related facilities. The facilities will be constructed in the County of San Mateo and will traverse or be adjacent to the towns of Hillsborough and Colma and the Cities of Brisbane, Daly City, San Bruno, and South San Francisco. A portion of the project will be within the San Francisco Public Utilities Commission (SFPUC) watershed near Interstate (I) 280. We adopt a tentative construction cost cap of $206,988,000 for the authorized Jefferson-Martin project.

The record demonstrates that the 230 kV Jefferson-Martin project is needed in order to allow PG&E to continue to reliably meet electric demand in the San Francisco Peninsula Area beginning in 2007. In addition, the project has diversification, economic, and environmental benefits that warrant its construction more quickly than that. All major transmission lines importing power into San Francisco currently receive power from the East Bay and travel through a single corridor from the San Mateo substation to the Martin substation. The Jefferson-Martin project will help protect the San Francisco Peninsula from events disrupting supply at the San Mateo substation and/or along the San Mateo-Martin corridor. In addition, the project will tap power originating from south of the Peninsula area, thus diversifying the source of power. We find that the Jefferson-Martin project by itself is not sufficient to support closure of the Hunters Point power plant. However, a combination of the Jefferson-Martin project and additional transmission reinforcements north of the Martin

substation and south of the Jefferson station would allow that plant to be closed, bringing additional economic and environmental benefits. For these reasons, the project is clearly necessary.

The proposed Jefferson-Martin project is characterized as having a southern segment and a northern segment, and the project could be configured in various ways through combinations of southern and northern route alternatives. In the southern segment, we choose a hybrid configuration that combines part of a southern underground alternative called Route Option 1B with a portion of PG&E's southern aboveground Proposed Project. Immediately north of the Jefferson substation, the authorized 230 kV Jefferson-Martin line will be located within Cañada Road and Skyline Boulevard, entirely underground except for an aboveground crossing of the Crystal Springs Dam. The underground line will transition to an aboveground configuration at a new intermediate transition tower west of Trousdale Drive. The 230 kV line will continue north on rebuilt towers and will be collocated with one circuit of an existing double-circuit 60 kV line. The aboveground 230 kV circuit will exit the SFPUC watershed at a new Glenview Drive transition tower, where it will connect to the underground northern segment.

The Final Environmental Impact Report (FEIR) identified the underground Route Option 1B to be environmentally superior in the southern segment, but we find that this hybrid configuration is preferable because it avoids Route Option 1B's effects on residences and businesses along Trousdale Drive and El Camino Real and is more consistent with the values and wishes of the communities along the route.

The FEIR identified two underground routes for the northern segment as both being environmentally superior, and we tentatively choose one of these routes, PG&E's Proposed Project with Route Option 4B, for the northern

segment. From the Glenview Drive transition tower, this northern segment would be constructed beneath San Bruno Avenue and would turn north into Huntington Avenue to the BART right of way. This route may be modified slightly, depending on the preference of the City of San Bruno, to avoid a planned Huntington Avenue grade separation project. From the BART right of way, the 230 kV line would turn east into the new Lawndale Boulevard, north into Hillside Boulevard, east into East Market Street, which becomes Guadalupe Canyon Parkway and crosses San Bruno Mountain. Finally, the line would turn north on Bayshore Boulevard to the Martin substation.

On June 8, 2004, the Assigned Commissioner instructed that environmental review be undertaken of two route alternatives that did not receive full analysis in the FEIR. The first alternative is the use of El Camino Real between San Bruno Avenue and Lawndale Boulevard / McClellan instead of the BART right of way, as a modification to PG&E's Proposed Project route. The second is an alternate route suggested by Daly City, in which the new 230 kV line would be collocated aboveground with the existing 60 kV line over San Bruno Mountain. Based on the results and consistent with our responsibilities under Pub. Util. Code §1002 to consider community values and other factors, we may choose to supplement the FEIR so that we may determine whether to alter the Proposed Project route to incorporate one or both of these alternatives. We instruct PG&E to not begin construction on the northern section until the evaluation of these alternatives is completed in compliance with the June 8, 2004 Assigned Commissioner Ruling.

The FEIR finds that the route as authorized for the southern segment and as tentatively authorized for the northern segment has no significant unmitigable (Class I) environmental impacts. Thus, no Statement of Overriding Considerations is needed. We adopt the mitigation measures proposed in the

FEIR, with certain minor modifications that are included in an Addendum to the FEIR. We certify the FEIR and the Addendum.

During this proceeding, there was a great deal of public interest and concern regarding potential health effects from exposure to electric and magnetic fields (EMF) that would be created by the Jefferson-Martin project. In response to these concerns, we require several changes to PG&E's preliminary EMF management plan for the Jefferson-Martin project. A significant body of scientific research has developed since we investigated EMF matters in Investigation (I.) 91-01-012, as reported in a comprehensive review of EMF studies undertaken at the Commission's direction by the California Department of Health Services (DHS). Either concurrently with this order or shortly thereafter, we plan to issue an Order Instituting Investigation to address policy implications of the DHS findings, including whether EMF characteristics of proposed transmission projects should be considered as an integral part of our environmental analysis of such projects.

II. Background

A. The Project and Environmentally Superior Alternatives

PG&E seeks a CPCN to construct a new 230 kV electric transmission line between PG&E's Jefferson and Martin substations. The major elements of PG&E's Proposed Project are:

- Installation of a new 27-mile 230 kV transmission circuit, comprised of 14.7 miles of overhead line to be installed on a rebuild of an existing 60 kV double-circuit transmission line (the southern segment), and 12.4 miles of new underground duct bank (the northern segment).
- Dismantling the existing 60 kV double-circuit tower line and rebuilding the towers to enable the east side to support a single 60 kV circuit and the west side to carry the new 230 kV circuit.

- Construction of a new transition station near the intersection of San Bruno Avenue and Glenview Drive to transition from the overhead to underground transmission segments.
- Modification of the existing Jefferson and Martin substations to accommodate the new 230 kV transmission line.
- Modification of equipment at the existing San Mateo, Ralston, Millbrae, Carolands, and Monta Vista substations, and the Hillsdale Junction switching station.

The Proposed Project would parallel I-280 for much of the southern segment, crossing Peninsula watershed lands owned by the City and County of San Francisco (CCSF). It would cross Edgewood County Park and Natural Preserve (Edgewood Park) and the Pulgas Ridge Open Space Preserve (Pulgas Ridge Preserve), and would pass near the San Mateo Highlands area of unincorporated San Mateo County and the Towns of Hillsborough, Burlingame, and Millbrae before entering the City of San Bruno.

The northern segment of the Proposed Project would route along San Bruno Avenue and the San Francisco Bay Area Rapid Transit (BART) right of way in the City of San Bruno, follow the BART right of way through the City of South San Francisco, and then route along a number of city streets through the Town of Colma, Daly City, and Brisbane to the Martin substation.

The proposed overhead segment of the 230 kV transmission line, collocated with the rebuilt 60 kV line, would be supported on lattice steel towers. The underground segment of the 230 kV circuit would consist of three cross-linked, polyethylene-insulated (XLPE) solid-dielectric, copper-conductor cables buried in a concrete-encased duct bank system. The transition station near San Bruno Avenue and Glenview Drive would be approximately 80 feet by 100 feet in size and enclosed by a masonry wall. Equipment at the transition station

would include ground grid and conduit system, a 230 kV dead-end structure, a control building, and an underground vault.

The FEIR finds that the environmentally superior alternative comprises PG&E's southern Route Option 1B in conjunction with either the Proposed Project's northern segment or a northern alternative called the Collocation Alternative. In the southern segment, Route Option 1B would be entirely underground within roadways except for the crossing of the Crystal Springs Dam. It would follow Cañada Road and Skyline Boulevard along the I-280 corridor, turning east into Trousdale Drive and then north into El Camino Real. The FEIR describes several alternative crossings of Crystal Springs Dam that would be possible within the environmentally superior alternative.

In the environmentally superior alternative, the southern Route Option 1B would join either the northern segment of PG&E's Proposed Project or the Collocation Alternative at the intersection of El Camino Real and San Bruno Avenue. The FEIR states that the environmentally superior route in this area could be modified by Mitigation Measure T-9a, in which the route would continue north on El Camino Real past San Bruno Avenue, then turn east on Sneath Lane and (for the Collocation Alternative) Tanforan Drive.

For the northern segment of PG&E's Proposed Project, the environmentally superior alternative would incorporate Route Option 4B, which would avoid Hoffman and Orange Streets by continuing north on Hillside (past Hoffman) and turning east on East Market Street.

As the second environmentally superior northern alternative, the Collocation Alternative would be located closer to the San Francisco Bay and would be routed through primarily commercial and industrial areas. It would use a portion of the route of an existing underground 230 kV transmission line through Brisbane, but would follow a new route segment through South San

Francisco and adjacent cities. The FEIR includes in the environmentally superior Collocation Alternative four route options (Route Options A, D, E, and F) developed in response to comments on the draft EIR. We describe the Collocation Alternative in more detail in Section V.B of this order.

As the FEIR recognizes, the Commission considers other factors such as cost and timing of need along with the environmental information presented in the FEIR to make the ultimate determination regarding which route (if any) is to be approved.

B. Procedural History

PG&E and the ISO report that the genesis of the Jefferson-Martin project was a December 8, 1998 outage event, which triggered an evaluation of reliability in the San Francisco peninsula by a stakeholder group sponsored by the ISO. The stakeholder group evaluated six potential transmission projects: Jefferson-Martin 230 kV, Jefferson-Hunters Point 230 kV, Jefferson-Potrero 230 kV, San Mateo-Martin 230 kV, Moraga-Potrero 230 kV, and San Mateo-Martin #4 60 kV to 115 kV conversion. The Jefferson-Martin 230 kV line was selected over the San Mateo-Martin option largely on incremental reliability benefits resulting from additional diversification of the transmission grid.

This ISO stakeholder group recommended that PG&E initiate permitting activities of the Jefferson-Martin 230 kV line, "so that the project can be in place when needed, should the alternative solution of new generation not materialize." The ISO Board of Governors approved permitting activities for the Jefferson-Martin project in October 2000 and gave final approval for addition of the project to the ISO-controlled grid on April 25, 2002.

PG&E filed its application on September 30, 2002. With its application, PG&E supplied a Proponent's Environmental Assessment. The Commission, as

Lead Agency, then retained outside consultants to conduct environmental review of the Proposed Project, pursuant to the California Environmental Quality Act (CEQA), and to examine alternatives, including the "No Project" alternative. The Commission's Energy Division oversaw the consultants' work.

A prehearing conference (PHC) was held on January 10, 2003. At the PHC, the United States Department of the Interior (DOI) stated its position that the Proposed Project is subject to the requirements of the National Environmental Policy Act (NEPA) because a portion of the project would traverse National Park Service (NPS) easements on San Francisco watershed land. As the lead federal agency for NEPA, DOI stated its preference that the Commission prepare a joint environmental document, combining NEPA and CEQA review. PG&E and CCSF stated that they do not believe that DOI has approval authority over the project or that NEPA compliance is required.

The Commission has not taken a position regarding whether DOI has federal jurisdiction over the proposed project. However, after meetings with DOI and other parties, Commission staff informed DOI on January 24, 2003 that it would not be feasible for the Commission to undertake the preparation of a joint CEQA / NEPA environmental document for the Jefferson-Martin project. Commission staff explained that at least three factors contributed to this decision: the ongoing dispute about whether the DOI has any federal jurisdiction related to the proposed project; the fact that DOI had not yet determined the scope or form of a federal NEPA document for the project; and the fact that expanding the scope of the CEQA review to comply with NEPA requirements would result in substantial delay in this proceeding. This discussion was also presented in the March 19, 2003 Scoping Memo and Ruling of Assigned Commissioner.

The Commission's Energy Division held four scoping meetings in January and February 2003 prior to selection of alternatives and preparation of the

Environmental Impact Report. It attended eight consultation meetings with agencies and local jurisdictions to discuss the Proposed Project. The Draft Environmental Impact Report (DEIR) was released on July 16, 2003. The Commission provided for wide dissemination of and public input on the DEIR. The DEIR was mailed to 117 interested parties and agencies, made available on the Commission's website and in public libraries, and handed out on compact disk at the workshops and PPHs. The Commission oversaw the mailing of 8,764 notices of the availability of the DEIR. The Notice of Release was mailed to agencies, special districts, all owners and tenants of property located within 300 feet of the proposed and alternate project sites, and County Clerks' offices. Newspaper advertisements announced all public meetings. The Commission's Energy Division held four public informal workshops on the DEIR in San Bruno and San Mateo. PG&E was required to publish and post notice about, and arrange for print and electronic media coverage of and public service announcements regarding the four public hearings. The Final Environmental Impact Report (FEIR) was released in November 2003. It was made available at 14 repository locations and distributed to parties in the proceeding and to federal, State, and local governmental agencies that commented on the DEIR, as well as to some members of the public.

The assigned administrative law judge (ALJ) held six public participation hearings in the affected communities. Seventeen days of evidentiary hearings were held between January 12 and February 5, 2004. Several parties intervened in the proceeding and participated actively during the evidentiary hearings and subsequent briefing. These parties include the following: the Commission's Office of Ratepayer Advocates (ORA), the California Independent System Operator (ISO), the City of Burlingame, Daly City, the City of San Bruno City Council and Redevelopment Agency (City of San Bruno), the City and County of

San Francisco (CCSF), the City of South San Francisco, the County of San Mateo, 280 Corridor Concerned Citizens (280 Citizens), CAlifornians for Renewable Energy (CARE), and Women's Energy Matters (WEM).[1] The City of Millbrae, Concerned Businesses East of 101 (CBE-101) and HMS Oyster Point, LLC, and Golden Gate Produce Terminal, Ltd. each sponsored a witness but did not file briefs. Genentech, Inc. (Genentech) did not participate actively in the evidentiary hearings but filed a reply brief. Numerous other groups and individuals participated in the environmental review process and commented on the DEIR, as described fully in the FEIR.

The evidentiary record was submitted on March 19, 2004 following receipt of late-filed exhibits and initial and reply briefs. The ALJ reopened the record for the receipt of load forecast information for the San Francisco Peninsula Area, as petitioned by the ISO, and for the receipt of additional information regarding construction along the Bay Area Rapid Transit (BART) right of way. The evidentiary record was resubmitted on June 4, 2004. We affirm the ALJ's ruling denying CARE and WEM motions for the receipt of additional evidence regarding biological impacts of trenching in serpentine grasslands and other matters.

C. Motions Requesting Recirculation of FEIR

On December 15, 2003, the City of South San Francisco and CBE-101 filed a motion requesting that the FEIR be recirculated. PG&E filed a response to the

[1] We do not grant PG&E's motion to strike WEM's opening and reply briefs, in which PG&E asserts that WEM's briefs misrepresent the evidentiary record and are misleading. We consider the arguments in WEM's briefs on their merits.

motion.[2] On January 9, 2004, Daly City submitted a joinder in the motion of South San Francisco and CBE-101.[3] PG&E filed an opposition to Daly City's joinder, and Daly City filed a reply brief to PG&E's opposition.

South San Francisco and CBE-101 assert that recirculation is required because the discussion in the draft EIR of the Collocation Alternative was inadequate and because the six new route options developed for the Collocation Alternative in the FEIR constitute significant new information. They also state that recirculation would allow the Commission an opportunity to make clear whether the requirement that several environmental regulatory agencies evaluate and approve construction-related disturbance to contaminated sites would make infeasible the completion of the Collocation Alternative by the summer of 2005, as required by the project description.

We disagree with South San Francisco and CBE-101 regarding the need to recirculate the FEIR. The CEQA[4] provision governing recirculation reads as follows:

> When significant new information is added to an environmental impact report after notice has been given pursuant to Sections 21104 and 21153, but prior to certification, the public agency shall give notice again pursuant to Section 21092, and consult again pursuant

[2] PG&E requests that the Commission refrain from ruling on the motion to recirculate until after a project route is approved on the basis that the motion would be moot if the Commission adopts PG&E's Proposed Project in the northern segment. PG&E also urges rejection of the motion on its merits.

[3] Daly City's joinder did not meet our filing requirements initially. It was accepted for filing on February 10, 2004.

[4] The CEQA statute appears at Cal. Pub. Res. Code § 21000 *et seq.*

> to Sections 21104 and 21153 before certifying the environmental impact report. (Cal. Pub. Res. Code § 21092.1.)

South San Francisco and CBE-101 first challenge the adequacy of the draft EIR's discussion of the Collocation Alternative. The draft EIR laid out the route of the Collocation Alternative and identified and discussed its possible environmental impacts at length. Parties were able to, and did, submit extensive and substantive comments on the Collocation Alternative. We do not find that the draft EIR was "so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded." (CEQA Guidelines § 15088.5(a)(4).[5])

We also disagree regarding the need to recirculate the FEIR based on the six new route options. An FEIR always contains new information not in the draft EIR, in the form of public comments and responses thereto. New information added to an EIR is not "significant" for purposes of triggering the recirculation requirement unless "the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project." (CEQA Guidelines § 15088.5(a).)

The route options for the Collocation Alternative added in the FEIR do not constitute significant new information for which recirculation is required. The route options would move the Collocation Alternative route only slightly, at most only a block or two. While the parties point out that Route Option A would bore under roadways and the Colma Creek Tributary, the original Collocation Alternative proposed and the draft EIR described possible environmental

[5] The CEQA Guidelines appear at California Code of Regulations Title 14, Div. 6, Chapter 3, §§ 15000 – 15387 and Appendices A – K.

impacts of the use of bores in similar conditions. The environmental impacts of Route Option E would be similar to, but less than, the impacts of the original Collocation Alternative. South San Francisco and CBE-101 describe the route options as having impacts due to "unstable fill soil" and moving underground construction work nearer to San Francisco Bay, but these are general characteristics of the Collocation Alternative that were identified and discussed in the draft EIR. We conclude that the six route options would not introduce "new significant environmental impacts" or a "substantial increase in the severity of an environmental impact," conditions which would require recirculation. (CEQA Guidelines §15088.5(a)(1) and (2).)

Nor do we see a need to recirculate the FEIR to address impacts of needed regulatory approvals on the feasibility of completion of the Collocation Alternative by the summer of 2005, one of the goals identified in PG&E's application. Noting that comments on the draft EIR identified that the Collocation Alternative would require permits from the County of San Mateo, the Bay Area Regional Water Quality Control Board and the Bay Conservation and Development Commission, South San Francisco and CBE-101 argue that the FEIR failed to analyze this issue adequately. In particular, they take issue with the allegedly conclusory statement that, "Regarding the concern that agency review of this alternative could lead to project delays, the CPUC believes that appropriate pre-construction planning and coordination by PG&E would allow this alternative to be implemented without delay" (FEIR, Vol. 3 at 662). They submit that recirculation would allow us another opportunity to address this issue.

We find that the FEIR adequately addressed permitting requirements for the Collocation Alternative. The FEIR estimated that it would take three to six months to acquire permits from the County of San Mateo and the Regional Water

Quality Control Board and also identified the need for a permit from the Bay Conservation and Development Commission. The parties recognize that CEQA does not require recirculation due to an inadequate response to comments. Even assuming arguendo that the FEIR did not completely respond to comments in this regard, parties had adequate opportunity during the evidentiary hearing process to address the effect of regulatory permitting requirements on the completion date of the project. There is no need to recirculate the FEIR to cure any supposed shortcoming in this regard.

In its joinder, Daly City proposes that an alternative routing for the northern segment of the Proposed Project be developed and added to the FEIR and that the FEIR then be recirculated for comment. This alternative routing would collocate the new 230 kV line, in either an underground or overhead configuration, with the existing Jefferson-Martin 60 kV line over San Bruno Mountain. PG&E opposes Daly City's request as untimely and also contends that Daly City's new alternative is likely infeasible from regulatory and project timing perspectives.

Daly City explains that it is proposing study of this alternative comparatively late in the process because, initially, it was not aware that it could propose such alternative routes and, later, its concerns regarding proximity of the Proposed Project to Daly City schools were assuaged by the draft EIR's identification of the Collocation Alternative as the sole environmentally superior route. It is making its current proposal because the FEIR has now identified the northern portion of the Proposed Project, including Route Option 4B,[6] as also

[6] Daly City notes that Route Option 4B is immediately adjacent to two Daly City schools that would not be affected by PG&E's proposed Route Option 4A, although two other

Footnote continued on next page

environmentally superior and because several parties strongly object to the Collocation Alternative. Daly City states that its proposal is intended to "solve pitting schools, cities and businesses against one another" and asks that the Commission consider this alternative to "keep( ) peace in North San Mateo County."

As Daly City notes, in developing its Proposed Project PG&E considered an option that would rebuild the existing overhead line that traverses San Mateo Mountain but rejected it as infeasible due to land use conflicts and potentially significant adverse environmental impacts on San Bruno Mountain. No party suggested an alternative traversing San Bruno Mountain during the alternatives screening process, nor is such an alternative mentioned in the draft EIR or the FEIR.

As the FEIR notes, one of the most important aspects of the environmental review process is the identification and assessment of reasonable alternatives that have the potential for avoiding or minimizing the impacts of a Proposed Project. CEQA guidelines emphasize the selection and analysis of a reasonable range of feasible alternatives. At the same time, an EIR need not consider every conceivable alternative to a project. (CEQA Guidelines § 15126.6(a).) The FEIR contains full analysis of several alternatives for the northern segment of the Proposed Project. The Collocation Alternative would avoid all, and Route Option A of the Proposed Project would avoid most, of the impacts that Daly City fears for its schools. We find these alternatives, along with the other

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Daly City schools would be affected regardless of whether Route Option 4A or 4B is chosen.

alternatives considered for the northern segment of the Proposed Project, to constitute a reasonable range of feasible alternatives, as required by the CEQA guidelines. As a result, it is not necessary to amend the FEIR as Daly City suggests or to recirculate the FEIR for comments on Daly City's suggested alternative. In Section VIII.B, we certify the FEIR as in compliance with CEQA. Based on further analysis, we may undertake a discretionary effort to supplement the FEIR to incorporate analysis of an overhead route for the 230 kV line collocated with the existing 60 kV Jefferson-Martin line across San Bruno Mountain as well as an El Camino Real alternative as discussed elsewhere in this order.

D. Scope of Proceeding

In March 2003, the Assigned Commissioner found that the scope of this proceeding includes the following as to the proposed project using PG&E's preferred route and configuration, alternative routes and configurations, the No Project alternative, and non-wires alternatives:

- Need for the project (Pub. Util. Code § 1001), including consideration of the decision by the ISO that the project is needed to maintain system reliability.
- Consideration of the following factors contained in Pub. Util. Code § 1002:
  1) Community values;
  2) Recreational and park areas;
  3) Historical and aesthetic values; and
  4) Influence on the environment
- Consideration of whether, pursuant to General Order (G.O.) 131-D, the project promotes the safety, health, comfort, and convenience of the public.
- Consideration, pursuant to G.O. 131-D, of measures to reduce the potential exposure to electric and magnetic fields (EMFs) generated by the proposed facilities.

- Consideration, pursuant to the California Environmental Quality Act (Public Resources Code § 21000 *et seq.*), of significant effects on the environment of the project, alternatives to the project, the manner in which significant environmental effects can be mitigated or avoided, and whether economic, social or other conditions make it infeasible to mitigate significant effects on the environment.
- The appropriate planning horizon to use in evaluating need for the project.
- How PG&E will comply with Pub. Util. Code § 625.
- Effect on economic development.
- Impacts on the transmission grid and other transmission users.
- Cost effectiveness and cost allocation.
- Costs, and advisability and amount of a cap on project cost.

III. Overview of Positions of the Parties

During the course of the proceeding, PG&E changed its position, so that it now recommends that the new Jefferson-Martin 230 kV line be constructed along what it calls the All-Underground Alternative (AUA) route, which would consist of PG&E's underground Route Option 1B in the southern segment and PG&E's Proposed Project in the northern segment. PG&E states that, given the risk of a veto by the NPS and the FEIR's conclusions regarding the environmentally superior route, PG&E supports the Commission's selection of the AUA despite the approximately $24 million increased capital cost compared to the Proposed Project.

The ISO states that it has found the Jefferson-Martin project will be needed by 2006 to meet applicable reliability criteria and, therefore, urges the Commission to expeditiously grant PG&E's application.

ORA recommends that the Commission include the four combustion turbines owned by CCSF in determining the appropriate supply forecast for the

project area and, consequently, the need for the Jefferson-Martin project. ORA submits that either Jefferson-Martin or the CCSF turbines can meet reliability needs in the project area. It is concerned that, should the CCSF turbines and Jefferson-Martin both come online by 2006, ratepayers will overpay for reliability.

CCSF supports the Jefferson-Martin project as a cost-effective way to increase electric grid reliability for San Francisco and the upper San Francisco Peninsula. CCSF maintains that the project will help reduce energy costs by reducing reliability must run (RMR) costs, eliminating the need for air emission equipment, and reducing the potential for economic loss caused by a blackout. CCSF supports Route Option 1B in the southern segment, which it states would eliminate visual and biological impacts to the San Francisco Peninsula watershed.

WEM is working to close the Hunters Point power plants and is concerned that the Jefferson-Martin project may greatly benefit PG&E but actually hurt the Bayview Hunters Point and Potrero neighborhoods. It points to studies that indicate that the addition of Jefferson-Martin could create constraints elsewhere in the transmission system that would reduce rather than increase the load serving capability (LSC) of the system in San Francisco. PG&E's current transmission expansion plan indicates that those constraints will be corrected by 2008. WEM is concerned that Hunters Point may have to keep running in the meantime.

CARE supports the Jefferson-Martin project as an opportunity to increase the transmission capacity of San Francisco while eliminating the need for the Hunters Point and Potrero power plants. It supports the AUA as the configuration for the Jefferson-Martin project with the least environmental

impact and without regulatory delays due to federal compliance issues and other obstacles.

280 Citizens maintains that there is no current need for the Jefferson-Martin project and there will be no need under reasonable planning assumptions until after 2012. 280 Citizens maintains that high voltage transmission lines are fundamentally inconsistent with residential land uses and recommends that, if the project is approved, the Commission adopt the PUA configuration or a variation thereof in the southern segment. Because of concerns regarding EMF exposure, 280 Citizens asks that the Commission adopt a standard that EMF from the existing 60 kV and new 230 kV lines should not exceed 1 milligauss (mG) at residential property boundaries.

The County of San Mateo opposes Route Option 1B because of its placement through the highly populated area along Trousdale Drive and El Camino Real. San Mateo takes issue with PG&E's assertions that siting choices are constrained by the need for construction to be completed by the end of 2005 and also by NPS concerns. San Mateo suggests that the most appropriate alternative may be one of the hybrid alternatives which minimizes biological and visual impacts in the southern portion of the watershed but still avoids placing the line adjacent to the school, day care center, hospital, residences, and commercial uses on Trousdale Drive and El Camino Real.

On September 10, 2003, the mayors of the cities of Burlingame, Millbrae, and San Bruno sent a joint letter stating a compromise position that the only acceptable alternative for the combined communities is one that goes west of Skyline Boulevard and uses Sneath Lane. This alternative would be a combination of the PUA and PG&E's proposed northern route except that it would use the Sneath Lane transition station alternative.

The City of Burlingame supports the PUA and states that it would also support the MPUA. It is concerned that the existing 60 kV Jefferson-Martin line runs right behind Burlingame neighborhoods and that, in PG&E's Proposed Project, the existing towers would be replaced with much taller towers. It is also concerned that Route Option 1B would leave the current 60 kV transmission line in place and would install the 230 kV line in other residential neighborhoods within the city, in particular, Skyline Boulevard, Trousdale Drive, and El Camino Real. Burlingame submits that, if the Commission approves Route Option 1B, it must ensure that appropriate mitigation measures are undertaken, including measures Burlingame requests in addition to those in the FEIR.

The City of Millbrae points to a series of major construction projects that have disrupted its commercial district around El Camino Real. It opposes the use of El Camino Real for the Jefferson-Martin project, stating that this alternative would cause even more severe and prolonged disruption than the previous projects.

The City of San Bruno opposes the proposed San Bruno Avenue transition station site as counter to the city's Redevelopment Plan, which aims to turn the area into a gateway to San Bruno characterized by multifamily housing, retail opportunities, and the nearby state parkland. San Bruno states that it would support either elimination of the need for a transition station, such as Route Option 1B, or another location for a transition structure in San Bruno.

As described in Section II.C, Daly City proposes a northern alternative to both the Proposed Project and the Collocation Alternative, which would collocate the new 230 kV line with the existing Jefferson-Martin 60 kV line across San Bruno Mountain. If this alternative is not explored, Daly City supports the Collocation Alternative.

The City of South San Francisco supports the northern segment of PG&E's Proposed Project and strongly opposes the Collocation Alternative. South San Francisco maintains that the northern segment of PG&E's Proposed Project would be least disruptive because it would be constructed in streets or in recently disturbed construction areas, would only minimally affect residences, and would raise little concern regarding toxic contamination. CBE-101 and Genentech express similar views. Golden Gate Produce Terminal opposes the portion of the Collocation Alternative, as originally proposed, that would disrupt its operations.

IV. Project Need

PG&E asserts that the Jefferson-Martin project is necessary for four reasons: (1) to reliably meet projected electric demand in the Project Area; (2) to satisfy applicable planning criteria; (3) to diversify the transmission system serving the Project Area; and (4) to implement the ISO Board of Governors' April 2002 Resolution approving the proposed Jefferson-Martin project for addition to the ISO-controlled grid. In this section, we describe the reliability planning criteria that are applicable and then use them, along with other considerations, to assess need for the Jefferson-Martin project.

PG&E and the ISO use different geographical areas in assessing need for the Jefferson-Martin project. The area PG&E refers to as the Project Area consists of the City and County of San Francisco, Burlingame, Millbrae, San Bruno, South San Francisco, Brisbane, Colma, Daly City, Pacifica, and Hillsborough. The ISO evaluates need for a broader San Francisco Peninsula Area, which the ISO characterizes as the area north of Palo Alto or north of the Ravenswood substation.

A. Reliability Evaluation

1. Reliability Standards

The ISO's reliability criteria incorporate national North American Electric Reliability Council (NERC) and regional Western Electricity Coordinating Council (WECC) planning standards as well as local reliability criteria, in particular, certain modifications for the San Francisco Peninsula Area. The ISO Grid Planning Standards include reliability criteria for the forecasted operation of the transmission system for several scenarios or categories of system conditions, as follow:

- Category A (base case). Normal ratings of equipment must not be exceeded with all generators, lines, and transformers in service and with no loss of load.
- Category B. Emergency ratings of equipment must not be exceeded with the loss of (a) a single circuit, generator, or transformer or (b) a single circuit and a single generator. Loss of load is not permitted unless the ISO Board of Governors decides that a capital project alternative is clearly not cost effective.
- Category C. Emergency ratings of equipment must not be exceeded with the loss of (a) a single circuit, generator, or transformer, or (b) a single circuit and a single generator; with that loss followed by manual adjustments and then the loss of another single circuit, generator, or transformer. Loss of load is allowed unless the ISO Board of Governors decides that the capital project is clearly cost effective.

The ISO's San Francisco Greater Bay Area Generation Outage Standard[7] modifies the Category A base case to require that normal ratings of equipment

[7] The ISO explains that it uses the standard because of the unusually large concentration of generation units in the greater Bay area and the fact that historical forced outage rates for units in the Bay area are significantly higher than the industry averages for similar units.

must not be exceeded with three units out of service: the largest single unit on the San Francisco Peninsula, one 50 MW combustion turbine on the San Francisco Peninsula, and one 50 MW combustion turbine in the Greater Bay Area but not on the San Francisco Peninsula.[8]

In addition, PG&E and the ISO apply grid planning criteria called the Supplementary Guide for Application of the Criteria for San Francisco. This Supplementary Guide, which pre-dates the ISO, requires that emergency ratings of equipment not be exceeded, with no loss of load, under four specific sets of conditions. PG&E and the ISO consider the Supplementary Guide to be a modification of Category C requirements.

280 Citizens takes issue with the Supplementary Guide, stating that it was developed by PG&E, not the ISO, and is significantly more stringent than the ISO's planning standards in that the Supplementary Guide does not allow loss of load in certain contingencies under which the ISO's Category C would allow outages. PG&E rebuts 280 Citizens in this regard, pointing out that under Category C, involuntary load interruptions are not acceptable if the ISO Board has decided that the capital project being considered is clearly cost effective. PG&E asserts that, in approving the Jefferson-Martin project, the ISO found it to be cost effective.[9] In its view, loss of load is thus not allowed under either the ISO Category C criteria or the Supplementary Guide criteria.

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[8] Contingency analyses, e.g., Categories B and C, would be conducted with reference to this base condition, except that when screening for the most critical single generation outage, only units that are not on the San Francisco Peninsula would be considered.

[9] Regarding the determination of cost-effectiveness, PG&E states that it submitted "decision quality cost estimates" to the ISO on April 4, 2002 before the ISO Board approved the Jefferson-Martin project. At that time, PG&E estimated the cost to be $173 million for the Proposed Project and $213 million for the AUA.

280 Citizens contends that the contingency event modeled by PG&E to determine compliance with the Supplementary Guide reliability criteria has a miniscule probability of occurrence, which it estimates to be less 0.0000000257. PG&E responds that it is required to meet the standard, regardless of whether the contingency is a low probability event. PG&E explains that the established criteria are not based on probabilities of contingency events occurring, but on the reality that if a cable failure were to occur, it could be out up to several weeks.

280 Citizens point to the ISO's February 7, 2002 Planning Standards, which include a new transmission standard that considers the likelihood of certain contingencies occurring for planning purposes. PG&E responds that quoted standard deals with the preparation of annual transmission expansion plans and is inapplicable in this case. The ISO maintains that it and PG&E are compelled by § 345 to plan the grid in accordance with national and regional reliability criteria which are deterministic, that generally accepted probabilistic standards do not yet exist, and that 280 Citizens does not propose any in this proceeding.

2. Generation Capacity

There are currently three major generation facilities in the Project Area: PG&E's Hunters Point power plant, Mirant Corporation's (Mirant) Potrero power plant, and United Airlines' cogeneration facility. Hunters Point and Potrero both have steam turbines (Hunters Point Unit 4 and Potrero Unit 3) and combustion turbine units. Current generation capacity in the Project Area includes the following:[10]

[10] 280 Citizens reported ISO data showing a combined capacity of 635.5 MW for these plants. However, that total represents maximum capacity under ideal temperature conditions, which are unlikely to occur during peak load conditions. We agree with

Footnote continued on next page

Generating Unit	Net Rating (MW)
Hunters Point Unit 1	50
Hunters Point Unit 4	163
Potrero Unit 3	207
Potrero Unit 4	50
Potrero Unit 5	50
Potrero Unit 6	50
United Co-gen	28
Total	598

In evaluating need for the Jefferson-Martin project, all parties include the existing Potrero units in the resource mix; they exclude the previously-planned Potrero Unit 7 since Mirant has withdrawn its Application for Certification at the CEC. Parties disagree regarding the continued operation of Hunters Point units and inclusion of planned CCSF combustion turbines.

Hunters Point. In assessing the reliability need for the Jefferson-Martin project, PG&E and the ISO assume that both units at Hunters Point will be shut down by the end of 2005. The ISO has stated, however, that if Jefferson-Martin is not operational by the end of 2005 or if new generation has not come on line, it would require Hunters Point units to remain on-line under a "reliability must run" (RMR) contract.

Under the terms of a 1998 settlement agreement with CCSF, PG&E is obligated to "permanently shut down the Hunters Point Power Plant as soon as the facility is no longer needed to sustain electric reliability in San Francisco and the surrounding area and the Federal Energy Regulatory Commission (FERC)

PG&E and the ISO that the maximum capacity levels should not be used for transmission planning purposes.

has authorized PG&E to terminate PG&E's Reliability Must Run contract for the facility." The Commission approved this agreement in D.98-10-008. The ISO and PG&E assert that inclusion of Hunters Point in the supply forecast would defeat the intent of the settlement agreement, because its inclusion would delay the perceived need for an alternative resource. The ISO maintains that new resources are built to attain planning goals, which, in the ISO's view, include closure of both units at Hunters Point.

Another concern with Hunters Point arises because the Bay Area Air Quality Management District (BAAQMD) will implement decreasing nitrogen oxide (NOx) emission limits beginning on January 1, 2005. For Unit 4 (constructed in 1958) to continue operations, PG&E must either undertake a $15 million retrofit to install Selective Catalytic Reduction equipment or obtain Interchangeable Emission Reduction Credits (IERCs) from BAAQMD. PG&E has received IERCs for Unit 4 for use through 2005 and states that, if necessary, it will seek additional IERCs to keep Unit 4 operational beyond 2005. If Unit 4 continues to operate, it is expected that all available IERCs would be consumed by the end of 2008. Unit 1 (constructed in 1976) will meet the new NOx standards, although other BAAQMD regulations limit its operation to no more than 877 hours per year.

The ISO argues that both Hunters Point units should be excluded from the supply forecast for environmental, economic, and mechanical considerations, in addition to the settlement agreement. It states that Hunters Point Unit 4 is at or beyond the useful life of generating units of similar vintage and type and is six times as likely to suffer a forced outage than the general generation portfolio in the ISO control area, while Hunters Point Unit 1 is approximately three times more likely than average to be offline. The ISO expects that Hunters Point would require significant and increasing investment to continue operations.

CARE supports the closure of both units at Hunters Point. CARE submits that Hunters Point disproportionately affects the health and well being of San Francisco's Bayview Hunters Point neighborhood. CARE explains that this neighborhood has the highest pollution emissions in the city and the highest asthma hospitalization rate—twice the citywide average. CARE maintains further that the Hunters Point plant has degraded the Bay ecosystem and is a contributor to light pollution in the area.

280 Citizens states that it shares the goals of other parties in this proceeding to shut down Hunters Point Unit 4. 280 Citizens maintains, however, that generation should continue to be available from Unit 1 and, if necessary, could be available from Unit 4 through 2008. ORA believes that it is reasonable to assume that at least Unit 4 will likely not operate beyond 2005.

CCSF turbines. The State of California received four 45 MW gas turbines as part of a settlement with Williams Energy Company and has made these turbines available to CCSF for siting within the San Francisco/Peninsula areas. ORA and 280 Citizens argue that the CCSF turbines should be counted among the available resources in analyzing need for the Jefferson-Martin project. PG&E, the ISO, and CCSF disagree.

CCSF reported that it was still in the process of identifying possible sites for the turbines and had not filed an Application for Certification with the CEC. Residents of southeast San Francisco oppose siting the turbines in their neighborhoods.[11] CCSF states that, particularly in light of this opposition, it is not certain that the turbines will be sited and constructed.

[11] A civil rights complaint by residents of the Bayview-Hunters Point community requests the United States Department of Energy to require that the CCSF turbines not be sited in Bayview Hunters Point.

ORA and 280 Citizens believe that the combustion turbines likely will be sited and operational by 2006, based on the value of the turbines, CCSF's power purchase agreement with the California Department of Water Resources, and CCSF's stated intent to file an Application for Certification at the CEC by March 2004. ORA points out further that CCSF's Electricity Resource Plan includes the addition of 150 MW of new generation by 2004 and 250 MW by 2008. The CCSF turbines could provide 180 MW of that capacity.

PG&E and the ISO assert that exclusion of the CCSF turbines from the resource mix is consistent with ISO Grid Planning Committee Guidelines, the Commission's Valley-Rainbow decision, and prudent transmission planning principles. According to the ISO committee, in five-year planning cases, only generation that is under construction with a planned in-service date within the five years should be considered. In ten-year planning cases, new generation projects that have received regulatory approval may be included. The ISO asserts that in the Valley-Rainbow proceeding the Commission articulated a "bright-line and prudent test" which the CCSF turbines do not satisfy:

> Standard industry practice indicates that we should include proposed generating units that are under construction or have received regulatory permits in the resource mix for transmission planning purposes unless there is compelling evidence that the future of such plants is in question. (D.02-12-066, *mimeo.* at 33.)

3. Transmission Capacity

In its power flow analyses, PG&E included transmission projects in the Project Area that either have ISO approval or are minor projects that do not require ISO approval and that are expected to be in place by 2006. The ISO includes all transmission projects that have been approved by the ISO and are included in PG&E's annual expansion plan for 2003.

280 Citizens notes that PG&E has re-rated some but not all of the San Mateo-Martin 115 kV lines and has not assigned emergency ratings to any of these lines, although other PG&E transmission facilities have such emergency ratings. 280 Citizens suggests that the design carrying capacity of the overhead portions of each of these lines could be increased to 261 MVA using a four-foot-per-second wind speed and series reactors to balance the load. It suggests that the line ratings for the underground "dips" where the lines cross a highway could be adjusted to 231 MVA, or 261 MVA under emergency conditions. 280 Citizens concludes that re-rating these lines would increase the calculated LSC into the Project Area and that assigning emergency ratings would further increase the LSC. PG&E responds that the use of series reactors to balance loads as 280 Citizens suggests is experimental and problematic. PG&E also explains that the undergound "dips" could not be given an emergency rating of 261 MVA because they are built with a high-pressure gas pipe inside another larger steel pipe and without sufficient ventilation to dissipate the added heat generated by a higher loading.

WEM joins 280 Citizens in expressing concern regarding the capacity of existing lines in the San Mateo-Martin corridor. WEM asserts that, if emergency ratings were established at 115% of normal, the corridor transmission system is capable of serving 1225 MW of load. PG&E responds that the 115% figure is hypothetical and that WEM provided no evidence showing it is prudent to assume, as WEM does, a 100% utilization of all transmission lines.

PG&E submits that, even if the San Mateo-Martin lines could be re-rated as 280 Citizens and WEM hypothesize, the suggestion that such re-rates should be assumed in analyzing need for the Jefferson-Martin project ignores the fact that no such re-rates are currently planned. PG&E cites D.02-12-066 as

recognizing that prudent resource planning does not assume transmission upgrades that have not occurred and are not planned.

4. Distributed Generation, Energy Conservation, and Demand Response Programs

PG&E explains that its load forecasting methodology relies on historical load data, which reflects the absence of demand resulting from distributed generation, energy efficiency, energy conservation, and demand management programs. It maintains, therefore, that the effect of these factors based on growth rates consistent with past growth is reflected in the system load forecasts. Except for conservation, future programs are not explicitly included in the forecasting process. The ISO agrees that PG&E's methodology is reasonable.

280 Citizens and WEM assert that distributed generation, energy efficiency, energy conservation, and demand response programs were not appropriately considered in assessing need for the Jefferson-Martin project. WEM advocates a rapid increase in locally-based renewables, which WEM states would avoid the need for new transmission.

280 Citizens references goals in CCSF's Electricity Resource Plan of achieving more than 180 MW of new energy efficiency and distributed generation in 2004 and more than 420 MW by 2008, and asserts that, because these amounts are part of a new initiative, they would not be reflected in historical load growth data. 280 Citizens also points to the Energy Action Plan's goals of increasing conservation and energy efficiency and meeting energy needs first by renewable energy resources and distributed generation.

The ISO replies that the goals in the Electricity Resource Plan are commendable, but wholly speculative. PG&E states that it is not prudent transmission planning to assume that load reduction will occur at levels not proven out in the historical data. PG&E argues in addition that it is consistent

with the ISO's guidelines and the Valley Rainbow decision to exclude consideration of possible, but unknown, distributed generation and other projects from supply forecasts.

5. Load Forecasts

PG&E presented three load forecast scenarios for the Project Area: a "high" load forecast developed in September 1999, a "medium" forecast developed in December 2000, and a "low" forecast prepared in August 2002. These forecasts were based on 1-in-10 year weather conditions,[12] and PG&E updated them during the proceeding based on 2002 peak load data. PG&E prepared a new "low" forecast and recalibrated the other two forecasts to the temperature-adjusted 2002 peak load. The updated "medium" and "high" forecasts contain the previously forecasted growth patterns for years after 2002. PG&E submits that it is prudent to use all three load forecasts in assessing need for the Jefferson-Martin project, and to assign equal probabilities to each of the load growth scenarios.

PG&E's updated "low" load growth forecast is the same forecast used in PG&E's March 2003 Electric Grid Expansion Plan. The ISO states that it independently validated the reasonableness of this forecast in its 2003 grid planning process. The ISO based its analyses and testimony on PG&E's March 2003 forecast results, but for the San Francisco Peninsula Area since it analyzes need within that broader area. The March 2003 load forecasts for the Project

[12] The ISO's Grid Planning Standards require that transmission studies addressing local load serving concerns utilize a 1-in-10 year extreme weather load level, whereas studies focusing on regional facilities, i.e., major interties, may use a less stringent 1-in-5 year extreme weather load level. The ISO views more rigorous local area requirements as necessary because fewer options exist to mitigate performance concerns.

Area (Exhibit 4) and the total San Francisco Peninsula Area (Exhibit 171) are summarized in Table 1.

Table 1

Load Forecasts for PG&E's Project Area
and the San Francisco Peninsula Area
(MW)

Year	Project Area	San Francisco Peninsula Area
2003	1243	1857
2004	1266	1882
2005	1285	1915
2006	1306	1949
2007	1329	1978
2008	1349	2005
2009	1365	2027
2010	1381	2050
2011	1396	2070
2012	1412	2092

PG&E's "medium" forecast exceeds the "low" forecast in the Project Area by 80 MW in 2006; its "high" forecast exceeds the "low" forecast for that year by 103 MW. The record does not contain comparable "medium" and "high" forecasts for the San Francisco Peninsula Area.

The ISO witness testified that PG&E's March 2003 forecast is the appropriate demand forecast to use in assessing Jefferson-Martin. In briefs, the ISO states that the March 2003 forecast may be conservative because it reflects potential load growth during a period of economic downturn and future load may exceed the forecast. The ISO now suggests that giving weight to the previous higher forecasts, as PG&E recommends, may be prudent.

280 Citizens criticizes PG&E's load forecasts as routinely over-forecasting demand in recent years. To the extent the Commission relies on any

of PG&E's load forecasts, 280 Citizens supports use of the "low" forecast, since it is based on the most recent economic and household growth projections and longer-term effects of the energy crisis. 280 Citizens maintains, however, that the "low" forecast still overstates future load growth, partly because it does not account for increases in distributed generation, energy conservation, and demand reduction programs. PG&E responds that, when the California economy recovers, the demand forecast will again change, with demand perhaps growing at or near the previous pace. PG&E points out that, if the 2003 peak is temperature-normalized, PG&E's "low" forecast actually under-predicted load growth in 2003 by 3 MW (which we note is about 0.2%).

6. Parties' Reliability Need Analyses

The parties used two different types of analyses in assessing the reliability need for the Jefferson-Martin project: LSC (load serving capability) studies and power flow analyses. LSC is the highest load level that can be served in an area by the electrical transmission system into the area and available generation within the area, without violating the relevant reliability criteria. Power flow analyses model the transmission system under specified load and contingency conditions to determine if any elements are overloaded and reliability standards violated.

In an LSC study completed in July 2003, the ISO examined the entire San Francisco Peninsula Area, not just the Project Area as defined by PG&E, explaining that transmission constraints "downstream" could limit the LSC regardless of the capability of the transmission system closer to the load. The ISO's LSC study applied the ISO's reliability criteria, including the San Francisco Greater Bay Area Generation Outage Standard and the Supplementary Guide as described in Section IV.A.1.

The ISO's LSC study analyzed and provided LSC results for 37 different scenarios. Table 2 summarizes scenarios that are most relevant to this proceeding. These scenarios assume that certain base case upgrades[13] as well as certain re-rates and upgrades south of the San Mateo substation[14] are undertaken, unless indicated otherwise.

Table 2

Selected ISO Load Serving Capability (LSC) Study Scenarios

No.	Description	SF Peninsula Area LSC
02	Hunters Point (HP) retired, only base case upgrades	1596
03	HP operational, only base case upgrades	1971
11	HP retired, Jefferson-Martin (J-M) operational	1536
12	HP & J-M operational	2081
14	HP retired, J-M & internal cable projects (ICP) operational	2101
15	HP, J-M & ICP operational	2121
26	Present day: HP operational, no upgrades	1876
28	HP #4 retired; HP #1 operational	1731
29	HP #4 retired; HP #1 and ICP operational	1811
33	HP #4 retired; HP #1 & J-M operational	1666
34	HP #4 retired; HP #1, J-M, & ICP operational	2106

The ISO's LSC study identified and discussed that the ability of the Jefferson-Martin project to contribute to the LSC of the San Francisco Peninsula Area is limited by current transmission constraints south of the San Mateo

[13] The assumed base case includes the Hunters Point-Potrero transmission project, which has been approved by the ISO and is being considered in A.03-12-039, as well as other projects that are under construction or completed.

[14] The assumed upgrades and re-rates south of Martin include projects that are either under construction or completed.

substation and within CCSF's 115 kV cable system.[15] It concludes that reinforcements of both the transmission system south of the San Mateo substation and the 115 kV cable system within San Francisco are needed if the Jefferson-Martin project is to be used to reduce the amount of generation within San Francisco.[16]

To determine the maximum potential increase in LSC that could be obtained due to the Jefferson-Martin project, the LSC study undertook a separate analysis focused on only the San Mateo-Martin corridor. That separate analysis indicated that, with Hunters Point Unit 4 shut down, the Jefferson-Martin project could add up to 351 MW of capacity to the San Mateo-Martin corridor if all relevant transmission constraints to the north and south were removed. The ISO states that solutions to some of these transmission constraints are being developed but that some have not been addressed in PG&E's current transmission expansion plan. PG&E reports it is pursuing the re-rating of internal 115 kV cables within San Francisco and a new Hunters Point-to-Martin cable. In addition, PG&E has begun the preliminary step of asking ISO approval of a new Martin-to-Mission cable. PG&E states that this new cable project may not be needed until 2011, but that it plans to proceed with permit acquisition in case the project is needed earlier.

In its testimony in this proceeding, the ISO undertook and reported two additional LSC calculations. The additional analyses differ from the July 2003

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[15] Concern about these constraints was the centerpiece of WEM's participation in this proceeding.

[16] A comparison of scenarios 11 and 14 in the preceding table supports this conclusion. The internal cable projects considered in the LSC study include possible Martin-Mission (HX-1), Potrero-Mission (AX-2), and Potrero-Martin (AH-1) 115 kV projects.

LSC study in that they include two additional transmission upgrades south of the Martin substation that are in PG&E's 2003 Expansion Plan. Both of the new LSC calculations assume that Hunters Point is retired; one assumes that the Jefferson-Martin project is not built whereas the other assumes it is built. The ISO compares the LSC results without Jefferson-Martin (1862 MW) to the San Francisco Peninsula Area load forecast for 2006 (1949 MW) and concludes that the Jefferson-Martin project is needed by the end of 2005 to ensure that the projected load can be served reliably. The ISO's second calculation, which includes Jefferson-Martin and assumes that there are no transmission constraints within San Francisco,[17] indicates an LSC of 2092 MW, which would be sufficient to meet the forecasted area demand through 2012 if all transmission constraints within San Francisco were removed.

PG&E ran power flow analyses for the Project Area using ISO reliability criteria and 2006's "high," "medium," and "low" load forecasts, both with and without the Jefferson-Martin project. PG&E assumed that the Hunters Point units would be retired by the end of 2005 and that the CCSF combustion turbines would not be constructed by then. PG&E reports that its power flow analyses indicate that the Jefferson-Martin project would be needed in 2006 to avoid overload conditions, for all three load forecasts.

ORA states that scenarios 32 and 34 in the ISO's LSC study mirror ORA's assumptions, including that Hunters Point Unit 4 is retired and Unit 1 remains operational. ORA concludes that the CCSF turbines would provide a solution to the reliability problem in the near term, through 2006-2008, while Jefferson-Martin would provide a longer-term solution beyond 2008. ORA is

[17] Tr. at 2663 and 2671; Ex. 165, Attachment 2.

concerned that, should both the CCSF turbines and Jefferson-Martin come online by 2006, which it believes is likely, ratepayers will overpay for reliability since either project would meet near-term reliability needs in the area.

280 Citizens submits that PG&E's own calculations indicate that, if Hunters Point Unit 4 (but not Unit 1) is retired and the CCSF turbines are operational, Jefferson-Martin would not be needed under PG&E's "low" forecast through at least 2012. Additionally, if both Hunters Point Units 1 and 4 remain operational (but the CCSF turbines are not built), there would be no need for the Jefferson-Martin project until 2014 under PG&E's "low" forecast, 2009 using the "medium" forecast, and 2008 using the "high" forecast. 280 Citizens emphasizes that these conclusions are reached using PG&E's planning contingencies and load forecasts, both of which 280 Citizens contests.

280 Citizens also conducted its own power flow analyses for the Project Area using PG&E's planning contingencies and "low" load forecast for 2006. 280 Citizens' power flow studies indicate that, without the Jefferson-Martin project, PG&E would not experience overload conditions in 2006 if Hunters Point Unit 4 is retired and either Unit 1 remains in service or the four CCSF combustion turbines are put into service. PG&E and the ISO point out, however, that 280 Citizens' power flow studies show a 99.7% loading on one 115 kV circuit in the scenarios assuming Hunters Point Unit 1 remains in service, which they assert is not a reassuring margin of safety.

B. Delay or the No Project Alternative

The scoping memo required PG&E to describe its plan of action should the Jefferson-Martin project not be completed by September 2005. PG&E responds that its plan of action would depend on whether the Commission approves the project and there are simply construction-related delays, or denies the CPCN. If

there are construction-related delays, PG&E expects that the ISO would require PG&E to delay shut down of Hunters Point until the Jefferson-Martin line becomes operational. If the Commission declines to issue a CPCN for the project, PG&E expects that the ISO would require PG&E to continue running Hunters Point until new generation is constructed within the Project Area. PG&E states that it would have to consider whether to attempt to obtain IERCs available for Unit 4 up through 2008 and / or commence the process to retrofit Unit 4's emission control equipment.

In accordance with CEQA requirements, the EIR evaluates the No Project Alternative in addition to route alternatives. In essence, this alternative examines environmental impacts if a project is not approved and built.

The FEIR states that its No Project alternative is based primarily on an April 18, 2003 letter from the ISO to PG&E and CCSF, which identified future requirements that would allow retirement of Hunters Point Unit 4. The requirements in that letter do not include construction of the Jefferson-Martin project. Consistent with that letter, the components of the FEIR's No Project Alternative include the following:

- Generation. The four CCSF turbines would be installed and Hunters Point Unit 4 would be closed.
- System Upgrades. Re-rating and upgrading of certain transmission lines, and installation of a new transformer would occur.
- System Improvements. PG&E system improvements would be made, including the conversion of San Mateo-Martin #4 from 60 kV to 115 kV and the installation of a Potrero-Hunters Point 115 kV underground cable.
- System Management and Planning. PG&E and the ISO would continue to implement an Interruptible Load Program, demand-side management would be encouraged. Curtailment

of electric service could be required in worst-case demand growth scenarios.

- Special Protection Schemes. Continued and increased use of Special Protection Schemes would be needed to provide for controlled involuntary load curtailment during "high load" operating conditions.

The FEIR concludes that the environmental impacts of the No Project Alternative would result primarily from operation of gas-filed turbine generators, and would include substantial air emissions and ongoing noise near the generators as well as visual impacts of the generators depending on their locations. In addition, the No Project Alternative has the potential to result in electric service disruption and curtailments, which would increase use of back-up diesel generators, resulting in additional pollutant emissions. The FEIR concludes that the project alternatives it identifies as environmentally superior alternatives are preferred over the No Project Alternative.

CARE and 280 Citizens address the FEIR's No Project Alternative. CARE agrees with the FEIR's conclusion that the No Project Alternative is environmentally inferior to the Jefferson-Martin project. It maintains that the CCSF combustion turbines would be a less efficient alternative to the Jefferson-Martin project. In addition to environmental concerns cited in the FEIR regarding the No Project Alternative, CARE cites thermal pollution in the Bay caused by continued operation of power plants in San Francisco. 280 Citizens disputes the FEIR's analysis that the No Project Alternative would result in significant impacts due to emissions, arguing to the contrary that the new CCSF turbines would replace the polluting Hunters Point Unit 4.

C. Discussion

As a preface to our assessment of need for the Jefferson-Martin project, we note that in Rulemaking (R.) 04-01-026, the Commission is considering whether

G.O. 131-D should be amended to allow the Commission to defer to the ISO regarding need for proposed transmission projects. In the meantime, we will proceed consistent with our prior confirmations that § 1001 "places an ongoing responsibility on this Commission to evaluate the public convenience and necessity of proposed transmission projects, and therefore we independently assess the record developed in this proceeding to determine whether [the proposed project] is needed on the basis of either reliability or economics." (D.02-12-066, *mimeo.* at 7, see also D.01-10-029 and D.01-05-059.)

We address, first, the reliability criteria that are appropriate, then consider the generation, transmission, and other resources that should be included in the need assessment. We then address PG&E's load forecasts and determine what conclusions may reasonably be drawn from the parties' reliability analyses. Finally, we assess the extent to which the Jefferson-Martin project may have additional non-reliability benefits. We find that there is an adequate record to support a conclusion that the Jefferson-Martin 230 kV project is needed pursuant to § 1001. We conclude that we should grant a CPCN to PG&E to construct new 230 kV transmission facilities between the Jefferson and Martin substations. We determine the location and routing of the approved project in Section VII.

In Section IV.A.1, we describe the parties' positions regarding the reliability criteria that should be used in assessing need for the Jefferson-Martin project. The primary area of disgreement regards the Supplementary Guide, which predates the ISO and which 280 Citizens contends is significantly more stringent than planning standards developed by the ISO. 280 Citizens' concern is that the Supplementary Guide requires the electric system to be overbuilt to avoid the remote possibility of loss of load during simultaneous contingency conditions with a miniscule probability of occurrence.

From the description in the record, it does not appear that § 345 would require use of the Supplementary Guide in planning the transmission system in the San Francisco Peninsula Area.[18] As 280 Citizens asserts, the likelihood of the conditions modeled by the Supplementary Guide occurring simultaneously is extremely small. However, as PG&E notes, such an event could lead to prolonged outages, with attendant economic costs and hardship. We expect that design and construction of the transmission system to withstand such a low-probability event would protect the San Francisco Peninsula Area from other low-probability occurrences as well. As part of R.04-01-026, we are assessing the ISO's reliability standards. In the meantime, we do not find sufficient basis to deviate from the ISO's conclusion that the Supplementary Guide should be used in evaluating the Jefferson-Martin project.

One of the most contentious issues related to need for the Jefferson-Martin project is the manner in which its contribution to allowing the Hunters Point units to be retired should be considered. PG&E and the ISO, supported by CARE, view closure of Hunters Point as a planning goal that should be treated as a given. On that basis, they conclude that the Jefferson-Martin project is needed and should be operational by late 2005 in order to allow PG&E to provide reliable service. We support the closure of Hunters Point, as evidenced by our approval in D.98-10-008 of PG&E's settlement agreement with CCSF, which provides that PG&E shut Hunters Point as soon as it is no longer needed to sustain electric reliability in San Francisco and the surrounding area. However,

[18] Section 345 provides that the ISO "shall ensure efficient use and reliable operation of the transmission grid consistent with achievement of planning and operating reserve criteria no less stringent than those established by the Western Systems Coordinating Council and the North American Electric Reliability Council."

we do not see that goal as mandating that Hunters Point be closed on the schedule suggested by PG&E. The implementation of stricter emission limits at the beginning of 2005 is a recognition of the environmental concerns posed by Hunters Point Unit 4 (and by Potrero Unit 3), but those concerns have existed at least since 1998. There is no mandate in the settlement agreement that Unit 4, let alone Unit 1, be closed at the end of 2005 as opposed to any other date. That being said, we are certainly cognizant of the environmental concerns raised by continued operation of Hunters Point Unit 4 and, in particular, the intense interest of the Hunters Point and Bayview neighborhoods in closure of the entire facility. We give those concerns great weight in balancing the competing interests in this proceeding.

Inclusion of the four CCSF combustion turbines in the resource mix used to assess need for the Jefferson-Martin project would not be consistent with the ISO's guidelines for either five-year or ten-year planning cases, since they have not received regulatory permits. We take official notice of information on the CEC's website indicating that an Application for Certification was filed on March 18, 2004 (CEC Docket No. 04-AFC-1) for three of the four turbines. In light of the on-going controversy about the turbines and the early stage of their certification process, we do not have sufficient confidence that the three CCSF combustion turbines subject to that application will be constructed in a timely fashion to warrant deviation from standard industry practice and include them in the resource mix used to evaluate need for the Jefferson-Martin project.[19] We have no information regarding the fate of the fourth CCSF combustion turbine.

[19] The language PG&E and the ISO cite from the Valley-Rainbow decision addresses conditions under which a project that is under construction or has received regulatory

Footnote continued on next page

280 Citizens and WEM do not convince us that we should assume in assessing the Jefferson-Martin project that the 115 kV San Mateo-Martin are re-rated. We reject this position both because of concerns about technical feasibility and because PG&E is not currently planning such re-rates.

We reiterate our support, as expressed in the Energy Action Plan, for increased reliance on conservation, energy efficiency, and distributed generation as high-priority ways to meet California's energy needs. At the same time, there is no convincing evidence in the record that the near-term development of such resources is sufficiently certain to affect the need analysis for the Jefferson-Martin project. We find that PG&E has reflected these resources satisfactorily in its load forecasting methodology.

PG&E's March 2003 load forecast, which PG&E characterizes as its "low" load forecast, is the most credible of the three forecasts it presents in this proceeding. It is the forecast upon which PG&E bases its December 2003 transmission expansion plan submitted to the ISO. In its preparation, PG&E included current economic projections. The ISO reviewed PG&E's forecasting methodology in its most recent annual transmission planning process, and has found this forecast to be reasonable and sufficient for its own transmission planning purposes and for its testimony in this proceeding. For these reasons, we view PG&E's characterization of its current forecast as a "low" forecast to be disingenuous at best. We find it reasonable to use PG&E's March 2003 load forecast, contained in Table 1 above, in assessing need for the Jefferson-Martin project.

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permits may be excluded from the resource mix used for transmission planning purposes and thus is not applicable in this instance.

We turn now to the question of whether and the extent to which the Jefferson-Martin project is needed for reliability purposes. The ISO's method, which assesses the LSC based on the entire San Francisco Peninsula Area, is the most credible approach in the record. The ISO has made a convincing showing that the ability to serve electric load within San Francisco is affected by transmission facilities within the entire San Francisco Peninsula Area and also by transmission facilities connecting the Peninsula to the greater Bay area. The ISO's LSC study and its testimony provide the only reliability assessments in the record that take this broader view.

In conjunction with the San Francisco Peninsula Area load forecasts (Table 1), the ISO's LSC results for the San Francisco Peninsula Area allow us to make findings regarding reliability need for the Jefferson-Martin project. Continued operation of existing San Francisco generation, including both units at Hunters Point, would maintain system reliability at least through 2006 if base case transmission projects are constructed (see Table 2, scenario 3). However, the Jefferson-Martin project is needed for reliability purposes in 2007, even if Hunters Point were to remain operational (Table 2, scenario 12).[20] We find further that there would not be enough time for other alternatives such as a trans-Bay transmission line, as some parties have suggested, to be planned, permitted, and constructed to meet this reliability need.

The Jefferson-Martin project may allow Hunters Point to be retired if one or more internal transmission upgrades north of the Martin substation are also completed (Table 2, scenarios 11 and 14; Exhibit 165, Attachment 2). Increased

[20] We note that the issue of whether a five-year or a ten-year planning horizon should be used is irrelevant since the Jefferson-Martin project is needed in less than five years.

reliance on transmission rather than local generation to meet San Francisco's power needs would create transmission constraints within San Francisco. Thus, the Jefferson-Martin project by itself is not sufficient for closure of Hunters Point. The LSC study indicates that a combination of the Jefferson-Martin project and three internal cable projects, if constructed, may be sufficient to meet load reliably throughout the ten-year period studied (Table 2, scenario 14).

While the record demonstrates that the Jefferson-Martin project is needed for reliability purposes by 2007, the project has diversification, economic, and environmental benefits that warrant its construction more quickly than that.

The project will diversify the path and source of power brought into San Francisco. Currently, all major transmission lines importing power travel through a single corridor from the San Mateo substation to the Martin substation and receive power from the San Mateo substation. Thus, the system is vulnerable to events disrupting supply at the San Mateo substation and/or along the San Mateo-Martin corridor. We recognize that a Jefferson-to-Martin route for the project does not diversify the risk of loss of load due to equipment outages at the Jefferson substation, since all lines would continue to travel through that substation. However, to use 280 Citizens' terminology, a Jefferson-Martin line would eliminate the "choke point" at the San Mateo and Martin substations, as well as the sole reliance on the San Mateo-to-Martin corridor. While the San Mateo substation brings in power from the East Bay, the Jefferson-Martin project would tap power originating from the region south of the Peninsula area, thus

diversifying the source of power.[21] Prompt construction of the project would allow these diversification benefits to be reaped sooner rather than later.

The Jefferson-Martin project and closure of Hunters Point will also provide economic benefits. In addition to a fixed revenue requirement for Hunters Point, ratepayers pay above-market variable costs in response to RMR dispatch notices. To the extent power imported over the Jefferson-Martin line is from more cost-effective generators, there would be an economic benefit from the project. In addition, continued operation of Hunters Point Unit 4 may require new emissions control equipment if IERC credits are not sufficient. PG&E anticipates there may also be other retrofit costs needed to keep Hunters Point operating much beyond the end of 2005. PG&E suggests additionally that the Jefferson-Martin project may allow the ISO to reduce the RMR requirement for Potrero. As the ISO points out, construction cost increases may also act to offset any purported cost savings from deferring construction.

Last, but certainly not least, there are the environmental benefits of shutting down Hunters Point and possibly reducing Potrero generation as well, which include reductions in emissions, noise, and thermal pollution and the resulting health benefits. Such an outcome will be consistent with the community values of the Bayview and Hunters Point neighborhoods, as CARE has testified.

V. Project Alternatives Studied

In its application and Proponent's Environmental Assessment, PG&E identified several alternative routings for the Jefferson-Martin project. During

[21] At the same time, the Jefferson-Martin project would also relieve limitations across import lines from the East Bay, as the ISO demonstrated.

the EIR scoping process, numerous additional alternatives were identified, including minor routing adjustments for PG&E's Proposed Project, entirely different transmission line routes, alternative energy technologies, and non-wires alternatives. Alternatives were then screened according to CEQA guidelines to determine those alternatives to carry forward for analysis in the EIR. The Commission's environmental team rejected 26 alternatives that did not meet CEQA criteria for analysis. In Section IV, we have determined that alternative energy technologies and non-wires alternatives do not hold sufficient promise to eliminate the need for the Jefferson-Martin project. In this section, we address alternative routing configurations for the project.

A. Southern Alternatives

In addition to the overhead segment of PG&E's Proposed Project, alternative configurations considered for the southern segment include the underground Route Option 1B contained in PG&E's Proponent's Environmental Assessment, the PUA (Partial Underground Alternative) developed by the Commission's CEQA consultants, and the MPUA (Modified Partial Underground Alternative) proposed by 280 Citizens and other intervenors. The FEIR also describes several hybrid alternatives that combine portions of these configurations. The FEIR concludes that Route Option 1B is the environmentally superior route for the southern segment.

1. Proposed Project--Southern Segment

PG&E's proposed southern segment would install the 230 kV line entirely overhead and, for the most part, along the existing, but widened, right of way, on a rebuild of PG&E's 60 kV transmission line in the SFPUC watershed lands. The rebuilt line would connect to the northern underground segment of the Proposed Project at a transition station near San Bruno Avenue.

Upon leaving Jefferson substation, the rebuilt line would traverse Edgewood Park and the Pulgas Ridge Natural Preserve, cross to the west of I-280, and continue north across the watershed. At about mile point 4.1, the alignment crosses back to the east of I-280, then passes the Ralston substation. Between the Ralston and Carolands substations, residential development in The Highlands area of unincorporated San Mateo and in the Town of Hillsborough lies immediately east of the alignment. The alignment then crosses to the west of I-280 and runs along the west side of the freeway and the eastern edge of the Crystal Springs Golf Course. At mile point 9.9, the alignment crosses back to the east of I-280 and continues in watershed land adjacent to residential development in the Town of Hillsborough and the City of Burlingame. At mile point 10.7, the alignment passes west of I-280 again and remains west of I-280 in watershed land until crossing east of Skyline Boulevard to the transition station at San Bruno Avenue in the City of San Bruno.

a) Rebuild of Existing 60 kV Line

The FEIR finds that PG&E's proposed rebuild of the 60 kV line in the southern segment would have significant unmitigable (Class I) visual impacts at key viewpoints at Edgewood County Park, along southbound I-280, Lexington Avenue, Black Mountain Road, and north of the Carolands substation. It also identified Class I impacts for recreation and biological resources because of the high value of Edgewood Park habitat and recreational experiences. Because of its location within SFPUC watershed lands, the southern segment of the Proposed Project could result in permanent loss and/or temporary disturbance to sensitive plant communities and associated wildlife habitat. In particular, there is concern regarding impacts to wetlands and serpentine grasslands, which

are habitats for protected species including the California Red-Legged Frog, the San Francisco Garter Snake, and the Bay Checkerspot Butterfly.

In light of the FEIR's conclusions regarding the environmentally superior route and the risk of an NPS veto (discussed in Section V.A.5), PG&E now supports Route Option 1B instead of the southern segment of the Proposed Project.

The County of San Mateo, the City of Burlingame, and 280 Citizens oppose the southern overhead segment of the Proposed Project. These parties assert that replacing 60 kV towers with taller 230 kV towers[22] would create significant visual impacts in a highly valued scenic corridor. In their view, the project would exacerbate existing land use conflicts already created by the 60 kV line in residential areas, scenic corridors, and parklands. They argue that the project would compound existing conflicts with community values; the County of San Mateo asserts that the Proposed Project would be in conflict with the visual policies in the San Mateo County General Plan.

These parties are also concerned that this segment of the Proposed Project would expose residential neighborhoods to much higher EMF levels than the existing line. 280 Citizens maintains that the I-280 corridor communities now know about potential health impacts from prolonged exposure to elevated magnetic field levels and that, if the overhead portion of the Proposed Project is built, many residents of these affected neighborhoods will move rather than risk

[22] The FEIR states that the average height of the new towers would be 20 to 25 feet higher than the existing towers. Some towers would be as much as 50 feet higher than the towers being replaced.

possible serious health impacts. EMF issues are discussed in more detail in Section VI.

b) Transition to Northern Segment

PG&E proposes to place a transition station between the southern overhead and northern underground segments of the Proposed Project near the intersection of San Bruno Avenue and Glenview Drive. The FEIR identifies and analyzes three alternatives to the San Bruno Avenue transition station: a Sneath Lane transition station, a West of Skyline transition station, and a Glenview Drive transition tower. The FEIR concludes that a Glenview Drive transition tower is the best transition alternative because it would minimize land use, visual, seismic, and recreation impacts due to its location in a less visible area adjacent to an existing City of San Bruno water tank and east of the main trace of the San Andreas fault.

PG&E maintains that a San Bruno Avenue transition station would have few environmental impacts because it would avoid biologically sensitive areas and utilize a low-profile design to minimize visual impacts. PG&E states that, although the site is within the San Andreas fault zone and adjacent to potentially active secondary faults, seismic impacts would not be significant and would be less than for any other transition station alternative.

The FEIR concludes that the San Bruno Avenue transition station location would have Class I (significant unmitigable) land use and visual impacts. It would conflict with planned future development at the transition station site and would introduce an industrial character, structural prominence, and view blockage when viewed from Skyline Boulevard, San Bruno Avenue, or the nearby Sky Crest shopping center.

The City of San Bruno, the City of Burlingame, and 280 Citizens oppose the San Bruno Avenue transition station site. San Bruno asserts that a transition station at this site would introduce a new blighting condition within its Redevelopment Plan Area in violation of the state Redevelopment Law. In its view, a transition station here would run roughshod over the values of the community, which desires to turn the area into a gateway to San Bruno. The transition station would be across the street from shopping and planned townhouses and would displace a planned parking lot for public access to the recently completed trail entrance and bicycle and walking paths in the adjacent San Francisco State Fish and Game Refuge. The site is zoned for neighborhood commercial uses, with a maximum height of 28 feet, whereas the transition station would be 47 feet tall. San Bruno would support either the elimination of the need for a transition station, such as Route Option 1B, or another location for a transition structure in San Bruno that is more consistent with the industrial nature of such structures.

The West of Skyline Boulevard transition station alternative would be located on SFPUC watershed lands southwest of the corner of San Bruno Avenue and Skyline Boulevard. The Sneath Lane transition station alternative would be co-located with an existing Sneath Lane substation. The FEIR states that either of these alternatives would eliminate the unmitigable Class I visual and land use impacts of the proposed San Bruno Avenue transition structure. However, both of them would lie west of the active trace of the San Andreas fault, so that an underground crossing of that trace would be required. The FEIR concludes that this underground fault crossing would cause significant unmitigable (Class I) impacts for either alternative.

The Glenview Drive transition tower alternative would be located approximately 0.5 miles south of the proposed transition station on Glenview

Drive adjacent to a water tank owned by the City of San Bruno. This alternative would reduce the visual impacts and land use conflicts associated with the proposed transition station site. It would be located east of the San Andreas fault and thus would not require an underground crossing of the San Andreas fault. It would be closer than the San Bruno Avenue location to the active trace of the San Andreas fault, but the FEIR concludes that that risk can be mitigated to a less-than-significant level. The FEIR also finds that, if the underground northern portion of the project is routed down San Bruno Avenue, there would be no significant unmitigable (Class I) impacts associated with the Glenview Drive transition tower.

PG&E states that, while a Glenview Drive transition tower would raise greater seismic risks than a San Bruno Avenue transition station, it is preferable from a seismic perspective to the Sneath Lane or West of Skyline locations. As a second option, PG&E is willing to accept the Glenview Drive transition tower, so long as it is used with the Proposed Project underground route.

The City of San Bruno states that, if the Commission selects a route that requires a transition station near San Bruno Avenue, it would accept the Glenview Drive transition tower option. However, it asks that, if the Commission approves a Glenview Drive transition tower, the underground line traverse the adjacent State property along Skyline Boulevard rather than use Glenview Drive to reach San Bruno Avenue. San Bruno explains that use of the Caltrans right of way would preserve Glenview Drive as a much-needed utility corridor.

2. Route Option 1B

In Route Option 1B, the 230 kV line would be entirely underground except for a crossing of the Crystal Springs Dam. The existing 60 kV line would not be modified in any way. From the Jefferson substation, the 230 kV line would be located within Cañada Road for about 5 miles to Highway 92. It would then turn onto Highway 92 before turning onto Skyline Boulevard. The route would continue north in Skyline Boulevard, crossing over Crystal Springs Dam. Several options exist for the transmission line where Skyline Boulevard crosses Crystal Springs Dam. At Golf Course Road, the route would turn to cross under I-280, turning north into the continuation of Skyline Boulevard immediately east of I-280 and staying on Skyline until Trousdale Drive. The route would travel east on Trousdale Drive, then turn north into El Camino Real. It would remain in El Camino Real until connecting with the northern segment at San Bruno Avenue.

The FEIR identifies Route Option 1B as the environmentally superior route in the southern segment. Route Option 1B would eliminate all significant visual impacts identified for the Proposed Project's southern segment. The FEIR describes that either a revised overhead crossing of the Crystal Springs Dam or a submarine cable would have no significant unmitigable impacts. Route Option 1B would also eliminate the impacts associated with the San Bruno transition station, since the entire project would be underground. The FEIR concludes that Route Option 1B would minimize permanent impacts to the most relevant areas of land use, visual resources, and biology. The FEIR finds Route Option 1B preferred on the issue of geology and seismic issues because it would avoid the known active traces of the San Andreas Fault located along Skyline Boulevard near San Bruno Avenue. The FEIR also finds that Route Option 1B has the

potential to reduce EMF exposure to residences, compared to the Proposed Project.

PG&E now supports Route Option 1B on the basis that it avoids the significant visual and biological impacts of most other southern segment alternatives and the associated opposition of federal and state natural resource agencies. CCSF submits that Route Option 1B is the most environmentally prudent choice for the southern segment, since its impact to the watershed can be mitigated so that there are no significant impacts.

The City of Burlingame, the County of San Mateo, the City of Millbrae, and 280 Citizens oppose Route Option 1B. They raise numerous concerns, including construction complexities due to existing underground utilities and seismic factors; construction impacts including noise, traffic, emergency access, and business losses; residential EMF exposure; and the fact that Route Option 1B would not address concerns regarding the existing 60 kV line.

Burlingame submits that Route Option 1B, which runs through residential neighborhoods and passes two schools, a convalescent facility, and a hospital, is not good public policy. Burlingame and Millbrae assert that Route Option 1B ignores the community value of economic revitalization, which they state the FEIR did not consider under CEQA in determining the environmentally superior route. Route Option 1B would result in El Camino Real "once again being torn apart, with the already struggling businesses significantly impacted."

San Mateo submits that the most preferable route to connect the Jefferson-Martin line from the I-280 corridor to the eastern portion of the northern segment is Sneath Lane rather than Trousdale Drive. It points out that Sneath Lane east of I-280 to El Camino Real is lined by professional and medical office buildings on one side and the Golden Gate National Cemetery on the other. At El Camino Real, Sneath is flanked by regional commercial

development. In its view, Option 1B should be rejected because there are less populated alternatives, in particular Sneath Lane or San Bruno Avenue, with less public facilities involving children and at-risk residents.

Burlingame, San Mateo, and 280 Citizens assert that there is not enough space due to existing utilities in Trousdale Drive, Skyline Boulevard, and El Camino Real to install Jefferson-Martin feasibly. Burlingame maintains that Trousdale Drive is already heavily congested with utilities including storm drains, water and sewer mains, electric, gas, telephone, and cable lines. Lateral lines connecting the utilities to properties along the street traverse the street at depths which vary by as much as eight feet. A 60-inch diameter Hetch Hetchy water main crosses Trousdale Drive in two locations. Skyline Boulevard, while not as congested as Trousdale, still has a number of utilities beneath the street. Burlingame maintains that this congestion will require trench depths of at least twelve feet and vault depths of at least fourteen feet below the surface of the street.

PG&E responds that the presence of existing utilities along Route Option 1B is not expected to present unusual challenges. While final engineering will reveal the exact location of existing utilities, PG&E reports that its site investigations of Trousdale Drive, El Camino Real, and Skyline Boulevard establish that Route Option 1B is feasible. It asserts that Burlingame's own plans to install a new water main supply beneath Trousdale Drive prove that there is sufficient space in that street. PG&E also points out that the PUA supported by these parties would require the transmission line to travel underground in Glenview Drive, Sneath Lane, or San Bruno Avenue and that there are underground utilities in each of these streets.

PG&E maintains that seismic issues along Route Option 1B are insignificant and in no way affect the feasibility of constructing this route option.

PG&E asserts that Route Option 1B has fewer seismic risks than any other southern alternative, because it avoids the known active traces of the San Andreas fault located along Skyline Boulevard near San Bruno Avenue. Burlingame argues to the contrary that seismic risks along Trousdale Drive would be significant due to the Serra fault which crosses the street, a moderate landslide risk along the drive, and liquefaction potential near the intersection of Trousdale and El Camino Real.

The FEIR states, and Burlingame concurs, that the Serra fault is capable of displacement of up to three feet. PG&E maintains to the contrary that the fault should not slip more than a foot. PG&E agrees to install reinforced duct banks in the area of the Serra fault that would be expected to withstand up to a three foot slip if warranted by further geological investigation.

Burlingame is concerned about the adequacy for Trousdale Drive of the FEIR's Mitigation Measure G-8a, since it was designed for the San Andreas fault. Burlingame points out, first, that there are conflicting reports regarding where the Serra fault crosses Trousdale Drive. Second, the San Andreas fault is a right lateral strike slip fault, whereas the Serra fault is a thrust fault. The two types of faults exhibit different types of movement; Burlingame contends that displacements along the Serra fault could occur within a zone up to 115 wide, thereby requiring mitigation across the entire zone.

As an additional seismic mitigation measure, Burlingame wants a geologist on site to observe the trenching in the relevant portion of Trousdale Drive to determine the location of the Serra fault. It requests a geotechnical study to assess the degree of possible displacement on the Serra fault. It also requests that PG&E be required to design the duct bank and associated vaults to withstand a 7.1 magnitude earthquake on the San Andreas fault and associated movement on the Serra fault, install a fire and security alarm system and a fire

suppression system in each vault within Burlingame city limits, and place seismic monitors along the duct bank.

Regarding Burlingame's concerns about liquefaction, PG&E responds that this area is not underlain by bay muds, the material most likely to liquefy. PG&E asserts that the liquefaction risk along Trousdale is "high" compared to the "very high" liquefaction risk along portions of the Collocation Alternative. It states that mitigation measures could be used to ensure that the transmission line would survive any such event.

The County of San Mateo, the City of Burlingame, and 280 Citizens assert that Route Option 1B would create unnecessary traffic impacts. San Mateo characterizes El Camino Real as a critical regional and local transportation artery and argues that traffic closures would impair access to homes and commercial businesses and resulting economic loss. Burlingame points out that PG&E has not included in its cost estimates any business disruption costs for businesses along El Camino Real.

280 Citizens maintains that construction creates inherent hazards if conducted in a residential neighborhood. 280 Citizens and Burlingame are also concerned that construction activity could increase emergency services' response times. PG&E responds that, just as Burlingame will do for its planned water main construction, PG&E will make provision for emergency access during construction along Route 1B and will ensure that any impacts are less than significant.

Burlingame states that, if the Commission approves Route Option 1B, the city will place certain conditions, pursuant to rights retained under its franchise agreement, on project installation in its city streets. Burlingame describes its Public Works Department's standard that new utility infrastructure traversing the city (but not actually serving the city) must be buried two feet

below the lowest existing utility in the right of way. Burlingame states that it would also require that PG&E undertake studies to determine the impact of the line on existing cast iron water pipes and install any necessary cathodic protection systems. Burlingame requests that the Commission acknowledge these mitigations and instruct PG&E to abide thereby.

PG&E responds that Burlingame does not have the right to place its own mitigation requirements on PG&E since the Commission has exclusive jurisdiction over the siting, construction, and design of transmission line projects. PG&E urges the Commission to deny Burlingame's request to include these mitigation measures. To the extent that implementation of adopted mitigation measures may require Burlingame's approval, PG&E requests that the Commission put in place a process whereby disputes between Burlingame and PG&E on these matters may be resolved by the Commission.

Burlingame asserts that the FEIR's Mitigation Measure T-1a, which requires the development and approval of Transportation Management Plans, is inadequate. Burlingame requests several additional mitigation measures related to construction timing, school access, hospital access, parking on Trousdale and Skyline, emergency access, noise control, and the provision of information to property owners.

280 Citizens submits that Route Option 1B would create new land use conflicts by creating a new utility corridor through residential neighborhoods. Just as significantly in its view, Route Option 1B would leave the existing 60 kV line in place, which would continue to be inconsistent with the residential areas, I-280 scenic corridor, and parklands through which it is located. 280 Citizens urges the Commission not to squander this unique opportunity to reduce existing land use conflicts and enhance visual and scenic values on the Peninsula. Burlingame voices similar views.

280 Citizens recognizes that Route Option 1B would reduce magnetic field levels below those of the Proposed Project. It contends, however, that approval of Route Option 1B with the existing 60 kV line left in close proximity to residences would result in aggregate magnetic field levels that would exceed the levels produced by the PUA. It argues further that Route Option 1B would exacerbate existing concerns about EMF exposure by locating the 230 kV line along Skyline Boulevard in close proximity to homes already affected by EMF exposure from the existing line. San Mateo notes that the FEIR did not consider the health and safety factor related to EMF exposures.

PG&E asserts that Route Option 1B would have little or no biological impacts. While a consultation with USFWS would be needed regarding the crossing of the Crystal Springs Dam, PG&E states that it has developed a plan for constructing the crossing without negatively affecting California Red-Legged Frogs and has discussed this issue several times with USFWS. PG&E reports that USFWS has stated that it finds PG&E's proposed mitigation measures acceptable. PG&E expects compliance with the Endangered Species Act to proceed quickly and smoothly if Route Option 1B is selected.

3. Partial Underground Alternative and Modified Partial Underground Alternative

The Commission's environmental consultants developed and the EIR analyzed an alternative southern route called the PUA (Partial Underground Alternative). In the PUA, the existing double 60 kV line would be rebuilt with taller towers to carry the new 230 kV circuit and one 60 kV circuit, consistent with the southern segment of PG&E's Proposed Project. The PUA would differ from the Proposed Project, however, in that it would reroute two portions of the combined rebuilt line and would underground another portion in order to reduce impacts on sensitive areas. In this section, we describe issues arising from

differences between the Proposed Project and the PUA and its variations. Issues common to the Proposed Project and the PUA, including transition station locations and NPS jurisdictional concerns are addressed elsewhere in this order.

Starting from the Jefferson substation, the PUA would reroute the initial 2.8 miles of the line to the west in order to avoid Edgewood Park and the Pulgas Ridge Preserve (called the southern reroute). In the next modification, approximately three miles of the combined line would be undergrounded (except for an overhead crossing of San Mateo Creek) between the Ralston and Carolands substations in order to reduce impacts on adjacent residences in the San Mateo Highlands and the Town of Hillsborough. The final modification (called the northern reroute) would reposition 1.5 miles of the rebuilt overhead line, between approximately the City of Burlingame city line and Trousdale Drive, to the west to avoid proximity to residences in the City of Burlingame.

The FEIR describes that the PUA would eliminate all of the significant unmitigable impacts of the Proposed Project's southern segment. The PUA would eliminate most visual impacts near residential areas[23] and would also eliminate two crossings of I-280 because the line would remain west of the freeway north of the Carolands substation. However, the FEIR finds that the PUA would create new significant unmitigable visual impacts along Cañada Road near Edgewood Road, at the I-280 crossing south of Carolands substation, and at the transition structure at Tower 7/39. For this reason, the FEIR finds the PUA less desirable than Route Option 1B.

[23] The FEIR suggests modifications to locations proposed in the draft EIR for transition towers/stations north and south of San Mateo Creek.

280 Citizens supports a modification to the PUA which would move the underground portion up to 25 feet to the west in very limited areas to ensure that the lines are located at least 75 feet from residential property lines, in order to reduce EMF impacts on residences that border that portion of the transmission corridor. The PUA with that change is referred to as the MPUA (Modified Partial Underground Alternative). 280 Citizens states that the environmental impacts of the PUA's southern reroute may outweigh its benefits and, as a result, 280 Citizens would support either the Proposed Project's route through Edgewood County Park or the southern reroute, whichever the Commission deems to be superior.

In the environmental review, the FEIR rejected the underground route change in the MPUA based on its assessment that moving the underground alignment to the west would cause greater impacts than it would mitigate.

280 Citizens and the City of Burlingame assert that the PUA or the MPUA would reduce the Proposed Project's land use conflicts and would be consistent with community values by rerouting the line out of Edgewood County Park, out of residential areas, and in a way that reduces visibility of the line along I-280, which has been designated as a scenic highway. In their view, the PUA or the MPUA would minimize visual impacts, construction impacts, and health impacts far better than either the Proposed Project or Route Option 1B. 280 Citizens characterizes the MPUA as a rare opportunity for the Commission to reduce both future impacts and existing impacts and to improve the environment in both San Francisco through the closure of Hunters Point Unit 4 and the I-280 corridor.

PG&E, CCSF, and CARE oppose both the PUA and the MPUA. These parties contend that the PUA and MPUA suffer from a host of environmental, technical, legal, and regulatory feasibility infirmities and that proponents of these

route alternatives have a self-interested desire to enhance their property values at ratepayer expense.

PG&E argues that the rerouted overhead utility corridors in the PUA or the MPUA would significantly worsen existing scenic viewsheds, thereby degrading the recreational experience in the project area. While acknowledging that the southern reroute would have some visual impacts in the Cañada Road corridor, 280 Citizens and Burlingame respond that either the PUA or the MPUA would provide a net improvement in visual impacts. They point out that the underground section would remove overhead lines and that the northern reroute would relocate the line from the ridge on the east side of I-280 to a topographically lower area on the west side of I-280, both of which changes would improve visual impacts on the I-280 scenic corridor. Burlingame sees the southern reroute, which would remove towers from Edgewood County Park and Pulgas Ridge, to be beneficial.

PG&E, CCSF, and CARE assert that the two overhead reroutes and trenching for the underground section of the PUA or the MPUA would have significant biological impacts. The two new overhead corridors would be in currently undeveloped SFPUC watershed lands known to support rare plant and animal species protected under state and federal law. The underground section of the PUA would require trenching through the largest remaining serpentine grassland in San Mateo County, which provides habitat for the protected Bay Checkerspot Butterfly, and the MPUA would exacerbate these biological impacts. PG&E maintains that the new utility corridors would violate the SFPUC Watershed Management Plan which discourages new utility corridors in undeveloped watershed lands.

In response to PG&E's concerns, 280 Citizens and Burlingame submit that the temporary construction and biological impacts of the PUA and the

MPUA are not significant and can be mitigated. Burlingame points out that the FEIR determined that all impacts of the PUA to the serpentine grasslands and the special status species in the area would be mitigable to less than significant levels.

280 Citizens presented testimony that the serpentine habitat can be restored and even improved through revegetation with native serpentine plants and grasses. 280 Citizens points out that the serpentine habitat along the portion of the route that would be undergrounded has already been degraded significantly due to the existing access roads and SFPUC's frequent disking, mowing, and burning of broad areas maintained as firebreaks. PG&E acknowledges that the Bay Checkerspot Butterfly is no longer found north of Highway 92. It points out, however, that the USFWS Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area identifies the MPUA-proposed trenching area as Priority 1 and 2 in the recovery strategy for the Bay Checkerspot Butterfly and the Marin Dwarf Flax.

280 Citizens argues that the MPUA is the only alternative that reduces EMF levels sufficiently to provide a prudent margin of safety for residents. San Mateo points out that, in finding that Route Option 1B is preferable to the PUA, the FEIR did not consider public health concerns related to exposure to EMF. San Mateo asks that, if the Commission does not choose the PUA or the MPUA, the Commission consider the potential removal of the existing 60 kV line similar to what was done in the Tri-Valley case.

PG&E argues that the multiple transitions in the PUA or the MPUA between underground and overhead configurations would decrease reliability due to the increased difficulties in locating the cause of a line outage. Burlingame responds that construction of a line with multiple overhead-to-underground transitions is not novel. It points out that utilities are working on

development of a directional fault detector, which could be installed after it is developed. Since the risk of outages in an underground line is small and PG&E is exploring a manner in which to address this problem, Burlingame concludes that this reliability issue provides no basis for rejecting the PUA or MPUA.

The County of San Mateo asserts that PG&E has dramatically overstated the time that it would take for NPS approval if required, and the time and role of consultation with federal agencies under the Endangered Species Act. PG&E contests the credibility of San Mateo's time estimates, stating that San Mateo's witness had limited knowledge regarding the route options, did not know long it would take to resolve the NPS land rights dispute, agreed that plant and biological surveys would be required, and agreed that Section 7 consultations with the U.S. Fish and Wildlife Service for the PUA or MPUA route could take a year. CARE maintains that the necessity of compliance with federal environmental regulations including NEPA would delay completion of the PUA or MPUA for several years, exacerbating San Francisco's electricity problems and creating the potential for further negative environmental impacts on residents of San Francisco's Bay View/Hunters Point neighborhoods due to continued operation of the Hunters Point power plant.

In addition to its other concerns, PG&E argues that the PUA or the MPUA cannot be legally required. PG&E asserts that undergrounding and re-routing of portions of the existing 60 kV line as proposed by the PUA and the MPUA would not mitigate a project impact or achieve a basic project objective but instead are attempts to enhance the environmental baseline. On that basis, PG&E concludes that these route proposals lack the required constitutional nexus to the Jefferson-Martin project and so violate the Takings Clause of the U.S. Constitution.

Burlingame responds that PG&E's assessment is based on an erroneous definition of the Jefferson-Martin project. Since the project, as initially proposed, would include significant modifications to the 60 kV line, Burlingame concludes that the 60 kV line is part of the project and that the PUA and MPUA may properly be considered. Burlingame's analysis is consistent with the FEIR, which states that, because modifications to the existing 60 kV line in the southern segment, as proposed by PG&E, would create adverse impacts, alternatives such as the PUA designed to mitigate those impacts may properly be considered under CEQA.

280 Citizens asserts that the Commission has authority, independent of CEQA, to require PG&E to relocate or underground the existing 60 kV line as part of its approval of the Jefferson-Martin project. It states that the Commission's authority under §§ 1001 and 1002 is much broader than the authority of most other state agencies under CEQA, and includes authority to condition its grant of a CPCN on the adoption of any changes to PG&E's existing utility plant and facilities as public convenience and necessity may require. 280 Citizens cites § 762, which empowers the Commission to direct public utilities to make changes to existing utility facilities and also invokes §§ 761, 768, and 701. 280 Citizens cites prior instances in which the Commission has required the removal and relocation of existing utility lines, including its determination in the Tri-Valley proceeding that an existing 60 kV line should be removed.

As a separate legal argument, PG&E maintains that the Commission may not select the MPUA since the FEIR rejected the MPUA from full consideration and did not analyze its impacts. A very similar alternative was identified in the Alternatives Screening Report (FEIR, Volume 2, Appendix 1) as the West of Existing Corridor, East of I-280 Alternative, and not pursued in detailed analysis.

4. Hybrid Southern Alternatives

The FEIR analyzed several hybrid alternatives for the southern segment designed to reduce or avoid biological, visual, seismic, and other impacts associated with parts of the southern segment alternatives. The FEIR concludes that Route Option 1B is environmentally superior to any of the hybrid southern alternatives.

A new Golf Course Drive transition station, west of the Carolands substation, would allow creation of a hybrid alternative using the underground Route Option 1B in the southernmost segment, which would minimize visual and biological impacts because the route would be underground and within roadways (except for the crossing of Crystal Springs Dam). From the new transition station, the overhead line would follow the route of either the PUA (including its northern reroute) or the Proposed Project to a transition station in the San Bruno Avenue area. This configuration would avoid Route 1B's effects on the residential areas along Skyline Boulevard and Trousdale Drive, as well as on businesses and traffic on El Camino Real. A Golf Course Drive transition station could also be used as a modification to the PUA to allow the 230 kV line to cross I-280 underground, thus reducing the height and mass of the transition tower at Tower 8/50 because it would be needed for only the 60 kV line.

A new transition tower at the existing tower 11/70 near the west end of Trousdale Drive could be used, similar to a Golf Course Drive transition station, to connect the southernmost portion of Route Option 1B with the portion of the Proposed Project north of the new transition tower. This would avoid effects on Trousdale Drive and El Camino Real. This transition tower alternatively could connect the southernmost portion of the Proposed Project with Route Option 1B's Trousdale Drive and El Camino Real segment. Such a hybrid would avoid the visual and biological impacts of the Proposed Project in the I-280 corridor

between Trousdale Drive and San Bruno Avenue, visual concerns regarding the San Bruno transition station, seismic concerns regarding proximity to the San Andreas fault of the San Bruno transition station or its alternatives, and the use of San Bruno Avenue. Another possible transition tower location about 1,100 feet west of tower 11/70 could be used to connect the southernmost portion of the PUA or MPUA to Route Option 1B's Trousdale Drive and El Camino Real segment.

The County of San Mateo states that, if the Commission is concerned about time deadlines and NPS review, the most appropriate alternative is a hybrid that uses Route Option 1B in the southernmost portion of the route, in order to reduce impacts on watershed lands and avoid the impacts of an underground route along Trousdale Drive and El Camino Real. San Mateo prefers the Golf Course Drive transition station because it would reduce exposure to residents along Skyline Drive.

PG&E states that the feasibility of the hybrid routes and their environmental impacts are based on the feasibility of their constituent parts, but that construction of an additional transition structure would create additional impacts. PG&E points out that each of the hybrid routes would involve some overhead or underground construction in SFPUC watershed lands, so NPS objections would still apply.

5. NPS Concerns

NPS did not participate as a party in this proceeding. However, it made known its views on the proposed Jefferson-Martin project and its variations through letters, a statement at the PHC, and comments on the draft EIR. NPS states that conservation easements it holds for the SFPUC watershed lands provide it with discretionary authority to review and approve the

Jefferson-Martin project to the extent the project would require an expansion to PG&E's existing right of way through the watershed. NPS explains that it would issue a written approval determination that would be based on a NEPA document prepared by the project proponent, but that PG&E has "refused to prepare" a NEPA document for the project.[24] PG&E and CCSF disagree with NPS regarding applicability of the conservation easements but are concerned that NPS efforts to exert jurisdiction could cause significant delays in the project. The FEIR also disagrees with NPS regarding the applicability of the conservation easements.

Separate from any authority arising from the conservation easements, NPS would have approval rights over any modifications within Edgewood County Park and Pulgas Ridge Open Space Preserve that convert land to non-recreation purposes, due to grants received under the federal Land and Water Conservation Fund. It appears that the Proposed Project would, Route Option 1B would not, and the PUA/MPUA may require NPS approval for this portion of their route.

NPS states that the southern segment of the Jefferson-Martin project as proposed is incompatible with NPS' conservation easements and that it would not concur with the project as proposed. NPS contends that the Proposed Project's impact on the scenic, recreational, and biological resources of the watershed would be substantial and permanent. NPS supports undergrounding

[24] In this proceeding, there was much finger-pointing regarding whose responsibility it would be to initiate NPS review or otherwise resolve the issue of NPS jurisdiction. PG&E asserts that it would have been CCSF's responsibility as owner of watershed lands, whereas other participants and, evidently, NPS believe P&GE should have acted in this regard.

both the existing 60 kV line and the new 230 kV line along Cañada Road and disagrees with the draft EIR's decision to eliminate this option from full consideration.[25] NPS initially stated that the underground Route Option 1B is the only southern alternative fully examined in the FEIR that is consistent with the easements and therefore acceptable to NPS.

The County of San Mateo and 280 Citizens argue that the possibility that project alternatives may require federal environmental review provides no legal or practical justification for concluding that such alternatives are infeasible or should not be considered by the Commission. San Mateo asserts that the fact that NPS staff commented negatively on certain route alternatives does not dictate the results of any NEPA review or prevent NPS from ultimately approving one of those routes if its approval is required. 280 Citizens takes the position that a Jefferson-Martin project is not needed until at least 2012, which would provide more than enough time to comply with any federal regulations that may apply. 280 Citizens and San Mateo submit that the Commission should base its decision in this proceeding on the merits of a route, not whether NPS review would be required or whether the project could be constructed by the end of 2005 as PG&E requests.

The City of Burlingame states that the NPS claim places the Commission in a difficult position. Since a determination regarding the applicability of NEPA is outside the Commission's jurisdiction, Burlingame

[25] Because Route Option 1B would avoid the adverse impacts of the Proposed Project caused by overhead collocation with the existing 60 kV line, the FEIR concludes that Route Option 1B would fully meet the objectives of the Proposed Project without any change to the 60 kV line. It concludes that requiring that the 60 kV line be undergrounded in conjunction with Route Option 1B would not be a legally permissible alternative under CEQA.

suggests that the Commission make a reasoned assessment regarding the potential that the NPS claim may render one or more alternatives a legal impossibility and the repercussions that the NPS claim may have on the project, including the amount of possible delay and the impact of such delay. With the view that any delay needed to resolve the NPS claim should not endanger PG&E's ability to provide reliable service, Burlingame concludes that the Commission should not reject any of the southern route alternatives because of concerns regarding the NPS claim.

In a June 4, 2004 letter, the NPS states that it recognizes that changes to Route Option 1B would meet many of the local communities' concerns. The NPS suggests that a hybrid alternative traversing a limited portion of the watershed may be acceptable if there are adequate mitigation measures to compensate for the impacts to recreational and natural resources. The hybrid route it is willing to consider would use Route Option 1B in the southernmost segment, transition above-ground at the existing tower 11/70 near the west end of Trousdale Drive, and follow the existing 60 kV line from that point north to tower 14/93. The 230 kV line would exit the watershed lands at that point and would use the Glenview Drive transition tower alternative. The NPS states that it is discussing mitigation measures with PG&E and is optimistic that adequate mitigations can be identified for this alternative route.

B. Northern Alternatives

The DEIR had identified the Collocation Alternative as the environmentally superior northern segment. However, in considering comments, it was determined that neither the PG&E proposed route nor the Collocation Alternative showed a significant environmental benefit compared to the other. Therefore, the FEIR modifies this DEIR determination and instead

identifies two northern route options as environmentally superior: the northern segment of PG&E's Proposed Project with Route Option 4B and the Collocation Alternative with Route Options A, D, E, and F. The FEIR finds that the two alternatives have comparable levels of environmental impacts, with the Proposed Project's northern segment having environmental impacts greater than those of the Collocation Alternative in several issue areas, less impacts in other issue areas, and comparable impacts in yet other issue areas. No significant unmitigable (Class I) impacts are identified for either northern route alternative.

PG&E, South San Francisco, CBE-101, Golden Gate Produce Terminal, and Genentech support the Proposed Project's northern segment and oppose the Collocation Alternative. Daly City opposes the Proposed Project in the northern segment and supports either the Collocation Alternative or an alternative route collocated with the existing 60 kV Jefferson-Martin line across San Bruno Mountain.

If Route Option 1B were chosen for the southern segment, it would connect with either the northern segment of the Proposed Project or the Collocation Alternative at the intersection of El Camino Real and San Bruno Avenue. Mitigation Measure T-9a, which the FEIR suggests if needed to avoid conflict with a planned grade separation project at the corner of San Bruno Avenue and El Camino Real, would affect the route of both the Proposed Project and the Collocation Alternative. Beginning at the intersection of San Bruno Avenue and El Camino Real, the route would go north on El Camino Real and then turn east into Sneath Lane. It would rejoin the Proposed Project route by turning north into the BART right of way at Huntington Avenue. To rejoin the Collocation Alternative, the route would continue east past the end of Sneath Lane, under the railroad tracks, into Tanforan Drive and to Shaw Dive, where it would join the Collocation Alternative as originally defined.

1. Proposed Project—Northern Segment

The northern segment of PG&E's Proposed Project would head east along San Bruno Avenue from the transition station, and would turn north into Huntington Avenue to the BART right of way. From the BART right of way, it would turn east into the new Lawndale Boulevard then north into Hillside Boulevard, east into Hoffman Street, and north into Orange Street. From Orange Street, the route would turn east into East Market Street, which becomes Guadalupe Canyon Parkway and crosses San Bruno Mountain through the San Bruno Mountain State and County Park. From Guadalupe Canyon Parkway, the route would turn north on Bayshore Boulevard to the Martin substation.

The FEIR analyzes several route alternatives for portions of the northern segment of the Proposed Project. Three different underground routes could be used in conjunction with any of the four transition station alternatives (described in Section V.A.1): the proposed route down San Bruno Avenue, an alternative route down Sneath Lane, and a route continuing north on Skyline Boulevard to Westborough Boulevard. A variation of the Westborough Boulevard route, called the Junipero Serra alternative, would turn from Westborough Boulevard north into Junipero Serra Boulevard and east into Serramonte Boulevard. The Sneath Lane route and the Westborough Boulevard routes would require crossings of the San Andreas fault, and the Skyline Boulevard portion of the Westborough route is very close to the fault. The FEIR concludes that the use of San Bruno Avenue would be preferred to either Sneath Lane or Westborough Boulevard.

A Cherry Avenue/Sneath Lane alternative would avoid the proposed Huntington Avenue grade separation project by turning north from San Bruno Avenue into Cherry Avenue and then east into Sneath Lane. It would continue to the BART right of way where it would rejoin the Proposed Project. Mitigation

Measure T-9a, which would route the line from San Bruno Avenue north along El Camino Real and east on Sneath Lane to the BART right of way, is a less extensive route change that would achieve the same objective.

A short East Market Street alternative, which PG&E calls Route Option 4B, would avoid the dense residential neighborhoods along Hoffman Street and Orange Street (Route Option 4A) of the Proposed Project by continuing north on Hillside (past Hoffman) and turning into East Market Street. Route Option 4B would rejoin the proposed route at Orange Street and East Market. The FEIR includes Route Option 4B rather than 4A in its environmentally superior alternative because it would reduce or avoid the construction impacts to residences along Route Option 4A. Route Option 4B would pass Pollicita Middle School and Colma Elementary School. Both Route Option 4A and 4B would pass Susan B. Anthony High School at a distance. The FEIR concludes that the wider streets in Route Option 4B would make it easier to mitigate short-term construction impacts compared to Route Option 4A and would also allow a degree of EMF mitigation by placement of the line across the street from the schools and / or by deeper burial of the line.

PG&E maintains that its Proposed Project in the northern segment is preferable to the Collocation Alternative because it would be constructed under paved streets, raises none of the technical feasibility issues associated with the Collocation Alternative, and would have no significant environmental impacts. In addition, PG&E asserts that it could be constructed on time and at less cost to ratepayers. PG&E supports the use of either Route Option 4A or 4B.

South San Francisco supports the northern segment of the Proposed Project instead of the Collocation Alternative, contending that the Proposed Project route would be less disruptive because it will be constructed for the most part along recently disturbed construction areas, would only minimally affect

residences, and would raise little concern that toxic contamination would be encountered during construction. South San Francisco points to the FEIR's statement that, because the portion of the route following the BART right of way would be placed within the clean engineered fill over the BART tunnel, it is unlikely that any geologic or paleontologic issues would be encountered there except for seismically induced ground shaking. Because soils within the BART right of way were excavated and stabilized during BART construction, there is little, if any, risk of liquefaction along that portion of the route.

San Bruno opposes installation of the Proposed Project in San Bruno Avenue, arguing that San Bruno Avenue is a relatively narrow street that is already over-used by various utilities. It maintains that installation of the Jefferson-Martin line in San Bruno Avenue would interfere with the ability to relocate existing utility lines beneath the roadway when they need to be replaced.

Daly City opposes the northern segment of PG&E's Proposed Project because of its possible effect on Daly City schools. Route Option 4B, determined to be environmentally superior in the FEIR, would pass three Daly City schools. Daly City prefers Route Option 4A, which PG&E had incorporated into its Proposed Project at Daly City's request, but notes that it also passes a school playfield. In addition, the northern segment of PG&E's Proposed Project would pass John F. Kennedy Elementary School on Guadalupe Canyon Parkway, regardless of whether Route Option 4A or 4B is chosen.

PG&E takes issue with Daly City's arguments that the Proposed Project would have unacceptable impacts on residential neighborhoods and schools along its route. PG&E argues, as the FEIR found, there would be no significant impacts from construction of the project on schools or residences under either Route Option 4A or 4B.

2. Collocation Alternative

The Commission's environmental consultants developed and analyzed a Modified Underground Existing 230 kV Collocation Alternative, commonly referred to as the Collocation Alternative. This alternative would be located in primarily commercial and industrial areas. It would use approximately 1.1 miles of the route of an existing underground 230 kV transmission line in Bayshore Boulevard through the City of Brisbane, but would follow a new route segment through South San Francisco and adjacent cities to avoid several congested utility areas.

Either the Proposed Project route (at San Bruno Avenue and Huntington Avenue), Route Option 1B (at San Bruno Avenue and El Camino Real), or the Sneath Lane route alternative (boring under two railroad crossings into Tanforan Avenue to Shaw Drive) could connect to the Collocation Alternative. Mitigation Measure T-9a would connect in the same manner as the Sneath Lane route.

Starting at San Bruno Avenue and Huntington Avenue, the Collocation Alternative would follow San Bruno Avenue east and turn north into the overhead 115 kV line corridor just east of Seventh Avenue. It would then turn west into Seventh Avenue just south of I-380, continue north past where Seventh Avenue becomes Shaw Road, and then travel via a bored crossing of a tributary of Colma Creek and through a large Park'N Fly parking lot to turn into Produce Avenue. It would then turn east into Airport Boulevard, and then northeast into Gateway Boulevard. From the end of Gateway Boulevard, the route would pass through a vacant lot (the Chiltern site) and then follow the eastern edge of a Union Pacific railroad right of way past the Oyster Point development. It would cross a CCSF drainage structure using an existing emergency access road or, if needed, a bored crossing. It would turn west into Sierra Point Parkway and then

use a bored crossing under the railroad tracks into Van Waters and Rodgers Road. It would then turn north into Bayshore Boulevard, continuing into the Martin substation.

Six route options (Route Options A through F) were identified in the FEIR to reduce potential impacts to land uses and transportation, based on comments on the draft EIR. The FEIR recommends that Route Options A, D, E, and F be incorporated into the Collocation Alternative, but states no preference between the original Collocation Alternative route and Route Options B and C.[26] From south to north, these route options are as follow:

> Route Option A would avoid Produce Boulevard and the Park'N Fly lot with a bore from Shaw Road under Highway 101 and the Colma Creek tributary to Marco Way. It would continue along Marco Way, turn north into Airport Boulevard and rejoin the original route at Gateway Boulevard.
>
> Route Option E would avoid the vacant contaminated Chiltern Site by turning east on Oyster Point Boulevard then north into Veterans Boulevard, rejoining the original route at the Union Pacific right of way.
>
> Route Options B and C would reduce disturbance to the Sierra Point landfill cap. With Route Option B, the line would be installed in the parking lot just east of the railroad right of way. With Route Option C the line would go further east, following Shoreline Court north to Sierra Point Parkway.
>
> Route Option D would avoid the west side loading dock area of Van Waters and Rodgers Road, with the line installed instead on the east side of the commercial

[26] The FEIR states that, Route Option B or C could be selected to minimize disturbance of the landfill cap, based on discussions among PG&E, the City of South San Francisco, and landowners.

> facilities along Van Waters and Rodgers Road and paralleling the railroad right of way.
>
> Route Option F would avoid use of the entrance ramp to Van Waters and Rodgers Road by continuing the line north adjacent to the railroad tracks and then west into Bayshore Boulevard.

For two blocks immediately north of San Bruno Avenue, the Collocation Alternative would be located within PG&E's overhead transmission corridor, which has residences on Seventh Avenue along its western side. With either the Sneath Lane alternative or Mitigation Measure T-9a, the Collocation Alternative would avoid this residential area. The remainder of the Collocation Alternative route consists of industrial areas and large office and hotel complexes. Within the office complexes, an existing day care center would be within approximately 100 feet of the project and a planned day care center would be within 50 feet.

Daly City strongly prefers the Collocation Alternative to the northern segment of PG&E's Proposed Project. It notes that PG&E's EMF Transmission Line Guidelines prioritize protection in eight descending categories, with schools/daycare and residential as the highest two categories. Daly City maintains that the northern segment logically should pass through Category 3 (commercial/ industrial) areas rather than by schools and residences. Opponents of the Collocation Alternative argue that it presents several significant technical challenges and regulatory obstacles that may render it infeasible.

PG&E and the City of South San Francisco contest the FEIR's finding that the Collocation Alternative is preferable to the northern segment of the Preferred Project with respect to soil conditions. The Collocation Alternative would require trenching through hazardous waste sites and a closed landfill,

later maintenance of the line in such locations, and potential liability for releases of hazardous substances. These parties argue that the presence of debris in fill and bay muds affects the feasibility and cost of borings under Colma Creek Tributary and in other areas where boring is proposed. Water quality could be affected by an accidental release of drilling muds, which the FEIR states commonly occurs on bored or drilled water crossings. South San Francisco points out that areas under the water table would require dewatering during construction. The parties also point out that 60% of the Collocation Alternative route lies in an area with either a very high or high liquefaction potential during earthquakes, leading to risk of lateral spreading and associated transmission line failure.

PG&E and South San Francisco raise concerns regarding access during construction to hotels and several businesses along the Collocation Alternative route. PG&E maintains that the restriction of access may be so severe that the local fire department may order some businesses to be vacated during construction. Although PG&E states that it would contest any liability, it is concerned that it may face potential business interruption claims from businesses that potentially may lose access to their facilities as a result of construction activities.

South San Francisco takes issue with the finding in the FEIR that the Collocation Alternative is preferable to the northern segment of the Proposed Project regarding air quality because construction would be further from receptors. South San Francisco asserts that this finding ignores the childcare centers, the hotels and their guests, and the businesses and their employees located along the Collocation Alternative. It argues that the FEIR contains no discussion of the potential air quality impacts of trenching and excavating in contaminated soils.

South San Francisco also takes issue with the finding in the FEIR that the Collocation Alternative is preferable to the northern segment of the Proposed Project regarding transportation and traffic because the Collocation Alternative is 4.8 miles long instead of the Proposed Project's 7.8 miles. South San Francisco argues that the FEIR's finding is based on an erroneous assumption that because the route is shorter, the impacts are less. South San Francisco maintains that lane closures on Guadalupe Canyon Parkway would not have the same disruptive impact as a closure on Gateway Boulevard or Bayshore Boulevard.

South San Francisco contests the effectiveness of the route options identified in the FEIR to mitigate negative impacts of the Collocation Alternative. Route Option A's bored crossing beneath Highway 101 and the Colma Creek tributary could result in the accidental release of drilling muds. Options B and C would not avoid disturbance to the Sierra Point landfill. Route Option D may not be effective in avoiding impact to the loading docks along Van Waters and Rodgers Road, since the bore pit may be located in the parking lot and loading area. South San Francisco maintains that the FEIR's analysis of Route Option E fails to identify contaminated brownfields along Veterans Boulevard and contains no traffic analysis of the effect of moving the route to Veterans. While within an existing road that contains other utilities, Route Option E would still run through a portion of the HMS property and would compromise the clean soil cap, which would trigger the jurisdiction of the Regional Water Quality Control Board. South San Francisco argues in addition that Route Option E would interfere with proposed development of the HMS property and would have a negative effect on the hotels and businesses located on Veterans Boulevard. South San Francisco concludes that none of the route options would eliminate disturbance of the landfill cover at Sierra Point Landfill, the capped Homart toxic site, or soil surrounding at least three leaking storage tanks along the route.

3. Undergrounding of Existing Lines into Martin Substation

Throughout this proceeding, beginning in comments during the EIR scoping process and reiterated in its brief, Daly City asks the Commission to approve the undergrounding of existing overhead transmission lines into the Martin substation as part of the Jefferson-Martin project. In this alternative, the route for the Proposed Project would be modified to turn north off Guadalupe Canyon Parkway and follow the existing 60 kV corridor for approximately 0.4 mile down San Bruno Mountain, paralleling Linda Vista Drive into the Martin substation. The existing 60 kV power lines along this route would be undergrounded at the same time that the new 230 kV line is constructed.

The FEIR states that this alternative would not be within CEQA's "reasonable range of alternatives" and therefore is not a feasible alternative that can be evaluated in the EIR.[27] As a result, the alternative was eliminated from full analysis in the EIR. In addition, the FEIR describes conflicts with the current Habitat Conservation Plan for San Bruno Mountain which, it concludes, render the alternative regulatorily infeasible.

Daly City asserts that the FEIR did not study the cumulative impacts of the proposed Jefferson-Martin project and other power projects on Daly City's Bayshore neighborhood, which contains the Martin substation. Daly City describes that power lines come up the Peninsula from both the US-101 and I-280

[27] The FEIR also explains that CEQA specifies that in order for a mitigation measure (and by inference, an alternative) to be feasible, it must meet relevant constitutional standards (CEQA Guidelines § 15124.4(a)(4)). Such standards include a requirement that there be an essential connection or relationship between an alternative and a legitimate lead agency interest dealing with the Proposed Project. The FEIR finds that such a connection is lacking in this instance.

corridors to the Martin substation. The lines cross Guadalupe Canyon Parkway and are proximate to Midway Village (the County of San Mateo's largest housing authority complex), the area's largest day care center, two public schools, and residences.

Daly City describes its Bayshore redevelopment project and appeals to the Commission to prevent its current progress from being compromised. Daly City states that undergrounding the existing overhead transmission lines would be more cost-effective now as part of the Jefferson-Martin project rather than later. It contests the legal feasibility analysis in the FEIR and maintains that the Commission retains authority and discretion to mitigate localized or long term disparate impacts on any affected community, within the Commission's "community values" consideration of § 1002 and the State's Environmental Justice Policy.

PG&E concurs with the FEIR's legal analysis and asserts further that using the Jefferson-Martin project as a vehicle for Daly City's redevelopment plans would inappropriately place the financial burden of the City's redevelopment on all California ratepayers.

We agree with the FEIR's assessment that undergrounding the existing lines into Martin substation does not fall within a "reasonable range of alternatives" which would allow it to be evaluated in the Jefferson-Martin EIR. Section 15126.6(f) of the CEQA Guidelines states, "The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project." The "project" along Guadalupe Canyon Parkway includes only the installation of a new 230 kV line and, thus, the effects of the project are limited to the impacts associated with the installation of this 230 kV line. Undergrounding of the existing 60 kV lines into Martin substation would not

avoid or lessen the impacts of the 230 kV line. For this reason, we find that the EIR properly excluded Daly City's proposal from full evaluation.

Contrary to Daly City's assertion, the EIR considers cumulative impacts of the proposed project and other projects. CEQA provides that the cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely-related past, present, and reasonably foreseeable probable future projects. (CEQA Guidelines § 15355(b).) The FEIR considers cumulative impacts in terms of both approved and future projects and also the impact of the Proposed Project and its alternatives on the existing environment. In doing so, the EIR captures the cumulative impacts of "closely related past projects," as opposed to other past projects which now constitute part of the pre-existing baseline.

Because the tentatively approved route for the northern segment would be completely underground in the Daly City area, there would be no cumulative visual impact with existing lines coming into the Martin substation. The short-term construction impacts would be minimal for residences along Linda Vista Drive closest to Guadalupe Canyon Parkway, since they would be over 500 feet away from the new underground line.

4. San Bruno Mountain Alternative

Daly City requests that an alternative be considered in which a portion of the northern segment of the Proposed Project would be rerouted and collocated with the existing Jefferson-Martin 60 kV line already crossing San Bruno Mountain to the Martin substation. Daly City explains that it requests consideration of this alternative because of the opposition to the Collocation Alternative that has arisen. It views this proposal as a compromise routing that would avoid both the schools and residences in Daly City passed by the

Proposed Project and the contaminated areas in South San Francisco affected by the Collocation Alternative. Daly City suggested this alternative in its joinder to a motion requesting that the FEIR be modified in this regard and recirculated for comment. It reiterates this request in its briefs.

Daly City recognizes that this routing option was not considered in the EIR but states that this alternative would share in most respects the same general environmental characteristics and serpentine habitat as the southern segment of the Proposed Project within the SFPUC watershed. Since collocation with the existing 60 kV line across San Bruno Mountain appears to be shorter in distance than routing along Guadalupe Canyon Parkway, Daly City suggests that this alternative may be less expensive that this segment of the Proposed Project. Daly City believes that permitting across the San Bruno Mountain may take no more than a few months, noting that San Bruno Mountain has been studied comprehensively and is not subject to federal view corridor or other federal easements.

C. Other Alternatives

280 Citizens maintains that the FEIR fails to give sufficient consideration to the "cross-Bay" alternative presented in the San Francisco Long-Term Electric Transmission Planning Technical Study. 280 Citizens represents that the FEIR did not fully evaluate this alternative because it would not meet two of PG&E's project objectives: (1) connection of the Jefferson and Martin substations and (2) PG&E's specified on-line date. 280 Citizens asserts that PG&E's framing of the "objectives" of the Jefferson-Martin project should not limit the evaluation of potentially superior alternatives that would allow PG&E to meet future load in the Project Area. It argues in particular that, consistent with its view that the Jefferson-Martin project is not needed within the time frame identified by PG&E,

there is no reason to eliminate this alternative on the grounds that it could not be constructed in time to meet future demand.

CEQA Guidelines § 15126 (a) requires the EIR to describe a reasonable range of alternatives to the project or location that would feasibly attain most of the basic project objectives of the project. CEQA Guidelines § 15364 further provides that the alternatives must be capable of being accomplished in a successful manner within a reasonable period of time taking into account economic, environmental, legal, social, and technological factors.

The FEIR did not eliminate the Moraga-Potrero Alternative (across the San Francisco Bay) from detailed analysis solely on the basis of concerns that it could not attain the applicant's objective that construction occur within the projected time-frame. 280 Citizens fails to recognize the significant feasibility concerns raised by this alternative. Separate from timing concerns, each of the Bay crossing options has regulatory and / or technical feasibility problems. A submarine crossing would be unlikely to be permitted by the BCDC due to the existence of land-based alternatives. The Bay Bridge option would require that Caltrans grant an exception to its longitudinal encroachment policy, which is very unlikely, and would also be in conflict with the Bay Bridge construction project. The BART tunnel Bay-crossing option was found to be infeasible due to BART safety concerns. Thus, we find 280 Citizens' criticism to be without merit.

VI. EMF Issues

During the proceeding, there was a great deal of public interest and concern regarding potential health effects from EMF exposure due to power

lines.[28] Several intervenors along the proposed Jefferson-Martin route ask that the Commission choose a route that reduces or eliminates the risks associated with EMF exposure, particularly to high priority groups including schools, day care centers, and residences.

The FEIR provided extensive information regarding EMFs. However, it did not consider EMF exposure in its determination of the environmentally superior routes on the basis that there is no agreement among scientists that EMF creates a potential health risk and there are no defined or adopted CEQA standards for defining health risk from EMF. As noted in D.90-09-059, § 1002 provides us with responsibility independent of CEQA to include environmental influences and community values in our consideration of a request for a CPCN. The intervening parties have made clear that the potential for health effects due to EMF from this project is of grave concern to the affected communities. Pursuant to § 1002, we consider EMF issues as we determine which project alternative should be authorized.

In 1991, the Commission initiated an investigation, I.91-01-012, into EMFs associated with electric power facilities. In D.93-11-013 in that proceeding, we found that, while EMF studies available at that time did not conclude that an EMF health hazard exists, it was appropriate to adopt several EMF policies and programs because of public concern and scientific uncertainty. We required that utilities undertake no-cost EMF mitigation measures and that they implement

[28] Electric fields are created whenever power lines are energized, whereas magnetic fields are created when current flows through the lines. Both electric and magnetic fields attenuate rapidly with distance from the source. Electric fields are effectively shielded by materials such as trees or buildings, whereas magnetic fields are not easily shielded by objects or materials. Therefore, concerns regarding potential power line EMF health effects arise primarily due to exposure to magnetic fields.

low-cost mitigation measures to the extent approved through a project's certification process. We defined "low-cost" to be in the range of 4% of the total project cost but specified that this 4% benchmark is not an absolute cap. We found that, to be implemented, a mitigation measure should achieve some noticeable reduction in EMF but declined to adopt a specific goal for EMF reduction. We instructed that workshops be held and that the utilities develop EMF design guidelines for new transmission facilities. We adopted several EMF measurement, education, and research programs and chose the California Department of Health Services (DHS) to manage the education and research programs.

A. Scientific Research Regarding EMF

The FEIR and the parties in this proceeding reported the results of a number of scientific studies related to EMF. Intervenors along possible Jefferson-Martin routes cite numerous scientific studies that, in their view, provide compelling reason for concern about the potential health risks associated with EMFs from power lines. They maintain that numerous studies have demonstrated an association between EMFs and serious diseases, even if causal links have not been established. San Mateo asserts that anxiety and lack of certainty about the safety of EMF exposure, by themselves, create a public health issue, citing potential stress-related health effects. These intervenors recommend that, in light of the studies and continued uncertainty, the Commission choose a route alternative that reduces or eliminates the risks associated with EMF exposure. 280 Citizens asks that the Commission adopt a standard that transmission-related EMF exposure from the combined effect of the existing 60 kV and new 230 kV lines should not exceed 1 mG at residential property boundaries. It asks that the Commission route the southern segment away from

residential areas and schools where feasible and, where that is not feasible, require that the lines be undergrounded in a manner that achieves this standard.

PG&E responds that there is no scientific basis that EMF exposure causes adverse health effects. Its expert witness testified that, despite decades of scientific inquiry, there remains insufficient scientific evidence to conclude that EMF causes any adverse health effects. PG&E asserts that the state of scientific knowledge remains where it was when the Commission adopted the precautionary approach of requiring no-cost and low-cost mitigation but declined to adopt a numerical limit. PG&E maintains that there is still no scientific basis to set any health-based EMF standard and concludes that there is no reason to depart from the Commission's 1993 no-cost, low-cost EMF reduction policy. CARE agrees with PG&E that EMF is not a serious consideration that would affect the balance of issues in this case.

We disagree with PG&E's assertion that the state of scientific knowledge has not advanced in the period since we issued D.93-11-013. While causation has not been proved definitively, several studies in the intervening years have found correlations that we cannot responsibly ignore. In assessing the numerous scientific EMF studies, we find DHS's comprehensive review of existing EMF studies undertaken at the Commission's direction in I.91-01-012 to be of particular value. The DHS study reviewed several of the other scientific studies cited in this proceeding and thus took those studies' findings into account in its conclusions. Three DHS staff scientists undertook the evaluation and the DHS final report, published in 2002, identified their individual professional judgments regarding EMF risks. Their conclusions include the following:

- All three of the DHS scientists were inclined to believe that EMF exposure can cause some degree of increased risk of childhood leukemia, adult brain cancer, Lou Gehrig's Disease, and miscarriage.

- One scientist was "prone to believe" and two were "close to the dividing line between believing or not believing" that EMFs cause some degree of increased risk for adult leukemia.
- All three scientists had judgments that were "close to the dividing line between believing and not believing" that EMFs cause some degree of increased risk of suicide.
- They were all inclined to believe that EMF exposure does not cause an increased risk of breast cancer, heart disease, Alzheimer's Disease, depression, or symptoms attributed by some to a sensitivity to EMFs.
- They all strongly believed that EMFs do not increase the risk of birth defects or low birth weight, and that EMFs are not universal carcinogens since a number of cancer types are not associated with EMF exposure.

While there is no definitive proof at this point, we must proceed with the knowledge that EMF exposure may increase the risk of certain health effects. In routing the Jefferson-Martin project and considering PG&E's EMF management plan for the project, it is entirely appropriate and prudent for us to consider the EMF levels that would be created by the various possible routings and configurations of the project. At the same time, we find that the state of scientific knowledge has not advanced to the point to support adoption of the numerical EMF exposure standard that 280 Citizens proposes.

B. EMF along Routes under Consideration

Several intervenors along the proposed Jefferson-Martin routes ask that, if a Jefferson-Martin project is authorized, the Commission choose a route that reduces or eliminates the risks associated with EMF exposure.

The overhead southern segment of PG&E's Proposed Project would be located in watershed lands and would pass next to residential developments in the unincorporated San Mateo County area known as The Highlands, the Town of Hillsborough, and the City of Burlingame. It would pass the Hillcrest Juvenile

Detention Home in San Mateo (over 125 feet east of the alignment) and Nueva School in the Town of Hillsborough on the opposite side of I-280 from the route.

The underground southern alternative Route Option 1B would be located partly in watershed lands but would traverse residential areas along Skyline Boulevard, Trousdale Drive and El Camino Real. It would pass Franklin Elementary School, set back about 75 feet from Trousdale Drive, and Mills-Peninsula Hospital, with buildings set back about 275 feet from Trousdale Drive.

The majority of the underground northern segment of the Proposed Project would pass through commercial areas. However, there are several residential areas along this portion of the Proposed Project, including along San Bruno Avenue, Huntington Avenue, the BART right of way, Lawndale Drive, Hillside Boulevard, Hoffman Street, and Orange Street. Route Option 4B would avoid the residential areas on Hoffman and Orange, but would pass other residences on Hillside Boulevard and East Market Street. The underground segment would pass Kaiser Permanente Medical Center and also several schools:

- Herman Tot Lot day care center (San Bruno)
- South San Francisco High School (South San Francisco, with school buildings set back 750 feet from the alignment)
- Los Cerritos Elementary School (South San Francisco)
- Boys and Girls Club (South San Francisco, 11 feet from the line)
- El Camino High School (South San Francisco, with school buildings 50 feet from the alignment)
- Susan B. Anthony High School (Route Options 4A and 4B, Daly City, with school buildings over 100 feet from the alignment)
- Pollicita Middle School (Route Option 4B, Daly City, some buildings near the sidewalk)
- Colma Elementary School (Route Option 4B, Daly City, some buildings near the sidewalk)

- John F. Kennedy Elementary School (Daly City, with a school building 40 feet from the alignment (Ex. 13, Att. 205 at E-20))

The Collocation Alternative would pass a small number of residences on San Bruno Avenue and would be near residences along a short segment on Seventh Street. If either the Sneath Lane alternative or Mitigation Measure T-9a is implemented to avoid the grade separation project at the intersection of San Bruno Avenue and Huntington Avenue, these residential areas would be avoided but residences along Tanforan Avenue would be passed.

PG&E calculated the expected 2006 magnetic fields along the portions of the Proposed Project and AUA routes that would pass through residential and commercial areas. PG&E performed the calculations for four load scenarios: low loading (load is less 5% of the year), medium loading (load is less 50% of the year), high loading (load is less 95% of the year), and normal summer peak (highest expected loading of the year). In PG&E's view, the "medium" loading levels are the most apt for evaluation purposes. We agree, because magnetic field levels at medium loading conditions are the best indication in the record of what year-round EMF exposure levels may be.

PG&E reported magnetic field levels for buildings along the routes, with building locations determined from aerial photographs. PG&E cautioned that many buildings may be further from the transmission line than it assumed, due to roof overhangs or other factors that cause inaccuracies in interpreting the aerial photos.

280 Citizens submitted an independent evaluation of magnetic field levels in the southern segment for several scenarios, including the existing overhead 60 kV circuits alone, PG&E's proposed route with a 60 kV circuit and the new 230 kV circuit collocated overhead, PG&E's Route Option 1B for the 230 kV

circuit and continued operation of the existing 60 kV line, and 280 Citizens' MPUA alternative with the 230 kV and 60 kV lines collocated underground.

Magnetic field exposures from the Jefferson-Martin project would depend on the distance from the line. For overhead configurations, magnetic field exposures depend on tower placement and height in addition to horizontal distance from the line, e.g., field exposure would be lower near a tower because the line is higher in the air than it is near the mid-span.

PG&E provided two sets of magnetic field exposure data along the southern overhead portion of the proposed project: (1) for the existing double-circuit 60 kV line operating by itself and (2) if the Proposed Project is built, i.e., for rebuilt towers carrying the new 230 kV circuit and a single 60 kV circuit. PG&E provided only normal summer peak loading data for the existing 60 kV line, but provided data for all four loading scenarios for the Proposed Project. Thus, we can compare peak magnetic field estimates, but not exposures during medium loading conditions, before and after the project is built.

Along the above-ground segment of the Proposed Project, the closest residential building is approximately 25 feet from the existing 60 kV line; 42 residential buildings are within 100 feet of the line. PG&E reports that during summer peak loading conditions, magnetic field exposure levels would be less than 1 mG for most residences along the route, between 1 mG and 3 mG along Lexington Avenue, and as high as 5.3 mG for homes along Skyline Boulevard. For the combined 60 kV and 230 kV circuits, the magnetic field levels during summer peak conditions would range up to 6.5 mG (4.5 mG during medium loading conditions) along Lexington Avenue and as high as 22.5 mG (15.5 mG during medium loading conditions) further north until the line crosses to the west of I-280 at mile point 10.7.

The PUA would reduce magnetic field exposures significantly compared to the Proposed Project, because it would underground the combined 230 kV and 60 kV lines near some residences and re-route the rebuilt line away from other residences. The MPUA would reduce magnetic field exposure further, because it would re-route the underground portion of the PUA to the west such that peak magnetic field levels at property boundaries would not exceed 1 mG.

PG&E provided magnetic field estimates for the underground portion of the Proposed Project and for Route Option 1B. Assuming a uniform duct bank depth, magnetic field levels along an underground installation would depend solely on distance from the line. The following table, compiled from PG&E's magnetic field studies,[29] shows the types and locations of buildings that are at specified distances from the underground line and the associated magnetic field levels under medium loading conditions. The BART right of way, Hoffman Street, Orange Street, San Bruno Avenue, and Hillside Boulevard are on the northern underground segment of the Proposed Project. Skyline Boulevard, Trousdale Avenue, and El Camino Real are on Route Option 1B, the underground southern alternative. This table does not include information for locations more than 50 feet from the underground line, for which magnetic field exposure would be less than 1.3 mG under medium loading conditions.

[29] Some information regarding buildings along the BART right of way was obtained from Exhibit 172.

Table 3

Magnetic Field Exposure
Route Option 1B and Underground Northern Portion of Proposed Project
Medium Loading Conditions

Distance from line (feet)	Magnetic field (mG)	Building type and location
9	23.3	Commercial—BART right of way
10	20.7	Commercial--BART
11	18.4	Boys & Girls Club--BART
12	16.4	Commercial--BART
18	8.8	Multi-family residential—BART*
20	7.4	Residential--Hoffman
21	6.8	Residential--Hoffman
22	6.3	Commercial--El Camino Real, BART
25	5.0	Residential--Hoffman and Orange, Commercial--BART
26	4.6	Commercial--Hillside, San Bruno, El Camino Real and Trousdale
27	4.3	Commercial--San Bruno
28	4.0	Commercial--San Bruno
29	3.8	Residential—Orange, El Camino Real
30	3.6	Residential—Hoffman, Orange, Trousdale Commercial—Hoffman, San Bruno, El Camino Real, Trousdale
31	3.3	Residential—Trousdale, Skyline
32	3.2	Residential—Trousdale, Skyline
33	3.0	Residential—Trousdale Commercial—BART, Skyline
34	2.8	Residential and commercial--Trousdale
35	2.7	Commercial—Trousdale, Skyline
36	2.5	various
39	2.2	various
40	2.1	various
45	1.6	various
50	1.3	various

*PG&E reports living units are on the second floor, with magnetic fields of 5.3 mG.

Magnetic field exposure for buildings along Route Option 4B would probably be less than along Hoffman and Orange Streets because Hillside Boulevard and East Market Street are wider and thus may allow the line to be placed further from the sidewalks. The record does not contain magnetic field calculations for the Collocation Alternative.

This recitation of the EMF calculations is useful to identify what portions of the route alternatives would create the highest exposures to magnetic fields. We recognize intervenors' concerns that this data does not reflect exposure levels in yards or other outdoor locations that may be closer to the underground line. However, the information is useful as an indication of exposures where residents would spend their sleeping and much of their waking hours while at home.

The highest reported magnetic fields would occur along the BART right of way in the northern segment of PG&E's Proposed Project. A few residences along the southern overhead segment of the Proposed Project exhibit exposure levels approaching those reported along portions of the BART right of way. Other relatively high exposure levels would occur on Hoffman and Orange. The highest calculated residential exposure on the southern underground Route Option 1B is less than one quarter of the highest calculated residential exposure on the northern route.

We take this information regarding magnetic field levels into account in adopting EMF mitigation measures in Section VI.C and as we weigh a variety of environmental and other factors in assessing the routes in Section VII.

PG&E maintains that magnetic field levels from the Proposed Project and the AUA are low and within the range of magnetic fields commonly encountered in everyday life. PG&E reported a study of everyday levels of magnetic field exposure, which indicated a 24-hour average to be 1.25 mG. Of the people studied, 43.6% had 24-hour average exposures of 1 mG or more, 14.3% had a

24-hour average exposure over 2 mG, and 6.35% had an average exposure over 3 mG. PG&E also reported on magnetic field levels experienced locally, including in Burlingame, obtained by a PG&E witness walking around various streets, visiting commercial and governmental buildings, and riding mass transit. The PG&E witness found an average magnetic field of 11.4 mG during the two- or three-hour walk.

The FEIR describes research indicating that ambient magnetic fields in most residences and other buildings average approximately 1 mG. The FEIR also reports that typical magnetic fields emitted by appliances include the following (at a distance of 12 inches):

Appliance	Magnetic Field (mG)
Electric range	3 to 30
Refrigerator	0.3 to 3
Clothes washer	2 to 30
Coffee maker	0.8 to 1
Vacuum cleaner	20 to 200
Color TV	9 to 20
Flourescent fixture	2 to 40

In evaluating this data, we note that the level of EMF exposure attenuates with distance much more rapidly from appliances than from power lines, and that many appliances are operated only intermittently. We find the evidence elicited by the tour of Burlingame to be of limited usefulness since it was clear that the witness visited areas known to have relatively high EMF levels, e.g., check-out areas of the local library. It is clear that, for portions of the routes under consideration, residents would be subjected to cumulative magnetic field exposures far in excess of what they would be likely to receive from other sources.

C. EMF Management Plan for the Jefferson-Martin Project

PG&E implemented EMF design guidelines in 1994 following workshops as required by D.93-11-013. PG&E's EMF design guidelines describe the no-cost and low-cost measures that it undertakes as follows:

> No cost measures are those steps taken in the design stage, including changes in standard practices, which will not increase the project cost but will reduce the magnetic field strength.
>
> Low cost measures are those steps that will cost about 4% or less of the total project cost and will reduce the magnetic field strength in an area (e.g., by a school, near residences, etc.) by approximately 15% or more at the edge of the right of way. The total project cost is defined as all costs associated with the siting, design and construction of those specific new or upgraded transmission, substation, or distribution project facilities. The total project cost figure used, as a basis for low cost determination, is only that particular component of the project being evaluated for magnetic field reduction steps. As an example, when a substation and a transmission line are being designed, 4% of the total cost for the transmission line will be considered for magnetic field reduction from the line and 4% of the total substation cost will be considered for reduction from the substation. …

PG&E's EMF design guidelines establish a prioritization of areas for EMF reduction, based on its perception of public concern. Beginning with the groups of highest priority, PG&E's prioritization of areas for application of EMF mitigation measures is as follows:

1. Schools, licensed day care
2. Residential
3. Commercial/industrial (includes hospitals)
4. Recreational
5. Agricultural, rural
6. Undeveloped land, zoned for residential
7. Undeveloped land, zoned for commercial/industrial

8. Unpopulated, forested, government owned land

The guidelines state that unless all areas within a priority group can receive equivalent treatment, no single area in that priority group will receive low cost measures, with "equivalent" defined as the application of some type of low-cost measure to all areas in a priority group.

PG&E prepared a preliminary EMF management plan for the Jefferson-Martin project. It established 4% benchmarks separately for each component of the Proposed Project.

PG&E reports that, with no-cost design measures, the base case magnetic field level during normal summer peak loading conditions would be 30.6 mG at one edge of the 100-foot right of way for the overhead line (the 230 kV circuit and one 60 kV circuit) and 15.0 mG at each edge of the 30-foot right of way for the underground portion of the 230 kV line. As low-cost mitigation near schools, PG&E proposes to raise the height of towers by 20 feet or to lower the depth of underground conductors by 5 feet. This would lower the peak loading magnetic field at the edge of the right of way to 17.3 mG for the overhead rebuilt line (a 43.5% reduction) and to 11 mG for the underground 230 kV line (a 26.7% reduction). PG&E does not propose to undertake any EMF mitigation measures in residential areas, however, since the total cost of these measures for all residential areas, in combination with school mitigation measures, would exceed 4% of the estimated cost of the transmission line portion of the project.

The County of San Mateo is concerned that, under PG&E's EMF design guidelines and proposed mitigation plan for Jefferson-Martin, EMF mitigation would be limited and would reduce EMF in only a few areas. San Mateo points to PG&E's planned 4% limit and its policy to not provide mitigation to a priority

group of customers unless all areas within the priority group can receive equal treatment.

During the evidentiary hearing, the ALJ questioned PG&E about possible changes to its EMF management plan for Jefferson-Martin and PG&E provided a written response (Exhibit 164). PG&E states first that, rather than creating separate 4% benchmarks for the transmission line and substation portions of the Jefferson-Martin project, it is willing to have a single EMF mitigation budget based on the total estimated costs of the entire project.

Second, PG&E responded to ALJ inquiries about PG&E's policy that, if it cannot provide EMF mitigation to all customers within a priority class and stay within its EMF mitigation budget, PG&E would not provide EMF mitigation to any customer within the class. PG&E states that it has concerns about any mitigation measure that does not require equal treatment within a priority class and asks that, if such an approach is adopted, the Commission provide clear direction on how to allocate the funds among land uses within the same priority class.

With that caveat, PG&E describes in Exhibit 164 ways in which EMF mitigation could be focused within a priority class. PG&E reports that an option applicable to a project with both overhead and underground segments would be to favor EMF mitigation for overhead lines instead of underground lines, since EMF levels at the edge of the right of way tend to be higher for overhead lines than for underground lines.

PG&E also describes two options for targeted EMF mitigation applicable to underground lines. One option would be to lower the depth of the trench along all portions of the route adjacent to residential areas by an equal amount, with the depth determined by the EMF mitigation budget. A second option would be to provide mitigation based upon distance from the underground cable. For that

option, after final design work is complete, PG&E could measure the distance from the planned line location to the nearest residential living unit (for example, a house rather than a garage or shed) on a block, and compare that to other blocks along the route. For blocks with residences closest to the line, the nominal depth of the trench would be lowered to achieve an estimated 15% reduction in magnetic field. This process would continue until the EMF mitigation budget is depleted. PG&E is concerned that this approach would require that line placement for the entire line be determined before any construction commences, contrary to current practice in which the actual location of the line is usually determined shortly before each stretch of the line is installed.

We require several changes to PG&E's preliminary EMF management plan for the Jefferson-Martin project in order to make more effective use of EMF mitigation funds. First, we adopt a single 4% EMF mitigation benchmark for all of the project, as PG&E suggests, rather than allowing the funds to be divided and administered separately for each component of the project.

Because the overhead portion of the route we authorize does not pass any high priority groups, we do not need to address PG&E's proposal in its draft EMF Management Plan to mitigate EMF exposure for the Jefferson-Martin project by raising the height of towers by 20 feet in targeted areas. As a general matter, we agree with PG&E's proposed low-cost EMF mitigation measure for underground routes in which it would lower the depth of the underground conductors by 5 feet. Starting with a standard 6-foot deep trench, an additional 5 feet would lower the peak load magnetic field at each edge of a 30 foot right of way by about 26.7%, to about 11 mG. We note that the magnetic field levels during non-peak conditions would be substantially less than this amount, and estimate based on data in Attachment 205 in Exhibit 13 that the magnetic field

during medium loading conditions would be about 7.6 mG at each edge of a 30-foot right of way.

The record does not indicate construction costs or the EMF reduction that could be achieved if the trench is lowered more than five feet as an EMF mitigation measure. In an effort to make the most effective use of EMF mitigation funds, we will not require PG&E to lower the trench below a total depth of 11 feet due to EMF mitigation requirements.

PG&E's preliminary EMF management plan for Jefferson-Martin submitted in this proceeding appears to assume that the conductors would be arranged in a vertical configuration in the underground duct bank. However, a triangular configuration would reduce EMF levels. In the EMF calculations in Exhibit 13, PG&E utilizes a triangular configuration. We require that PG&E use a triangular configuration to reduce EMF levels as a zero-cost mitigation measure unless there are obstacles or other impediments that would preclude such a configuration.

Modification of line placement is another EMF mitigation measure that may be implemented at no or relatively low cost in many instances. To the extent allowed by the location of existing underground utilities, PG&E may be able to choose line placement within the right of way in a manner that would reduce EMF exposure within buildings along the way. We instruct PG&E to undertake such strategic line placement along the entire route to the extent it can be accommodated at no or minimal cost. By "minimal" cost, we mean typical trenching and duct bank construction costs that may be incurred because the route may not be as direct as otherwise possible if strategic placement were not undertaken. As a general matter, we do not expect PG&E to undertake more extensive steps such as moving existing underground utilities in order to reduce EMF levels through strategic placement. PG&E should use its judgment,

however, regarding the extent to which such steps could be done at minimal cost.

Particularly high magnetic field levels such as those expected along portions of the BART right of way, as indicated in Table 3, warrant targeted EMF mitigation measures regardless of whether the buildings are residential or commercial. In response to an ALJ inquiry regarding project design along the BART right of way, PG&E explains that the reported EMF levels were based on preliminary determinations of line placement in light of the expected BART tunnel location and other considerations. PG&E reports that the extent to which it would be able to place the transmission line further from the buildings along the right of way would depend upon the actual, as-built location of the BART tunnel, location of the BART right of way property line, surface and subsurface features, and the minimum bend radii in the routing of the line. PG&E commits, however to locate the line at least 34 feet from the edge of buildings along the BART right of way to the extent "safe, feasible, and cost-effective" as part of its EMF mitigation measures. We require that PG&E meet this commitment, not just along the BART right of way but any place along the route where it is feasible to place the line at least 34 feet from residential living units or other buildings where people are expected to spend significant amounts of time. Such placement would reduce magnetic field levels to 3.0 mG at median loads. We do not expect this requirement to be overly expensive, since there appear to be only a few buildings to which it would apply.

In its EMF design guidelines, PG&E employs a criterion that an EMF reduction measure should reduce EMF by 15% or more, stating that this criterion is not meant to restrict choices of EMF reduction measures but to guide the design engineer on when a selection or combination is appropriate and justified in a given situation. Consistent with D.93-11-013, we agree that this 15%

criterion should provide guidance only, whether in choosing no-cost or low-cost EMF mitigation measures. In particular, PG&E should undertake strategic line placement and should place the line at least 34 feet from buildings where feasible, even if the reductions in EMF are less than 15%.

As described in the preceding subsection, the amount of EMF exposure is expected to vary considerably along the possible Jefferson-Martin routes because of the variability in the distance from the line to schools, residences, and other uses. Because of this and because application of PG&E's current EMF mitigation policy could result in no EMF mitigation in residential areas, it is reasonable to refine PG&E's EMF management plan for application to Jefferson-Martin to provide for focused mitigation in a priority class if the EMF mitigation budget is not large enough to provide mitigation for the entire priority class.

To this end, we adopt the second option for targeted EMF mitigation in PG&E's Exhibit 164, with certain modifications. If the EMF mitigation budget is adequate to provide mitigation for some but not all of the entire portion of the line adjacent to a priority class, EMF mitigation for this class should be prioritized based on the distance of residential living structures (or for other priority classes, comparable structures where people are expected to spend substantial amounts of time) from the underground cable, as PG&E suggests. Because of variation in distances from the line, a uniform goal of 15% reduction should not be utilized. Instead, for a block prioritized for EMF mitigation, the trench should be lowered to 11 feet, consistent with the low-cost mitigation measure adopted for use near schools. In areas where streets are not laid out in rectangular city blocks or where lowering trench depth on a block-by-block basis may not be the most logical approach, PG&E should use judgment in its application of this targeted EMF mitigation principle. Consistent with PG&E's commitment to place the line at least 34 feet from buildings where feasible,

PG&E should undertake this prioritized EMF mitigation for the residential class at least for all residential buildings with EMF exposures in excess of 3 mG, even if that exceeds the target 4% EMF budget. Prioritization and mitigation in this manner will provide the maximum amount of EMF mitigation for which there is record support, i.e., lowering the trench by 5 feet, to those customers who would be subject to the highest EMFs within a priority class.

The low-cost EMF mitigation measure providing deeper undergrounding near schools and other high priority customers applies in addition to the requirements regarding line placement, i.e., there may be locations where the line's alignment would be moved and it would be placed deeper underground. We believe that this approach provides a reasonable balance of targeted EMF mitigation in light of scientific studies that support legitimate concern regarding potential health effects of EMF exposure.

PG&E asserts that final design work would have to be complete for the entire project before blocks could be prioritized and a targeted EMF mitigation program designed. We disagree. We adopt a 4% budget for EMF mitigation as a target budget, not a cap. Based on its knowledge regarding likely line placement consistent with today's order, PG&E can update the EMF modeling it has already performed if needed. PG&E should then determine a threshold distance from the line, and the blocks with residential units (or comparable structures if mitigation is occurring for another priority class) within that distance from the likely line placement, for which EMF mitigation would be funded by the adopted EMF mitigation target budget. As we have discussed, the threshold distance should be at least 34 feet for the residential class, even if that means the target EMF budget is exceeded. PG&E may then proceed with construction and EMF mitigation along each stretch of line as it is installed. If final engineering identifies additional blocks with buildings within the priority class for which

targeted EMF mitigation is being undertaken within the established threshold distance from the line, PG&E should undertake EMF mitigation for those blocks. If PG&E exceeds the cost cap we adopt for the Jefferson-Martin project due to EMF mitigation expenses in excess of the adopted target budget for EMF mitigation, it may seek an increase in the cost cap pursuant to § 1005.5(b).

We recognize that PG&E may wish to proceed with final design work on the southern segment of the Jefferson-Martin project before we determine whether the tentatively approved northern route should be altered. If so, it should incorporate into the final design full EMF mitigation for all schools and residences along the approved route for the southern portion of the project.

D. Reconsideration of EMF Policies and Programs

This proceeding has brought to the forefront concerns and issues regarding EMF exposure due to high-voltage transmission lines, particularly when they are routed near schools and residences. For projects such as Jefferson-Martin where transmission lines must be routed through populated areas, it may not always be feasible to avoid such placements.

It has been over ten years since we conducted I.91-01-012 regarding EMFs associated with electric power facilities. As the record in this proceeding indicates, a significant body of scientific research has developed during the ensuing period. In particular, in 2002 DHS completed its comprehensive evaluation of existing scientific studies initiated as a result of our earlier investigation, as described in Section VI.A. While there is still no consensus in the scientific community regarding health risks of EMF exposure, DHS reported troubling indications that EMF exposure may increase risk of certain diseases and other health problems.

We believe the time is ripe to update our earlier investigation and, in particular, to address the policy implications of DHS's findings. In this proceeding, we have made a significant effort to respond to the intense public concern regarding EMF issues related to the Jefferson-Martin project. However, there is value in addressing such issues in an investigatory setting in order to avoid the need for such ad hoc treatment in future certificate proceedings. To this end, we plan to issue, either concurrently with this order or shortly thereafter, an Order Initiating Investigation into EMF issues. We contemplate that this investigation will address a range of EMF-related issues comparable to those examined in I.91-01-012.

The FEIR did not consider EMF exposure in its determination of the environmentally superior routes in this proceeding because there are no defined or adopted CEQA standards for categorizing EMF impacts or for designing mitigation measures to reduce those impacts. We are particularly interested in investigating whether CEQA standards or other guidelines should be adopted to facilitate consideration of EMF issues as an integral part of the CEQA analysis.

If we determine that EMF standards or guidelines are appropriate, such standards could provide useful assistance as we evaluate proposed projects and, earlier in the process, as the utilities design proposed transmission projects. Incorporation of EMF considerations into the CEQA process could also provide useful reassurance to the public that EMF concerns have been weighed in the balance as transmission projects are designed and considered in the future.

VII. Determination of Approved Route

We approve a route consisting of a hybrid of Route Option 1B and PG&E's Proposed Project in the southern segment and PG&E's Proposed Project in the northern segment modified to include Route Option 4B, subject to possible later

alteration of the northern route. The southern and northern segments will be connected using a new transition tower at Glenview Drive. The northern route may also be modified, depending on the preference of the City of San Bruno, to implement Mitigation Measure T-9a if desired to avoid the Huntington Avenue grade separation project. The approved route will have no significant unmitigable (Class I) impacts and, thus, its choice does not require a Statement of Overriding Considerations.

Of the northern routes analyzed in the FEIR, we prefer and tentatively approve PG&E's Proposed Project with Route Option 1B. However, we may alter this route determination based on further analysis of two alternatives that did not receive full analysis in the FEIR.

A. Southern Segment

We conclude that a hybrid of Route Option 1B and PG&E's Proposed Project should be authorized for the southern segment of the Jefferson-Martin project.

The southernmost portions of the PUA and the Proposed Project would each cause significant, unavoidable, and permanent visual impacts. For the Proposed Project, the FEIR describes significant unmitigable (Class I) impacts at key viewpoints at Edgewood County Park, along southbound I-280, Lexington Avenue, Black Mountain Road, and north of the Carolands substation. While the PUA would eliminate those visual impacts, it would create its own set of significant unmitigable visual impacts, particularly along Cañada Road near Edgewood Road, at the I-280 crossing south of Carolands substation, and at one of the new transition structures needed to cross San Mateo Creek. Route Option 1B would have no or at most minimal visual impacts, depending on which crossing of Crystal Springs Dam is chosen.

PG&E's proposed overhead route, with its taller and bulkier towers and widened right of way, would cause permanent degradation of recreation at Edgewood County Park just north of the Jefferson substation. The PUA would enhance the recreational resource because it would allow existing transmission towers to be removed from the park. Route Option 1B would not be routed through and thus would maintain the existing baseline environmental conditions in the park.

Of the southern route options, Route Option 1B would have the least impact on biological resources. Because construction would be in existing roadways, habitat disturbance would be minimized. Both the southern portion of the Proposed Project and the PUA would have impacts on wetlands and habitats for protected species which would require careful mitigation. The Proposed Project would require extensive construction and increased permanent disruption in SFPUC watershed lands. The PUA would require two new overhead corridors and the underground section would require trenching through serpentine grassland. The MPUA, which would move the underground segment of the PUA to the west, would require development of a new right of way and trenching and disturbance through more areas of undisturbed serpentine grassland and sensitive habitat.

Due to underground construction and in particular its reliance on Trousdale Drive and El Camino Real, Route Option 1B would cause more intense construction-related impacts than would the other southern alternatives. These construction impacts would include increased noise, traffic delays, and some limits on access to residences and businesses.

The FEIR finds that Route Option 1B is preferable to the other southern routes with respect to geology factors. Both the Proposed Project and the PUA raise seismic concerns because of their high exposure to the main trace of the

San Andreas fault near San Bruno Avenue. Route Option 1B would route the transmission line further to the east and would avoid the need for a transition station near the main trace. However, the Trousdale Drive portion of Route Option 1B would cross several traces of the Serra fault, which is classified as potentially active. Route Option 1B could encounter difficult excavation conditions related to existing underground utilities or artificial fill along Trousdale Drive and El Camino Real.

The FEIR did not consider EMF exposure in its determination of the environmentally superior alternative. In Section VI, we describe the magnetic field levels that would be created by the route options and the EMF mitigation measures we adopt. Residential EMF exposures would occur in the southernmost portion of PG&E's proposed above-ground route where the existing 60 kV line runs near residential neighborhoods. The PUA and the MPUA would mitigate these effects through selective re-routing or undergrounding in those areas. For Route Option 1B, EMF exposures would be most problematic north of Golf Course Road along Skyline Boulevard and along Trousdale Drive and El Camino Real.

The FEIR describes the possible creation of hybrid alternatives in the southern segment, with an intermediate transition station or tower allowing combinations of Route Option 1B and either the Proposed Project or the PUA. The overall environmental impact of each of the hybrid alternatives would encompass the impacts of the transition station or tower and the impacts of the route segments it connects.

One type of hybrid alternative would include the southernmost portion of either the Proposed Project or the PUA and would use Route Option 1B north of the intermediate transition station. We reject such hybrids because, among other

concerns, they would cause significant unmitigable impacts in the watershed lands south of the intermediate transition station.

The other type of hybrid alternative would include the southernmost portion of Route Option 1B, which would reduce visual and biological impacts in that area. Its use of either the Proposed Project or the PUA would avoid effects on Trousdale Drive, El Camino Real, and (with the Golf Course Drive transition station) Skyline Boulevard. Such a hybrid alternative would reduce EMF exposure relative to Route Option 1B. However, use of the Proposed Project or the PUA route between the intermediate transition station and the San Bruno Avenue area would cause impacts to watershed lands.

The FEIR finds that the hybrid alternatives using Route Option 1B south of the intermediate transition station would have no significant unmitigable environmental impacts. The FEIR concludes that Route Option 1B for the entire southern segment is environmentally superior to such hybrid configurations because it would be underground and would not incur the visual impacts and disturbance to native habitat of the hybrid alternatives along the above-ground portions of their routes. The FEIR did not consider concerns regarding EMF exposure in making its determination regarding the environmentally superior route.

We find that the hybrid alternative using Route Option 1B between the Jefferson substation, a transition tower replacing tower 11/70 west of Trousdale Drive, and PG&E's proposed overhead route north of the transition tower provides the best balance among the competing considerations. The portion of Route Option 1B south of the new transition tower will minimize visual and biological impacts in that portion of the route and will avoid impacts on Edgewood Park and the Pulgas Ridge Natural Preserve. The use of PG&E's proposed aboveground route north of the new transition tower will avoid Route

Option 1B's effects on residences and businesses along Trousdale Drive and El Camino Real as well as seismic concerns in that area.

The chosen hybrid route eliminates almost all EMF concerns regarding the 230 kV line in the southern segment. Along the aboveground portion of the route, the new 230 kV line will be collocated on rebuilt towers with one of the two existing 60 kV lines, and the second 60 kV circuit will be eliminated. This portion of the line is routed away from populated areas so that EMF exposures are and will remain minimal.

The only place that the 230 kV line will pass near residential homes in the underground portion of the southern segment is the portion of Route Option 1B along Skyline Boulevard just south of Trousdale Drive. With the adopted EMF management plan, it appears that magnetic field levels from the 230 kV underground line should not exceed 2.5 mG during medium loading conditions in any residence along this portion of the route.[30] While these levels may not entirely allay public concerns about EMF exposure, we believe that the chosen hybrid route provides a reasonable balance of EMF concerns and other considerations.

The FEIR identified several acceptable options for crossing Crystal Springs Dam that would avoid creation of significant impacts, including a revised overhead crossing, a "top of the dam" option, or a submarine cable option. Any

[30] With elimination of one of the two 60 kV circuits north of tower 11/70, it is not clear whether or the extent to which PG&E would de-energize or dismantle that 60 kV circuit between the Trousdale Drive transition tower and the Jefferson substation. If there are reduced power flows on the 60 kV line, this would reduce EMF levels along the line as well.

of these three options are acceptable crossing methods because they would minimize permanent impacts to the most relevant areas of land use, visual resources, and biology. PG&E is authorized to determine which of these options to utilize. We expect that the determination of which option to implement will be based on the timing of project construction and the preferences of the SFPUC and the County of San Mateo.

We authorize a transition tower at Glenview Drive for the transition between the hybrid southern route and the underground northern route. We agree with the FEIR's conclusion that, of the four transition options presented in the FEIR, the Glenview Drive transition tower is preferable because it avoids an underground crossing of the San Andreas Fault, is less visible than other alternatives, and avoids land use conflicts. It would have no significant unmitigable impacts.

In summary, the authorized hybrid alternative is expected to have no significant unmitigable (Class I) environmental impacts. Biological and other potential adverse impacts that could arise due to this hybrid can be mitigated satisfactorily with the mitigation measures we adopt in Section VIII.B and the EMF management plan we adopt in Section VI.C. While this hybrid route is expected to cost approximately $19 million more than PG&E's cost estimates for the southern segment of the original Proposed Project, as described in Section XI, this additional cost is reasonable in light of the benefits of the adopted route.

We are not in a position to assess the validity of the assertion by the NPS that it would have discretionary authority to review and approve any Jefferson-Martin configuration that requires expansion of PG&E's existing right of way through the SFPUC watershed. We note, however, that the NPS has suggested recently that it is willing to consider the hybrid route that we authorize.

B. Northern Segment

For the northern segment of the Jefferson-Martin project, the FEIR provides environmental analysis that allows a choice between the Proposed Project's underground segment and the Collocation Alternative. The FEIR finds that both routes, with certain modifications, are environmentally superior and that neither route would have significant unmitigable (Class I) impacts. We tentatively approve PG&E's Proposed Project in the northern segment modified to include Route Option 4B. The route may be further modified, depending on the preference of the City of San Bruno, to implement Mitigation Measure T-9a if desired to avoid the Huntington Avenue grade separation project.

Even with route options and mitigation measures designed to lessen its impacts, the Collocation Alternative would create greater impacts than the Proposed Project in several significant respects because of its construction through contaminated areas. The Collocation Alternative would have a high likelihood of encountering contaminated soils and groundwater during construction through and near three leaking underground tanks, two brownfield sites, and a capped landfill. By contrast, only one known contaminated site is likely to affect construction of the northern segment of the Proposed Project. Because construction would occur nearer to the San Francisco Bay, the Collocation Alternative would increase the likelihood of water quality effects on the Bay, compared to the Proposed Project.

The Proposed Project and the Collocation Alternative raise different seismic issues. The majority of the Collocation Alternative route would be in areas with either a very high or a high liquefaction potential along the Bay, whereas the Proposed Project runs further west near the San Andreas fault. We reject alternative configurations of the Proposed Project that would require the line to travel along or cross an active trace of the San Andreas fault. In Section

IV.C, we describe that the Jefferson-Martin line diversifies the path and source of power brought into San Francisco. Some of the benefit of that diversification would be lost if this portion of the line were collocated in the existing San Mateo-Martin corridor, particularly since the line would share liquefaction risks with the existing 230 kV underground line through that same area.

The Collocation Alternative raises concerns, although perhaps not insurmountable, regarding commercial and emergency access to hotels and other businesses along the route. As a benefit, the Collocation Alternative would avoid construction-related impacts to residential areas, schools, and transportation corridors that will be affected by the Proposed Project. The northern segment of the Proposed Project will be routed adjacent to about 120 residences, several apartment buildings, and several schools. The Collocation Alternative would affect very few residences and no schools and, thus, would engender less EMF concern.

The FEIR notes that the Collocation Alternative would require work near pre-historic resources east of San Bruno Mountain, whereas the Preferred Project will require excavation into native undisturbed soils and potentially fossil-bearing rock during construction. The Collocation Alternative would avoid crossing San Bruno Mountain in Guadalupe Canyon Parkway. The Preferred Project will require construction work in the Hillside Boulevard bikeway and work near other recreational facilities, especially in San Bruno Mountain State and County Park.

On balance, we find that risks associated with construction through contaminated areas and along the Bay, along with the loss of diversification arising from collocating the line with the existing underground 230 kV line, militate against our choosing the Collocation Alternative. While the Proposed Project will require careful mitigation to ensure that its construction and other

impacts are less than significant and to reduce EMF concerns, we find that it is better than the Collocation Alternative for the northern segment of the Jefferson-Martin project. We turn now to certain details regarding its route and mitigation measures.

In Section VII.A, we determine that a transition tower should be constructed at Glenview Drive to connect the overhead portion of the route to the northern segment. We find that, after transiting underground and exiting the Glenview Drive transition site, the line should travel north in Glenview Drive to San Bruno Avenue. San Bruno's request that the line use Skyline Boulevard rather than Glenview Drive to reach San Bruno Avenue is unacceptable because the line would travel along and cross an active trace of the San Andreas fault.

Consistent with the FEIR's assessment, we tentatively authorize the use of San Bruno Avenue for the project from Glenview Drive to Huntington Avenue. Seismic considerations are the primary factor in our choice of San Bruno Avenue rather than either Sneath Lane or Westborough Boulevard. While there are existing underground utilities, it appears that addition of the new 230 kV line will be feasible within San Bruno Avenue.

In the Proposed Project, the 230 kV line would turn north from San Bruno Avenue onto Huntington Avenue to the BART right of way. The FEIR describes that from San Bruno Avenue, two options are available depending on local jurisdiction preference as to whether the grade separation project at San Bruno Avenue and Huntington Avenue should be avoided or engineered as defined in Mitigation Measure T-9a. We tentatively authorize PG&E to determine whether to construct the line to the intersection of San Bruno Avenue and Huntington Avenue or route the line north on El Camino Real and then east on Sneath Lane consistent with Mitigation Measure T-9a.

As detailed in Section VI.B, several buildings along the BART right of way would be very close to the transmission line and would receive quite high EMF exposure. We note that, as an alternative, the line could travel north in El Camino Real to Lawndale / McLellan. This option was eliminated during the alternatives screening process and a full environmental analysis was not performed. As a result, we are not able to fully assess or approve such an alternative at this time.

We agree with the FEIR that Route Option 4B is preferable to Route Option 4A. Route Option 4B will avoid construction impacts to residences along Hoffman and Orange Streets. Because Hillside Boulevard and East Market Street are wider than Hoffman and Orange, construction impacts will be less and EMF levels in residences along the way will be less. While some buildings at Pollicita Middle School and Colma Elementary School are close to East Market Street, others are set further back. The adopted EMF mitigation measures will reduce EMF levels to some extent through deeper trenches and strategic placement within the right of way.

Even with the adopted mitigation measures, we are concerned about EMF exposures resulting Route Option 4B. An alternative routing over San Bruno Mountain may have the potential to avoid both contamination concerns regarding the Collocation Alternative and concerns regarding routing through dense residential neighborhoods and schools along Route Option 4A or 4B.

On June 8, 2004, the Assigned Commissioner instructed that environmental review of the El Camino Real and San Bruno Mountain route alternatives be undertaken. Based on the results, we may choose to supplement the FEIR so that we may determine whether to alter the Proposed Project route to incorporate one or both of these alternatives. We instruct PG&E to not begin

construction on the northern section until the evaluation of these alternatives is completed in compliance with the June 8, 2004 Assigned Commissioner Ruling.

VIII. Environmental Analysis

As required by CEQA, we cannot approve PG&E's Proposed Project or an alternative unless we find that the project has been modified to mitigate or avoid each significant effect on the environment or that specific considerations make the mitigation measures or alternatives identified in the FEIR infeasible, and that specific overriding economic, legal, social, technological, or other benefits of the project outweigh the significant effects on the environment. In this section, we address mitigation measures recommended in the EIR and suggested by the parties during the evidentiary hearings.

In Section VII, we describe the approved route for the Jefferson-Martin project and the specific reasons to support this choice based on the FEIR and other information in the record. The adopted mitigation measures reduce the environmental effects of the approved Jefferson-Martin project to less than significant levels. As a result, no Statement of Overriding Considerations is needed.

Finally, we certify the FEIR in this section.

A. Mitigation and Mitigation Monitoring

The conclusions in the FEIR regarding environmental impacts of the Proposed Project and its alternatives assume that the mitigation measures recommended in the FEIR and the impact-reduction measures proposed in the Proponent's Environmental Assessment, called Applicant Proposed Measures, are implemented. Certain modifications to the FEIR's mitigation measures are adopted in this section and included in an Addendum to the FEIR attached as Appendix A. Implementation of the Applicant Proposed Measures and the

adopted mitigation measures, including the Addendum in Appendix A, is a condition of the approval of this project.

PG&E asks that Mitigation Measure G-8a be revised to state that it applies only to a crossing of an active trace of the San Andreas fault. Mitigation Measure G-8a was intended to require the double-vault design only for the San Andreas fault, and the text of this measure is clarified in Appendix A in this regard. The measure is further clarified with an additional sentence addressing the Serra fault crossing that allows more flexibility in the design, but requires PG&E to take into consideration new fault analysis on the Serra fault. New fault analysis is required because of the disagreement between PG&E and the City of Burlingame about the displacement potential at the Serra fault and to ensure that an adequate structure is designed for the Serra fault crossing.

PG&E requests that Mitigation Measure L-7a, aimed at mitigating disrupted access to businesses and residences, be modified. PG&E is concerned that the requirement to provide access "at all times" by "quickly" laying a temporary steel bridge over the trench may not be feasible and may affect the construction schedule and project cost. PG&E maintains that compliance, to the extent feasible, may be counterproductive and could create, in certain situations, more significant adverse impact to traffic and create unsafe situations. In Appendix A, Mitigation Measure L-7a has been modified to allow more flexibility in the construction process while allowing construction to proceed as quickly as possible.

PG&E proposes modification to four biological resource mitigation measures and deletion of ten visual resource mitigation measures. These measures apply to the overhead portions of the southern segment, and all were modified in the FEIR in response to PG&E's concerns about the original measures. We modify Mitigation Measures B-5a and B-8a to include the option

to obtain a permit to remove and relocate wildlife to a wildlife shelter if other portions of the measures cannot be implemented. We also modify Mitigation Measure B-8b to require that PG&E recommend to the U.S. Fish and Wildlife Service that the County of San Mateo be involved in any consultations regarding project-related construction in Edgewood Park or San Bruno Mountain Park. We do not delete or further modify the other measures as modified in the FEIR.

The City of Burlingame requests that several mitigation measures be adopted in addition to those outlined in the FEIR. With adoption of the hybrid route in the southern segment which avoids Trousdale Drive and El Camino Real, some of Burlingame's requested mitigation measures may be of reduced importance. We address each of them in turn.

Depth of the duct bank. The City of Burlingame states that a 12-foot burial depth may be required because of existing utilities in Trousdale Drive and Skyline Boulevard. This concern would continue to apply along Skyline Boulevard with the approved route. Burlingame requested that the duct bank be installed in a manner consistent with its Public Works Department's standard that new utility infrastructure traversing the city (but not actually serving the city) within city streets be buried two feet below the lowest existing utility in the right of way. Pursuant to Mitigation Measure U-1b, PG&E will be required to submit to the Commission documentation that appropriate jurisdictions have reviewed the project plans with respect to protection of existing underground utilities. Documentation must specifically include evidence that the project meets all necessary local requirements, that it complies with design standards, and that affected jurisdictions (e.g., Burlingame's PG&E Public Works Department) approve the final plans. Thus, Mitigation Measure U-1b will ensure that PG&E complies with the subject Public Works Department standard.

Installation of cathodic protection systems. Burlingame is concerned that proximity of cast iron pipes to magnetic fields from the line would reduce the life expectancy of these pipes. Mitigation Measure U-1c already addresses Burlingame's concern.

Duration of disruption. Burlingame requests that the Commission require that PG&E commit to the completion of construction on both Skyline Boulevard and Trousdale Drive within six months of commencement of work on each of those roadways or establish a phased construction of the portion of the project which will travel down these streets. Requiring PG&E to commit to completing work on Skyline Boulevard streets within six months could conflict with other mitigation measures and increase impacts in other issue areas. If construction delays occur, construction would be forced to weekends and possibly nights, causing more noise impacts. We see phased construction as a preferable approach which also accomplish the City's goal. Pursuant to Mitigation Measure T-1a and Applicant Proposed Measure 13.3, PG&E will be required to develop a Transportation Management Plan that will include limits on the length of open cuts. PG&E will need to obtain Burlingame's input regarding and approval of the Transportation Management Plan for all construction areas within the City's public right of way. PG&E and Burlingame should agree upon a construction schedule during development and review of the Transportation Management Plan.

EMF management measures. In addition to deeper placement of the line, Burlingame requests that PG&E be required to mail specified EMF information to property owners within 300 feet of the line at least 90 days prior to commencement of construction. Mitigation Measure L-4a requires PG&E or its construction contractor to provide advance notice to residents or property owners within 300 feet of the alignment prior to the commencement of

construction. We require that, as part of the mailing required by Mitigation Measure L-4a, PG&E disseminate EMF information comparable to its previous EMF-related bill inserts but modified to reflect EMF management policies we adopt in Section VI.C for the Jefferson-Martin project. This requirement is not included in Appendix A, however, because it is not a CEQA-related mitigation measure.

Access to Franklin Elementary School and Hope Technology School. Burlingame's requested limitations on construction during school hours are not applicable to the adopted project route, since it bypasses these schools.

Access to Mills Peninsula Hospital. Burlingame's requests regarding access at the Mills Peninsula Hospital are not applicable to the adopted project route, since it bypasses this hospital.

Interference with parking. Burlingame requests that PG&E be required to provide alternative parking and compensation if access to a driveway is blocked for longer than specified times, and for a requirement that driveway access not be blocked for more than 72 consecutive hours. We believe existing mitigation measures are adequate in this regard. Pursuant to Applicant Proposed Measure 13.7, PG&E will be required to include details within its Transportation Management Plan regarding its residential notification process for temporary parking impacts and will minimize the length of any parking restrictions. Applicant Proposed Measure 13.6 requires PG&E to develop a plan to ensure adequate access at all times to affected businesses, homes, and other facilities. In addition, the Transportation Management Plan pursuant to Mitigation Measure T-1a requires the review and approval of all applicable jurisdictions such as the City of Burlingame.

Emergency access. Burlingame requests that 20 feet of clearance be maintained on city streets for emergency access at all times. We believe that

Mitigation Measure T-6a will ensure that sufficient emergency vehicle access will be maintained. PG&E will be required to accommodate emergency vehicles with provisions such as plating over excavations, short detours, and alternate routes at all locations where access is blocked. These emergency response vehicle provisions will be presented in the Transportation Management Plan, which will require the review and approval of all applicable jurisdictions such as the City of Burlingame

Noise control. Burlingame asks for restrictions on the times that construction activity may occur, limits on noise levels, and a prohibition on the use of pile drivers within Burlingame's city limits. Applicant Proposed Measure 15.1 and Mitigation Measures L-4a and L-4b provide adequate mitigation of noise impacts to all communities, including Burlingame. However, given Burlingame's specific concerns, Commission staff recommends, and we concur, that a new mitigation measure be adopted consistent with Burlingame's recommendations. New Mitigation Measure N-1a is included in Appendix A.

Information to property owners. Burlingame requests that there be at least two public meetings prior to commencement of construction within the city, and that PG&E be required to place a "door hanger" notice at each residence along Skyline Boulevard and Trousdale Drive prior to construction. Mitigation Measures L-4a and L-4b provide assurance that the public receives adequate notice regarding construction activities. However, the additional measures requested by Burlingame have been added to Mitigation Measure L-4a in response to the City of Burlingame's specific concerns.

We note that many of the FEIR Mitigation Measures and Applicant Proposed Measures that include the development of a plan (e.g., Mitigation Measures T-1a and T-6a and Application Proposed Measure 13.6) require that PG&E obtain approval of the plan from the applicable local jurisdictions, such as

the City of Burlingame. Although we believe that the combination of FEIR Mitigation Measures, modified FEIR Mitigation Measures, and Applicant Proposed Measures adequately address issues raised by the City of Burlingame, any unresolved concerns can also be addressed during the agency review period of the plans. Consistent with G.O. 131-D, Section XIV, public utilities are regularly required to consult with local agencies regarding land use matters. However, should the utility and agencies be unable to resolve their differences, the dispute may be brought to the Commission for resolution pursuant to the process outlined in the General Order.

Based on its assessment of the mitigation-related requests of PG&E and the City of Burlingame, the Commission's Energy Division staff has prepared an Addendum to the FEIR (attached as Appendix A) that documents the adopted modifications to the FEIR mitigation measures. The Addendum concludes that the adopted modifications to the FEIR mitigation measures will not result in a significant impact to the environment. The staff concluded that preparation of the Addendum was appropriate under CEQA Guidelines §§ 15162, 15163, and 15264, because an Addendum is required under CEQA to incorporate minor technical changes to the FEIR where there are no new significant impacts. Given the findings of staff, we approve the Addendum to the FEIR. The Addendum documents modifications of Mitigation Measures G-8a, L-4a, L-7a, B-5a, B-8a, and B-8b and addition of Mitigation Measure N-1a.

The FEIR includes a Mitigation Monitoring, Compliance, and Reporting Program, which presents the process for monitoring the implementation of the recommended mitigation measures and Applicant Proposed Measures.

B. Adequacy and Certification of the FEIR

The FEIR must contain specific information according to the CEQA Guidelines, §§ 15120 through 15132. The various elements of the FEIR satisfy these CEQA requirements. The FEIR consists of the draft EIR, with revisions in response to comments and other information received. Volume 3 of the FEIR contains the comments received on the draft EIR and individual responses to these comments.[31]

The Commission must conclude that the FEIR is in compliance with CEQA before approving PG&E's request for a CPCN. The basic purpose is to ensure that the environmental document is a comprehensive, accurate, and unbiased tool to be used by the lead agency and other decisionmakers in addressing the merits of the project. The document should embody "an interdisciplinary approach that will ensure the integrated use of the natural and social sciences and the consideration of qualitative as well as quantitative factors."[32] It must be prepared in a clear format and in plain language.[33] It must be analytical rather than encyclopedic, and emphasize alternatives over unnecessary description of the project.[34] Most importantly, it must be "organized and written in such a manner that [it] will be meaningful and useful to decisionmakers and the public."[35]

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[31] CEQA Guidelines, §15132.

[32] *Id.,* § 15142.

[33] *Id.,* §§ 15006(q) and (r), 15120, 15140.

[34] *Id.,* §§ 15006, 15141; Pub. Res. Code § 21003(c).

[35] Pub. Res. Code § 21003(b).

We believe that the FEIR meets these tests. It is a comprehensive, detailed, and complete document that clearly discusses the advantages and disadvantages of the environmentally superior routes, PG&E's proposed route, and various alternatives. We find that the FEIR is a competent and comprehensive informational tool that CEQA requires it to be. The quality of the information therein is such that we are confident of its accuracy. We have considered that information in approving the Jefferson-Martin project as described in this decision.

As described in Section II.C, we deny the motion and joinder seeking that the FEIR be recirculated.

The Commission should certify the FEIR and the Addendum contained in Appendix A.

IX. Consistency with Public Utilities Code Section 1002

Pub. Util. Code § 1002 requires the Commission to give consideration to community values, recreational and park areas, historical and aesthetic values, and influence on the environment. Our efforts here represent a balancing of these factors.

In determining that the Jefferson-Martin project is needed at this time, rather than deferring its construction until there is a demonstrated reliability need for the project, we give great weight to the community values of the Hunters Point and Bayview neighborhoods and their interest in closure of the Hunters Point power plant.

Except for the aboveground portion of the approved route, we have adopted environmentally superior alternatives as identified by our CEQA process. Use of the Route Option 1B configuration in the southernmost portion

of the route avoids impacts on Edgewood Park and the Pulgas Ridge Natural Preserve.

The hybrid configuration of the approved southern segment, with the above-ground portion between Trousdale Drive and Glenview Drive, is adopted in express consideration of the community values as expressed by County of San Mateo, the City of Burlingame, and other municipalities and consumer groups regarding the perceived importance of avoiding construction impacts and EMF exposure in populated areas along this portion of the route. While we do not adopt the PUA or the MPUA as some groups would have liked, the adopted hybrid configuration represents a reasonable balancing of the communities' interests and the need to protect environmental resources in the area. We believe that the impact of the above-ground portion of the authorized project on the SFPUC watershed can be minimized through the adopted mitigation measures.

We reject PG&E's proposed transition station at San Bruno Avenue in recognition of the City of San Bruno's redevelopment efforts and the community's desire to maintain a residential, recreational, and neighborhood commercial character for the area.

The environmental review of Daly City's suggested route over the San Bruno Mountain is being undertaken in express recognition of Daly City's strong desire to avoid placement of the transmission line through residential neighborhoods and near schools within its borders. We may choose to supplement the FEIR based on the results of that analysis so that we may fully consider that alternative under CEQA.

Thus, we have weighed all of the factors required under § 1002 and find that PG&E should be granted a certificate of public convenience and necessity for the Jefferson-Martin project as described herein.

X. Compliance with Public Utilities Code Section 625

Pub. Util. Code § 625 provides that a public utility that offers competitive services may not condemn any property for the purpose of competing with another entity unless the Commission finds that such an action would serve the public interest based on a hearing for which the owner of the property to be condemned has been noticed and the public has an opportunity to participate (Pub. Util. Code § 625(a)(1)(A)). However, an exception is made for condemnation actions that are necessary solely for an electric or gas company to meet a Commission-ordered obligation to serve. In that circumstance, the electric or gas company is required to provide notice on the Commission Calendar if and when it pursues installation of facilities for the purposes of providing competitive services (Pub. Util. Code § 625(a)(1)(B)).

PG&E states that the Jefferson-Martin project is being proposed and will be implemented to meet PG&E's obligation to serve. The project includes new fiber optic cable to provide internal communication links for line protection purposes. PG&E states that it has no current intention to use this fiber optic cable for competitive purposes or to lease it. In addition, since the San Francisco area is a net importer of power, there is no expectation that the Jefferson-Martin project could be used to export power from the area for competitive purposes.

In D.01-10-029, the Commission addressed the applicability of § 625 where PG&E is implementing a project to meet its obligation to serve, but aspects of the project may later have a competitive purpose. We described that § 625 provides two different levels of notice and oversight and that, "The lesser standard requires that when condemning properties to carry out a commission-ordered obligation, § 625 (a)(1)(B) is applicable, which only requires notice be provided to the Commission Calendar." With similar circumstances, we conclude as in

D.01-10-029 that the lesser standard, notice, applies for the Jefferson-Martin project.

XI. Project Costs

Pursuant to § 1005.5(a), we have jurisdiction and the responsibility to specify in the CPCN a "maximum cost determined to be reasonable and prudent" for the Jefferson-Martin project.[36] While FERC ultimately will decide how much of the costs for this project PG&E may recoup in transmission rates, we believe our cost cap has bearing on the amount PG&E may seek from FERC.

PG&E provided cost estimates for its Proposed Project and for several alternative routes considered during the proceeding. It also developed a cost matrix that allows cost estimates to be generated for full project routes by adding up the costs of various combined route segments in the cost matrix. PG&E's total cost estimates for some of the alternatives are as follow:

[36] We have affirmed our jurisdiction and responsibility regarding cost caps in several recent decisions, including D.01-05-059 and D.01-10-029.

PG&E's Proposed Project	$188.1 million
All-Underground Alternative (Route Option 1B in south with Proposed Project in north)	$212.5 million
Proposed Project in south with Collocation Alternative in north	$244.7 million
PUA in south with Proposed Project in north	$226.7 million
Route Option 1B to Golf Course transition to PUA to Proposed Project in north	$213.5 million
Route Option 1B to Trousdale transition To Proposed Project to Glenview Drive transition to Proposed Project in north[37]	$207.0 million
PUA to Trousdale transition to Route Option 1B to Proposed Project in north	$224.0 million

PG&E explains that much of the difference in its cost estimates for the PUA compared to the southern segment of its Proposed Project stems from biology mitigation-related costs that PG&E estimates it would incur if the PUA is selected. PG&E did not provide a cost estimate for the MPUA but maintains that it would likely cost more than the PUA because of greater biological impacts and because moving the underground portion further west would somewhat increase the length of the underground cables and related trenching.

280 Citizens contests PG&E's conclusion that the PUA would cost more than Route Option 1B, and argues to the contrary that Route Option 1B is likely

[37] This is the authorized route in Exhibit 147, Attachment 134, PG&E mistakenly labels this route as including the PUA rather than the Proposed Project between the Trousdale and Glenview Drive transition structures.

to be more expensive than the PUA and its variations. 280 Citizens states that PG&E is asking the Commission to believe that a 27-mile project, of which only 15 miles is underground (the PUA with the Proposed Project in the north) will cost more than a 27-mile project, all of which is underground (Route Option 1B with the Proposed Project in the north).

280 Citizens identifies several factors which, it contends, PG&E did not consider and which would increase the cost of Route Option 1B, including a deeper trench through Burlingame streets, additional splice vaults on Trousdale Drive, and removal and reconstruction of the El Camino Real median. PG&E responds that 280 Citizens has not substantiated these claims. PG&E continues to believe that trenching at a depth of twelve feet in Trousdale Drive and El Camino Real will not be necessary. PG&E also contests the need for additional splice vaults on Trousdale Drive and 280 Citizens claim that PG&E would have to remove and restore the median in El Camino Real.

280 Citizens estimates that the MPUA in the southern segment with the Proposed Project in the northern segment would cost $203.3 million. It maintains that its methodology of estimating an all-in per-mile construction cost is more reliable than PG&E's "artificially detailed" cost estimates that have no engineering to back up the details. 280 Citizens concludes that the MPUA would cost $9 million less than Route Option 1B, even if PG&E has not underestimated that cost. PG&E takes issue with 280 Citizen's "rule of thumb" approach and also contends that 280 Citizens significantly underestimates biological mitigation costs of the MPUA.

We adopt a tentative project cost cap for the approved route based on the record developed in this case. PG&E's cost estimate for this route is based on preliminary design work, at least for the segments of the project which are part of PG&E's Proposed Project, and on detailed cost estimates for each component

of the construction project. We recognize that detailed engineering estimates have not been completed for the project and that some of the adopted environmental and EMF mitigation measures may not have been considered when PG&E developed its cost estimate. The adopted project route includes Route Option 4B rather than PG&E's route Option 4A. However, we believe that PG&E included sufficient contingency factors in the estimating procedure so that its estimates are of a sufficient reliability so that we can adopt a cost cap. We have no reason to believe that PG&E cannot complete its project within the cost cap we adopt today.

We authorize a tentative total project cost cap of $206,988,000 for the approved Jefferson-Martin project, as reflected in PG&E's detailed cost estimates contained in Exhibit 147, Attachment 134. We may alter this cost cap if we alter the northern route, as discussed elsewhere in this decision. If, upon completion of the final, detailed engineering design-based construction estimates for the approved project, PG&E concludes that the costs will be materially (i.e., 1% or more) lower than the cost cap we adopt, PG&E shall submit with the estimate an explanation of why we should not revise the cost cap downward to reflect the new estimate. If the final estimate exceeds the cost cap we have adopted, then PG&E is free to exercise its rights to seek an increase in the cost cap pursuant to § 1005.5(b). However, the cost cap will not automatically adjust upward even if the final detailed costs exceed the cost cap.

XII. Comments on Proposed Decision

The proposed decision of the ALJ in this matter was mailed to the parties in accordance with § 311(d) and Rule 77.1 of the Commission Rules of Practice and Procedure. Comments were filed on _____ and reply comments were filed on _____.

XIII. Assignment of Proceeding

Loretta M. Lynch is the Assigned Commissioner and Charlotte F. TerKeurst is the assigned ALJ in this proceeding.

Findings of Fact

1. The draft EIR described the route of the Collocation Alternative and identified and discussed its possible environmental impacts at length. Parties were able to, and did, submit extensive and substantive comments on the Collocation Alternative.

2. The route options for the Collocation Alternative added in the FEIR do not constitute significant new information for which recirculation is required.

3. The project alternatives considered in the FEIR constitute a reasonable range of feasible alternatives, as required by the CEQA Guidelines.

4. It is reasonable to use PG&E's March 2003 load forecast in assessing need for the Jefferson-Martin project.

5. The Jefferson-Martin project is needed in order to allow PG&E to continue to reliably meet electric demand in the San Francisco Peninsula Area beginning in 2007, when demand is anticipated to be 1978 MW in the San Francisco Peninsula Area.

6. The Jefferson-Martin project has diversification, economic, and environmental benefits that warrant its construction before 2007.

7. The environmentally superior alternative for the Jefferson-Martin project based on the FEIR consists of Route Option 1B in the southern segment, with one of three acceptable crossings of the Crystal Springs Dam, in conjunction with either the Proposed Project's underground segment or the Collocation Alternative in the northern segment.

8. It is reasonable to modify PG&E's preliminary EMF management plan for the Jefferson-Martin project, as described in Section VI.C.

9. For the southern portion of the Jefferson-Martin project, the hybrid alternative using Route Option 1B between the Jefferson substation and a new transition tower replacing tower 11/70 west of Trousdale Drive, and PG&E's proposed overhead route north of the transition tower provides the best balance among competing considerations. In particular, it will minimize visual and biological impacts south of the transition tower, avoid impacts on Edgewood Park and the Pulgas Ridge Natural Preserve, avoid Route Option 1B's effects on residences and businesses along Trousdale Drive and El Camino Real and seismic concerns in that area, and eliminate almost all EMF concerns regarding the southern segment.

10. It is reasonable to allow PG&E to determine which of three options for crossing Crystal Springs Dam to utilize.

11. The environmentally superior route consisting of Route Option 1B in the southern segment in conjunction with the Proposed Project's underground segment poses less harm to the environment than do the other routes proposed by PG&E and other parties to this proceeding.

12. The Proposed Project's underground segment is preferable to the Collocation Alternative because of the risks associated with the Collocation Alternative's construction through contaminated areas and along the Bay and the loss of diversification due to its collocation with the existing underground 230 kV line.

13. Route Option 4B is preferable to Route Option 4A because it will avoid construction impacts to residences along Hoffman and Orange Streets.

14. The FEIR did not analyze two possible alterations to PG&E's underground Proposed Project that may have the potential to reduce EMF concerns along the route.

15. The route consisting of the hybrid alternative using Route Option 1B and PG&E's Proposed Project in the southern segment in conjunction with the Proposed Project's underground segment reflects community values more accurately than does the environmentally superior route.

16. We are not obligated to choose the least costly route if that route causes greater environmental harm than more costly routes or if some other route most closely reflects the prevalent community values.

17. The Commission has reviewed and considered the information in the FEIR before approving the project.

18. The FEIR identifies significant environmental effects of the route we tentatively approve that can be mitigated or avoided to the extent that they become not significant. The FEIR describes measures that will reduce or avoid such effects.

19. The environmental mitigation measures identified in the FEIR, with modifications in Appendix A, are feasible and will avoid significant environmental impacts.

20. As lead agency under CEQA, the Commission is required to monitor the implementation of mitigation measures adopted for this project to ensure full compliance with the provisions of the monitoring program.

21. The Mitigation Monitoring, Compliance, and Reporting Plan in Section G of the FEIR conforms to the recommendations of the FEIR for measures required to mitigate or avoid environmental effects of the project that can be reduced or avoided.

22. The Commission will develop a detailed implementation plan for the Mitigation Monitoring, Compliance, and Reporting Plan.

23. The FEIR identifies no significant environmental impact of the tentatively approved route that cannot be mitigated or avoided.

24. We have considered and approve of the discussion in the FEIR covering parks and recreation, cultural and historic resources, environmental impacts generally, and the public comment and response section.

25. A reasonable cost cap for the tentatively approved project is $206,988,000.

Conclusions of Law

1. The Commission has jurisdiction over the proposed project pursuant to Pub. Util. Code § 1001 et seq.

2. Recirculation of the FEIR is not required by CEQA because no "significant new information" is contained in the FEIR, as that term is used in CEQA.

3. The motion by the City of South San Francisco and CBE-101 requesting recirculation of the FEIR should be denied.

4. Because the FEIR considered a reasonable range of feasible alternatives, it is not necessary to amend the FEIR as Daly City suggests or to recirculate the FEIR for comments on Daly City's suggested alternative.

5. PG&E's preliminary EMF management plan for the Jefferson-Martin project should be modified as described in Section VI.C.

6. The Commission has authority to cap project costs pursuant to § 1005.5.

7. The Commission should approve a tentative price cap of $206,988,000 for this project.

8. This Commission's cost cap set pursuant to § 1005.5 has bearing on the amount of cost recovery PG&E may seek from the FERC.

9. The Commission retains authority to approve PG&E's EMF mitigation plan to ensure that it does not create other adverse environmental impacts.

10. Commission approval of PG&E's application, as modified herein, is in the public interest.

11. EMF mitigation measures, as described in Section VI.C, should be adopted and made conditions of project approval.

12. The environmental mitigation measures in the FEIR, as modified in Appendix A, should be adopted and made conditions of project approval

13. Project approval should be conditioned upon construction according to the hybrid route in the southern segment consisting of Route Option 1B in the southernnnmost segment, transitioning at existing tower 11/70 to PG&E's Proposed Project, and terminating at a new Glenview Drive transition tower, where it will connect to the underground northern segment.

14. Project approval should be conditioned upon construction according to PG&E's Proposed Project route in the northern segment modified to include Route Option 4B and with use of Mitigation Measure T-9a at the discretion of the City of San Bruno, with possible alteration of this route based on pending review of two route alternatives.

15. Project approval should be conditioned upon the completion of the mitigation measures identified in the FEIR, as modified in Appendix A. The mitigation measures are feasible and will minimize or avoid significant environmental impacts. Those mitigation measures should be adopted and made conditions of project approval.

16. After considering and weighing the values of the community, benefits to parks and recreational areas, the impacts on cultural and historic resources, and the environmental impacts caused by the project, we conclude that the CPCN for the Jefferson-Martin project as described in this decision should be approved.

17. Based on the completed record before us, we conclude that other alternatives identified in the FEIR are infeasible, pose more significant environmental impacts, or are less consistent with community values than the route we tentatively select in this decision.

18. Pub. Util. Code § 625(a)(l)(A) does not apply to this project. However, PG&E must provide notice pursuant to § 625(a)(l)(B) if and when it pursues installation of facilities for purposes of providing competitive services.

19. This order should be effective today so that PG&E may proceed expeditiously with construction of the authorized project.

O R D E R

IT IS ORDERED that:

1. The motion by the City of South San Francisco and Concerned Businesses East of Highway 101 requesting recirculation of the Final Environmental Impact Report (FEIR) is denied.

2. Official notice is taken of information on the website of the California Energy Commission (CEC) indicating that the City and County of San Francisco filed an Application for Certification on March 18, 2004 (CEC Docket No. 04-AFC-1) for three combustion turbines.

3. A Certificate of Public Convenience and Necessity is granted to Pacific Gas and Electric Company (PG&E) to construct an underground 230 kV transmission line in the County of San Mateo from PG&E's existing Jefferson substation to its existing Martin substation and associated substation upgrades.

4. PG&E shall, as a condition of approval, build the project in accordance with the hybrid southern route using Route Option 1B between the Jefferson substation and a new transition tower replacing tower 11/70 west of Trousdale Drive, and PG&E's proposed overhead route north of that transition tower to another transition tower at Glenview Drive. PG&E shall determine which of three identified options for crossing Crystal Springs Dam to utilize.

5. PG&E shall, as a condition of approval, build the project in accordance with the Proposed Project with Route Option 4B in the northern segment and with use of Mitigation Measure T-9a at the discretion of the City of San Bruno, subject to possible revision based upon review of additional route alternatives. PG&E shall not commence construction on the northern segment until the Commission determines whether the tentatively authorized route for the northern segment should be altered.

6. PG&E shall, as a condition of approval, comply with all applicable mitigation measures specified in the FEIR as modified by Appendix A attached hereto, as directed by the Commission's Executive Director or his designee(s). PG&E shall work with the Commission's Energy Division to create more detailed maps for use in construction and mitigation monitoring of the selected route to supplement those provided in Appendix A to this decision.

7. Modifications to PG&E's preliminary electric and magnetic field (EMF) plan for the Jefferson-Martin project are adopted as described in Section VI.C of this order.

8. PG&E shall, as a condition of approval, build the project in accordance with its preliminary electric and magnetic field (EMF) management plan as modified consistent with Section VI.C of this order.

9. PG&E's project costs shall be capped at $206,988,000 for the authorized project, subject to modification if the tentatively approved northern route is altered.

10. Once PG&E has developed a final detailed engineering design-based construction estimate for the adopted route, if this estimate is one percent or more lower than the adopted cost cap, PG&E must, within 30 days, show cause why the Commission should not lower the Pub. Util. Code § 1005.5 cost cap to reflect the final estimate.

11. PG&E shall, prior to commencing construction, submit a detailed EMF mitigation plan for approval of the Commission's Energy Division. The plan shall describe in detail each mitigation element, the cost of each element, and the percentage by which that mitigation will reduce EMF levels.

12. The Executive Director shall supervise and oversee construction of the project insofar as it relates to monitoring and enforcement of the mitigation conditions described in the FEIR as modified by Appendix A to this decision. The Executive Director may delegate his duties to one or more Commission staff members or outside staff. The Executive Director is authorized to employ staff independent of the Commission staff to carry out such functions, including, without limitation, the on-site environmental inspection, environmental monitoring, and environmental mitigation supervision of the construction of the project. Such staff may be individually qualified professional environmental monitors or may be employed by one or more firms or organizations. In monitoring the implementation of the environmental mitigation measures described in the FEIR as modified by Appendix A, the Executive Director shall attribute the acts and omissions of PG&E's employees, contractors, subcontractors, or other agents to PG&E. PG&E shall comply with all orders and directives of the Executive Director concerning implementation of the environmental mitigation measures described in the FEIR as modified by Appendix A.

20. The Executive Director shall not authorize PG&E to commence actual construction until PG&E has entered into a cost reimbursement agreement with the Commission for the recovery of the costs of the mitigation monitoring program described in Section G of the Final Environmental Impact Report, including, but not limited to, special studies, outside staff, or Commission staff costs directly attributable to mitigation monitoring. The Executive Director is

authorized to enter into an agreement with PG&E that provides for such reimbursement on terms and conditions consistent with this decision in a form satisfactory to the Executive Director. The terms and conditions of such agreement shall be deemed conditions of approval of the application to the same extent as if they were set forth in full in this decision.

21. PG&E's right to construct the project as set forth in this decision shall be subject to all other necessary state and local permitting processes and approvals.

22. PG&E shall file a written notice with the Commission, served on all parties to this proceeding, of its agreement, executed by an officer of PG&E duly authorized (as evidenced by a resolution of its board of directors duly authenticated by a secretary or assistant secretary of PG&E) to acknowledge PG&E's acceptance of the conditions set forth in the Ordering Paragraphs of this decision. Failure to file such notice within 75 days of the effective date of this decision shall result in the lapse of the authority granted by this decision.

23. The Final Environmental Impact Report and the Addendum in Appendix A for the Jefferson-Martin project are certified.

24. The Executive Director shall file a Notice of Determination for the project as required by the California Environmental Quality Act and the regulations promulgated pursuant thereto.

25. Upon satisfactory completion of the project, a notice of completion shall be filed with the Executive Director by the Energy Division.

This order is effective today.

Dated _____, at San Francisco, California.

ATTACHMENT A
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(END OF ATTACHMENT A)

APPENDIX A