Executive Summary

ES.1 Introduction/Background

The Pacific Gas and Electric Company (PG&E) filed an application (Application Number A.04-01-009) with the California Public Utilities Commission (CPUC) on January 9, 2004 for the Diablo Canyon Power Plant Steam Generator Replacement Project (Proposed Project). If approved, the Proposed Project would replace the existing original steam generators (OSGs) at Diablo Canyon Power Plant (DCPP) Units 1 and 2; establish ratemaking for cost recovery of replacing these generators; and allow PG&E to enter into long lead-time procurement contracts for the Proposed Project. The location of the Proposed Project is shown in Figure ES-1. The Proposed Project is composed of four major phases: (1) transportation of the replacement steam generators (RSGs) to DCPP; (2) staging and preparation of the RSGs; (3) removal, transport, and storage of the OSGs; and (4) RSG installation.

PG&E's stated objectives for the Proposed Project are:

- **Perform steam generator replacement on schedule to minimize the risk of forced outage or plant shutdown.** Replacement of DCPP's aging steam generators may reduce the risk of leakage, a permanent forced outage, or frequent mid-cycle inspections and the associated temporary plant shutdown. In addition, this objective serves to minimize the overall reduction in electrical generation at DCPP from continuing operation with ongoing tube degradation.
- **Reduce costs associated with tube degradation.** The second objective of the Proposed Project is to operate DCPP in a cost-efficient manner by reducing costs associated with tube degradation, which is expected to increase over the next few years. Costs associated with tube degradation include increased maintenance costs, increased tube plugging, use of expensive sleeving, and loss of electrical generation.
- **Ensure continued supply of low-cost power.** Each DCPP Unit provides approximately 1,100 MW of low-cost, zero-emission power to the California power supply. Another objective of the Proposed Project is to ensure that this supply of power remains available to California users until the end of the two current U.S. Nuclear Regulatory Commission (NRC) licenses for Unit 1 and Unit 2 (2021 and 2025, respectively).
- **Perform steam generator replacement on a least cost schedule.** Based on the current progression of tube degradation, the likelihood of a forced outage to replace the steam generators is substantially increasing, which in turn would increase the operating costs of DCPP. Replacing the steam generators according to the proposed schedule would ensure that such replacement is performed in the least cost manner.

The CPUC is the State lead agency responsible for compliance with the California Environmental Quality Act (CEQA). This ~~Draft~~ Environmental Impact Report (EIR) ~~has been~~was prepared by the CPUC in compliance with *CEQA Guidelines* (14 CCR Section 15000, et al.) and was published on March 21, 2005 with a 45-day comment period that ended on May 5, 2005. The Final EIR consists of two volumes and includes over 1,300 pages. Volume 1 (EIR) is completely re-printed from the Draft EIR. Changes made to the Draft EIR are marked in Volume 1: inserted text is underlined and deleted text is shown in ~~strikeout~~. Both types of changes are indicated with a vertical line in the margin. Volume 2 consists of all comments on the Draft EIR and responses to comments. Over 520 pages of comments on the Draft EIR were submitted to the CPUC.

This ~~Draft~~ EIR discloses the environmental impacts expected to result from the construction and operation of PG&E's Proposed Project and mitigation measures, which, if adopted by the CPUC or other responsible agencies, could avoid or minimize significant environmental effects. In accordance with *CEQA Guidelines* (14 CCR Section 15121), the EIR also evaluates alternatives to the Proposed Project that could avoid or minimize significant environmental effects. This ~~Draft~~ EIR provides a comparison of the environmental effects of the Proposed Project and the alternatives, and identifies the Environmentally Superior Alternative (14 CCR Section 15126.6 (e) (2)).

The DCPP Steam Generator Replacement Project EIR is an information document only and does not make a recommendation regarding the approval or denial of the Proposed Project. The purpose of the EIR is to inform the public on the environmental setting and impacts of the Proposed Project and alternatives. The EIR will be used by the CPUC to conduct proceedings to determine whether to approve the Proposed Project. In addition to the CPUC using this EIR as part of their specific approval process, this document may also be used by Responsible Agencies as defined by *CEQA Guidelines* Section 15381, including the County of San Luis Obispo and Port San Luis Harbor District, as part of their respective discretionary actions and approval process. This Executive Summary provides an overview of the Proposed Project and the alternatives considered, as well as the environmental findings and mitigation measures specified in the EIR.

Changes Made to the Draft EIR. In response to comments on the Draft EIR, numerous changes have been made in the Final EIR, including revised analysis and mitigation measures. Various text sections have been modified or clarified in response to comments. In addition, several mitigation measures have been modified for clarity or to ensure their feasibility (see various issue areas in Section D). However, no changes were made to the overall environmental assessment methodology or to the design of the project alternatives. The following major information has been added to or revised in this Final EIR:

- Additional quantification of air quality impacts;
- Revisions of mitigation measures related to seismic hazards to clarify the role of NRC;
- Clarification of Clean Water Act permitting requirements (resulting in new Mitigation Measure W-2a);
- Additional discussion of transporter impacts to parking lot surfaces (including addition of Mitigation Measure T-1a);
- Reorganization of traffic-related mitigation measures to improve implementation (resulting in elimination of Mitigation Measure T-3b);
- Additional discussion of transport activity light and glare impacts (including addition of Mitigation Measure V-1b)

Environmental Assessment Methodology

Environmental Baseline. Pursuant to *CEQA Guidelines* (Section 15125(a)), the environmental setting used to determine the impacts associated with the Proposed Project and alternatives is based on the environmental conditions that existed in the project area in October 2004 at the time the Notice of Preparation was published. The environmental baseline includes an operating nuclear power plant at DCPP, including two essentially identical nuclear reactor units, radioactive waste storage facilities, electrical transmission infrastructure, and other facilities, buildings, and systems. Included in the environmental baseline conditions are the existing NRC operating licenses for Units 1 and 2 that were approved after federal environmental review was conducted and allow the facility to operate until 2021 and 2025, respectively. In the

Figure ES-1. Regional Project Location
CLICK HERE TO VIEW

This page intentionally blank.

context of this pre-existing environment, wherein the DCPP is fully permitted to operate until the end of its NRC operating licenses, this EIR analyzes only the incremental changes that would be caused by the steam generator replacement project. These incremental changes are mainly limited to the short-term effects of steam generator replacement activities and the long-term presence of the OSG Storage Facility. Refer to Section 3.1 for a detailed description of the environmental assessment methodology for this ~~Draft~~ EIR.

Beyond the NRC License. This assessment does not evaluate the impacts that could occur if the DCPP facility is operated beyond the license expiration dates. Although it is true that implementation of the Proposed Project could provide an incentive for PG&E to apply to extend the licenses and thus may increase, to some degree, the likelihood that PG&E will apply for license extension, there are many other factors and processes that will come into play before PG&E determines whether or not to apply for license renewal. At this time PG&E has not formally proposed to renew the licenses, and license renewal is speculative and not a reasonably foreseeable outcome of the Proposed Project.

No Project Alternative. The No Project Alternative represents a continuation of current environmental conditions, with the foreseeable closure of DCPP, forced by deterioration of the steam generators. Because the OSGs would not be replaced, they would likely need to be taken out of service sometime after approximately 2013 or 2014, and DCPP would likely be shut down before the NRC license expiration dates 2021 and 2025. The surroundings would experience beneficial environmental effects by shutting down the routine operation of DCPP, most notably in the areas of marine biological resources and public safety. With regard to consequences of shutting down the DCPP facility, power generated by DCPP would need to be replaced by various generation and transmission solutions. For the most part, market forces and private investment decisions would dictate how and where replacement power would be provided, and the construction and operation of replacement facilities would be subject to separate environmental review and permitting processes that would need to be completed in the future. At this time, it would be remote and speculative to predict exactly how replacement power would be provided; given the wide range of possibilities, the types, sizes, number, or locations of replacement power projects that might be constructed under the No Project Alternative. Because of these limitations, the environmental assessment for the No Project Alternative does not analyze specific replacement power scenarios. The analysis discusses potential replacement power solutions in a more general manner and at a lesser level of detail than the Proposed Project.

Cumulative Impact Analysis. The cumulative impacts of the Proposed Project are also assessed. The focus in the cumulative impact analyses is to identify those project impacts that might not be significant when considered alone, but contribute to a significant impact when viewed in conjunction with future planned projects.

Preemption of State Regulation and Limited Scope of CEQA. The U.S. Nuclear Regulatory Commission is responsible for oversight and licensing of all commercial power, research, and test reactors, as well as the use of nuclear materials in the United States. The NRC has pre-emptive jurisdiction over State and local regulations regarding the use, storage, and transport of nuclear materials and protection of public safety (see Appendix 3 for list of the applicable NRC regulations for these processes). Federal law does not permit the NRC to delegate its responsibility for regulating nuclear power plants to states. Although the CPUC has no jurisdiction to regulate or condition the Proposed Project with respect to safety issues, nuclear materials handling and storage issues, including design, the CPUC has analyzed system and transportation safety issues to provide full disclosure of potential environmental impacts associated with the Proposed Project. In addition, the CPUC has identified mitigation measures to ensure public safety and/or safe practices during the transport and replacement activity processes. However, it is within the NRC's discretion to decide whether to impose any of the recommended measures.

Summary of ~~Draft~~ Final EIR Conclusions

This ~~Draft~~ Final EIR analyzes the environmental impacts of PG&E's Proposed Project along with Applicant-proposed alternatives and those that were developed as a result of citizen and agency input during the scoping process. Analysis is presented for alternatives to RSG offloading locations, temporary staging area (TSA) and OSG Storage Facility sites, offsite OSG disposal, and the No Project Alternative. As documented in detail in Section C (Alternatives), only one RSG offloading alternative (DCPP Intake Cove) was included in this ~~Draft~~ Final EIR. All other potential RSG offloading alternatives from Avila Beach to Montaña de Oro State Park were considered but eliminated from detailed consideration. All potential locations for TSAs and OSG Storage Facility sites that were identified by the Applicant are fully analyzed as alternatives in Section C. Based on comparison of the environmental impacts of the Proposed Project and alternatives, the Environmentally Superior Alternative is identified in Table ES-1. (See Sections ES.4.3 and E.2 for further details.).

Table ES-1. Environmentally Superior Alternative

Phase/Alternative	Environmentally Superior Alternative
RSG Offloading Alternatives	Intake Cove
TSA Alternatives	No preference, only minor differences between alternatives; Alternative B could reduce some minor environmental and safety concerns
OSG Storage Facility Location Alternatives	Any OSG Storage Facility location is preferred over Offsite Disposal; Alternatives C and D may reduce some minor environmental and safety concerns

CPUC Actions After Final EIR Publication. There is no comment period following issuance of the Final EIR. The CPUC will determine the adequacy of this Final EIR, and, if adequate, will certify the document as compliant with CEQA. Evidentiary Hearings will be held and the CPUC will issue a Decision on the proposed DCPP Steam Generator Replacement Project, which will be announced and published concurrent with a scheduled CPUC Meeting. The final decision is expected in September 2005. Within 30 days after the Decision is issued by the CPUC, parties can apply for rehearing.

Contents of the Executive Summary. The following sections provide a brief description of the Proposed Project and alternatives (including alternatives analyzed in detail and those eliminated from detailed consideration), a summary of environmental impacts in each environmental issue area, a summary of the comparison of alternatives, and tables listing all environmental impacts identified in the ~~Draft~~ EIR.

1.1 Proposed Project

Description of the Proposed Project

The Proposed Project would replace the original steam generators at DCPP Units 1 and 2. Each DCPP unit consists of four steam generators, for a total of eight steam generators at the site, all of which would be replaced as part of the Proposed Project. The Proposed Project would enable DCPP to continue to generate power until the end of the current NRC licenses (2021 and 2025). The four major phases of PG&E's Diablo Canyon Power Plant Steam Generator Replacement Project are as follows:

- **Replacement Steam Generator Transport** from an overseas manufacturer to a southern California port via heavy-load ship, offloading to a barge for travel to Port San Luis, and final transport with a ground transporter along Avila Beach Drive and the DCPP Access Road to the TSA within the DCPP site.

- **Replacement Steam Generator Staging and Preparation** of facilities, areas, equipment, workers, and the RSGs to allow for the sequential and on-schedule removal of the OSGs and installation of the RSGs. PG&E has proposed to locate the TSA facilities at the southern end of the site on a previously developed flat terrace area (see Figure ES-2).
- **Original Steam Generator Removal, Transport, and Storage** would consist of removing the OSGs from the containment structures and transporting them to a permanent onsite storage facility designed and constructed to store the OSGs until plant decommissioning. The OSG Storage Facility would consist of an 18,000-square-foot reinforced concrete building at the upper portion of the DCPP site near the 500 kV switchyard (see Figure ES-2).
- **Replacement Steam Generator Installation** and testing of RSGs.

Construction activities associated with the Proposed Project would occur on previously developed, disturbed land within the DCPP site boundary. The TSA would consist of some temporary buildings that would be removed after completion of the Proposed Project. See Section B (Project Description) of the ~~Draft~~ EIR for further details on the Proposed Project.

Environmental Setting of the Proposed Project

DCPP is located in unincorporated San Luis Obispo County roughly 12 miles west-southwest of the City of San Luis Obispo, 10 miles southeast of the City of Morro Bay, and approximately seven miles northwest of the community of Avila Beach. The DCPP property is bordered directly to the northeast by Montaña de Oro State Park. The existing DCPP facility encompasses a 760-acre high security zone within a total of 12,000 acres of coastline property jointly owned by PG&E and Eureka Energy Company (Eureka), a subsidiary of PG&E. See Figure ES-3 for a photo of the DCPP facility. With regard to the high security zone, PG&E owns 170 acres of DCPP property and leases the remaining 590 acres from Eureka.

DCPP is located within the Irish Hills, near the mouth of Diablo Creek. The coastal border of the DCPP property is defined by rocky bluffs with gently to moderately sloping terraces ranging from 70 to 100 feet above sea level. The majority of the structures comprising the DCPP complex were constructed several hundred feet from the sea cliffs on a flat terrace. Units 1 and 2 are housed in separate but adjacent containment structures on the main terrace at 85 feet above sea level.

The nearest residential communities are in Avila Beach and Los Osos. Avila Beach is located near the DCPP Access Gate, which is seven miles southeast of the project site. Los Osos is situated in a mountainous area adjacent to Montaña de Oro State Park and is located eight miles north of the Proposed Project site. Montaña del Oro State Park campground is approximately five miles from the project area and includes 54 campgrounds. Other cities and unincorporated residential areas exist along the coast and inland at a distance of more than eight miles from the project area. The public facilities closest to DCPP are the Port San Luis Harbor District facilities, which are located west of Avila Beach. Port San Luis includes a variety of recreational and commercial land uses.

There are a number of existing roads in the Proposed Project area, though none are open to the public, except for a short distance of Avila Beach Drive in Port San Luis. The primary road to DCPP, the Access Road, is a paved two-lane, approximately seven mile road running from the Access Gate at Port San Luis to the DCPP complex. This is the main access road into the property and it is used primarily by the power plant employees. Just north of the Access Gate is an unpaved spur road off the primary road that leads to the Point San Luis Lighthouse, and the Pecho Coast Trail, which is accessible to the public through docent-led tours (See Section D.8 for more information). The northern portion of the Diablo

Canyon lands between Montaña de Oro State Park and the DCPP facility includes several unpaved roads. The primary road in this area, North Road, serves as an emergency exit route from the DCPP area to a security gate at the State Park boundary.

1.2 Summary of Public Involvement

Prior to the release of the Draft EIR in March 2005, ~~T~~the CEQA process for the DCPP Steam Generator Replacement Project began with the CPUC's issuance of the Notice of Preparation (NOP) of an EIR. This act also commenced the public involvement portion of the Proposed Project.

- The CPUC issued the NOP on October 1, 2004, and distributed it to the State Clearinghouse (SCH No. 2004101001) and other federal, State, and local trustees and agencies that may be affected by the Proposed Project. The NOP was mailed to 304 interested or affected individuals, including nearby residents and persons at public agencies, private organizations, and interest groups. Addressees included 48 different private companies/groups, 37 separate public agencies/districts/groups, and 142 individual members of the public.
- Three scoping meetings were held prior to the final selection of alternatives and the preparation of the analysis presented in this EIR. The scoping meetings were conducted at the following locations and times: October 13, 2004 at 10:30 a.m. in the Auditorium at the CPUC offices in San Francisco and October 27, 2004 at 2:30 p.m. and 7:00 p.m. at the San Luis Obispo Library in San Luis Obispo.
- Approximately 130 individuals (approximately 20 in San Francisco, 50 at the afternoon meeting in San Luis Obispo, and 60 at the evening meeting in San Luis Obispo), attended the three scoping meetings, including representatives of organizations, interest groups, and government agencies. Verbal comments were received at all three scoping meetings — 2 in San Francisco, 23 at the afternoon meeting in San Luis Obispo, and 29 at the evening meeting in San Luis Obispo.
- Sixty-seven letters and e-mails were received during the NOP scoping period (October 1 to November 8, 2004) from public agencies, private organizations, and members of the public. In December 2004, a comprehensive Scoping Report was prepared summarizing comments received from the public and various agencies and public organizations.
- An EIR Internet website, e-mail address, and telephone hotline were created to disseminate project information, post all public environmental documents (including this ~~Draft~~ EIR), and announce upcoming public meetings.

Immediately upon release of the Draft EIR, an extensive notification and public involvement effort was implemented, including the following activities:

- The Notice of Release (NOR) of the Draft EIR was mailed to 145 federal, State, local, and county government agencies, school districts, non-profit organizations, and concerned members of the public at the time the Draft EIR was released.
- Copies of the full Draft EIR were sent to 127 interested parties and agencies and to three library repositories. One hundred forty-one copies of the Executive Summary and 49 CDs with the text of the Draft EIR were also sent out. An additional approximately 50 copies of the ES and 20 copies of CDs with the text of the Draft EIR were distributed at the workshops in April 2005.
- An announcement of the publication of the Draft EIR, including the project website address and the dates and times of the two Public Informational Workshops, was printed in two area newspapers.
- Two Public Informal Workshops were held (on April 19 and 20, 2005).
- The text of the Draft EIR was posted on the project website on the CPUC's Internet website.

Figure ES-2. Proposed Project
CLICK HERE TO VIEW

This page intentionally blank.

Figure ES-3. Diablo Canyon Power Plant
CLICK HERE TO VIEW

This page intentionally blank.

1.3 Areas of Controversy/Public Scoping Issues

Section 1.3.1 describes major issues raised during the scoping period, and Section 1.3.2 describes major comments made on the Draft EIR.

1.3.1 Scoping Issues and Comments

Private citizens provided the majority of the comments during the scoping process. A total of 67 written and 54 verbal comments were received during the scoping process from State and county government agencies, a special district, non-profit organizations, and concerned members of the public. In addition to comments from private individuals, the following government agencies submitted comments:

- California Public Utilities Commission Office of Ratepayer Advocates
- California Coastal Commission
- Port of San Luis Harbor District
- San Luis Obispo County Air Pollution Control District
- San Luis Obispo County Department of Planning and Building
- California Department of Forestry/San Luis Obispo County Fire Department

Comments were also received by the following community groups, non-profit organizations, and companies:

- California Energy Markets
- Citizens for Safe Access to Essential Services and Safe Milieus
- Community Food System Project of San Luis Obispo County
- Grueneich Resource Advocates (on behalf of: Mothers For Peace, Sierra Club, Public Citizen, Environment California, and Greenpeace)
- Latham & Watkins (on behalf of PG&E)
- Life on Planet Earth
- San Luis Obispo Green Party
- San Luis Obispo Mothers For Peace
- Sierra Club, Santa Lucia Chapter
- Zero Tolerance for Denied Shelter

The issues raised during the public scoping process are described in detail in the Scoping Report and are summarized below.

- **Purpose and Need.** The majority of comments received by members of the public and community organizations addressed the purpose and need of the Proposed Project. Many of these comments expressed opposition to the existence of DCPP and to the use of nuclear power in general. The stated preference of most commenters was to shut down DCPP and discontinue the use of nuclear power as a generation source in favor of the utilization of natural gas power plants or alternative and renewable energies such wind, solar, and wave power. It was understood by persons and organizations making comments that without the CPUC's approval of the Proposed Project, DCPP would continue to operate only until the existing steam generators reached the end of their operating lives, which is estimated to occur in 2013 or 2014. Another major objection from public citizens addressed the perceived excessiveness of the Proposed Project's cost, the understating of these costs as a result of PG&E neglecting to include future financial and human health/safety costs, and the passing of these costs onto ratepayers.

- **Human Environment Issues and Concerns.** Nearly all of the public and government agency comments raised strong concerns regarding the potential impacts of the Proposed Project on the human environment, most often expressing concerns regarding the security of the power plant, adequacy of emergency services in the event of an accident, and the public health and safety risks associated with the onsite storage of nuclear waste at DCPP. Other concerns dealt with transportation and traffic issues.
- **Physical Environment Issues and Concerns.** The comments from government agencies, community organizations, and private citizens expressed concerns about the potential impacts that the Proposed Project may have on the physical environment, particularly impacts to air quality and marine biology. In addition, concerns were also raised about the geologic stability of the area and whether the Proposed Project or its associated facilities would be negatively affected in the event of an earthquake.
- **Alternatives.** Many comments from private citizens and non-profit organizations supported the No Project Alternative. Other methods of electricity generation that were suggested include the repurposing of the DCPP facility as a combined-cycle natural gas power plant; the use of alternative and renewable energies such as depolymerization[1] and wind, solar, and wave power; and the use of these energies in combination with more conventional electricity generation methods. The only alternative to a Proposed Project component was the use of bunkered storage for the OSGs instead of an above-ground facility. General comments addressed the need to fully analyze all of the Proposed Project's alternatives.
- **Environmental Review and Decision Making Process.** Many comments addressed the scope of the Proposed Project and discussed specific issues that should be incorporated in the analysis. These issues included: (a) NRC license renewal and extension of the operating life of the DCPP; (b) cumulative impacts of extended and long-term operations; (c) new seismic information; (d) evaluation of security enhancements; (e) DCPP workforce retirement during the Proposed Project; and (f) long-term effects of onsite nuclear waste storage. A few comments also expressed concern that the NOP was not prepared correctly and should be reissued due to the exclusion of issues such as extension of life.
- **Jurisdiction.** Many comments submitted by government agencies provided recommendations regarding agencies that must be consulted, permits PG&E would be required to obtain, and major regulations that were applicable to the Proposed Project. Other comments suggested that San Luis Obispo County should be the lead agency or the co-lead agency with CPUC, and questioned the NRC's role in the Proposed Project.

1.3.2 Comments on the Draft EIR

A 45-day public comment period followed the issuance of the Draft EIR in March 2005. All comments received, as well as responses to each comment, are presented in Volume 2 of this Final EIR. The major issues raised in public comments are similar to those that were received during the scoping process. The issues are summarized in Section 1.3.1, Scoping Issues and Comments, above.

[1] The reversion of a polymer to its monomer, or to a polymer of lower molecular weight, thereby releasing energy (i.e., burning biomass).

ES.2 Alternatives

Alternatives to PG&E's Proposed Project are identified and evaluated in accordance with *CEQA Guidelines*. *CEQA Guidelines* (Section 15126.6(a)) state:

> ***An EIR shall describe a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project.***

CEQA Guidelines (Section 15364) define feasibility as:

> ***. . . capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.***

Alternatives to the Proposed Project were suggested during the scoping period by the general public, developed by EIR preparers, or presented by PG&E in its Proponent's Environmental Assessment (PEA) filed with its application on January 9, 2004. Alternatives include different RSG offloading locations, different TSA and OSG Storage Facility sites, and the consideration of offsite OSG disposal. See Figure ES-4 for a detailed illustration of the locations of the Proposed Project Alternatives. In addition, this EIR also evaluates a range of replacement power generation and transmission solutions including renewable energy technologies, demand-side management or conservation, and distributed generation under the No Project Alternative.

Alternatives to the Proposed Project were screened to determine which alternatives to carry forward for analysis in the EIR and which alternatives to eliminate from detailed consideration. The alternatives were primarily evaluated according to: (1) whether they would meet the basic project objectives; (2) whether they would be feasible considering legal, regulatory, economic, and technical constraints; and (3) whether they have the potential to substantially lessen any of the significant effects of the Proposed Project. Other factors considered, in accordance with *CEQA Guidelines* (Section 15126.6(f)(1)), were site suitability, economic viability, availability of infrastructure, general plan consistency, other regulatory limitations, jurisdictional boundaries, and proponent's control over alternative sites. Economic factors or costs of the alternatives (beyond economic feasibility) were not considered in the screening of alternatives since *CEQA Guidelines* require consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may "impede to some degree the attainment of project objectives or would be more costly" (Section 15126.6(b)).

The detailed results of the alternatives screening analysis are contained in Section C (Alternatives). Summary descriptions of the alternatives considered and the results of screening are provided below.

2.1 Alternatives Fully Evaluated in the EIR

PG&E developed a number of options to various phases of the Proposed Project, many of which involve only minor changes in location or scope. PG&E asked the CPUC to evaluate all of these options as part of the Proposed Project rather than alternatives. This approach would allow PG&E to have flexibility in selecting the appropriate option in coordination with the steam generator installation contractor. However, in order to fulfill the intent of the CEQA process and present a clear environmental analysis in the EIR, the CPUC asked PG&E to identify a preferred option for each phase of the project. In a November 22, 2004 response to a CPUC Data Request, PG&E identified their preferred option for offloading and trans-

port route, TSA locations, and OSG Storage Facility areas. These preferred options are the Proposed Project and are described in Section B (Project Description). All other options developed by PG&E are identified as alternatives to the Proposed Project and are carried forward in the impact assessment in Section D (Environmental Analysis).

Due to the long time horizon of two to four years between the publication of the Final EIR and the commencement of the Proposed Project, it may be necessary for PG&E to initiate a different alternative than the Project that may be approved by CPUC. If after the decision has been made, PG&E needs to change a project component that was not approved in the decision, PG&E would need to request that the CPUC evaluate the proposed changes and determine if the proposed substitution is substantially different from the Project approved by the CPUC. Depending on the alternative, the CPUC would need to revisit the impact analysis through the preparation of an addendum or supplemental EIR.

2.1.1 Replacement Steam Generator Offloading Alternative

Alternative Description. As an alternative to the proposed Port San Luis offloading location, the RSGs could be delivered by barge directly to the DCPP Intake Cove. See Figure ES-4 for an illustration of the location of the DCPP Intake Cove. Once inside the Intake Cove, the barge would anchor just west of the boat dock and the steam generators would be unloaded and transported along existing roads one mile to the RSG storage facility. Basic methods and equipment used for offloading would be similar to the Proposed Project. However, spacing constraints in the Intake Cove may require the use of two smaller barges, each carrying two steam generators, rather than one large barge carrying all four. This would increase the amount of time needed to offload the RSGs.

Rationale for Full Analysis. This alternative meets all the project objectives and is considered feasible because other heavy equipment has been offloaded at the Intake Cove. In addition, the DCPP Intake Cove offloading location alternative may reduce impacts to recreation, noise, transportation, and aesthetics, and therefore was retained for full analysis.

2.1.2 Temporary Staging Area Alternatives

Alternative Description. A temporary staging area would be required to accommodate temporary project activities and provide offices, fabrication, mock-up, weld testing, warehouse, and laydown areas. This space may also include additional parking and security processing facility enhancements. The Proposed Project location is described in Section B and illustrated in Figure ES-2. Three TSA alternatives are analyzed as TSA Alternatives A, B, and C in the ~~Draft~~ EIR in Section C and Figure ES-4. TSA Alternatives A and B are located in close proximity to one another in existing Parking Lots 7 and 8, respectively. Under TSA Alternative C, a second floor would be added to existing Warehouse B and a small building would be used for RSG storage in Parking Lot 1 (i.e., Proposed Project TSA location).

Rationale for Full Analysis. The TSA alternatives are expected to create similar impacts as the Proposed Project because all TSA facilities would require the same square footage and would be located on previously disturbed land. The TSA alternatives are basically variations of the Proposed Project TSA, and would therefore have similar degrees of feasibility and would all serve to satisfy project objectives.

TSA Alternative C may have additional impacts associated with construction of a second level in Warehouse B. Each of these TSA alternatives would temporarily reduce the number of available parking spaces for DCPP facility and project personnel.

Because these alternatives meet the Proposed Project objectives, are technically feasible, and may lessen existing onsite environmental effects, they have been evaluated in this ~~Draft~~ EIR.

Figure ES-4. Proposed Project Alternatives
CLICK HERE TO VIEW

This page intentionally blank.

2.1.3 Original Steam Generator Storage Facility Location Alternatives

Alternative Description. The four OSG Storage Facility location alternatives would be northeast of the DCPP facility (see Figure ES-4). Similar to the TSA alternatives, all OSG Storage Facility location alternatives are expected to create similar impacts because all OSG Storage Facility locations would require the same square footage and would be located on previously disturbed land. The Proposed Project OSG Storage Facility is described in Section B and shown in Figure ES-2.

OSG Storage Facility Location Alternative A would place the OSG Storage Facility in the northwest corner of the 500 kV switchyard within the DCPP facility. OSG Storage Facility Location Alternative B would locate the OSG Storage Facility on land that is currently occupied by Buildings 606, 607, and 608 and adjacent to Diablo Creek. OSG Storage Facility Location Alternative C would be located southwest of the intersection of Reservoir Road and Skyview Road. OSG Storage Facility Location Alternative D would be located directly west of OSG Storage Facility Location Alternative C.

Rationale for Full Analysis. Because these alternatives meet the project objectives, are technically feasible, and may lessen existing onsite environmental effects such as hydrologic and water quality impacts, they have all been evaluated in this ~~Draft~~ EIR.

2.1.4 Original Steam Generator Offsite Disposal Alternative

Alternative Description. This alternative would involve permanently removing the OSGs from DCPP to an offsite disposal facility. This approach would be similar to the methodology proposed by Southern California Edison (SCE) for the Steam Generator Replacement Project at San Onofre Nuclear Generating Station (SONGS). To prepare the OSGs for shipment, the upper section (e.g., the steam dome and internal components) would be removed from the lower section of the steam generator. The steam dome would be cut up to reduce the volume of waste, likely with the use of a plasma arc. The cut-up steam dome and other destroyed components of the OSGs would then be loaded into shipping containers transported to a licensed low-level radiological waste (LLRW) disposal facility.

From the Intake Cove or Port San Luis, the OSGs would be transported via barge to the selected permanent disposal facility or a transfer point for a different mode of transportation such as railway. No permanent disposal facilities have been selected at this time; however, appropriate facilities are located in Washington, Utah, and South Carolina.

Rationale for Full Analysis. This alternative is feasible, provides a viable alternative to onsite storage, and would alleviate community members' concerns regarding radiological exposure due to natural or human-caused catastrophic accidents. This alternative may create other impacts to areas outside the DCPP facility affected by offsite transport of low-level radioactive OSGs, but the specifics of potential impacts would not be known until a final route and disposal facility were selected. Because this alternative meets the Proposed Project objectives, is technically feasible, and may lessen existing onsite environmental effects such as potential construction impacts, this alternative has been evaluated in this ~~Draft~~ EIR.

2.1.5 No Project Alternative

In addition to the alternatives described above, this ~~Draft~~ EIR evaluates the No Project Alternative, in accordance with CEQA requirements. *CEQA Guidelines* (Section 15126.6(e)) state that the No Project Alternative must consider the conditions at the time of the Notice of Preparation (i.e., baseline environmental conditions) and the events or actions that would be reasonably expected to occur in the foreseeable

future if the project were not approved. Under the No Project Alternative the OSGs in Units 1 and 2 would not be replaced, and they would continue to degrade from stress ~~and~~ corrosion cracking. Under the No Project Alternative the OSGs would continue to operate through 2013 or 2014 based on PG&E's projections, at which point the steam generators would be shut down and Units 1 and 2 would no longer be available for electricity generation.

By causing early shutdown of DCPP, the No Project Alternative would result in the loss of approximately 2,200 MW of base-load system generation capacity. Power generated by DCPP would need to be replaced and the State's transmission system would need to be modified. It is assumed that PG&E would need to take an integrated approach to procure 2,200 MW of replacement power for its customers before 2013. An integrated approach to replace lost generation caused by the shutdown of DCPP would involve the following components.

Replacement Generation Facilities

Natural gas provides the fuel for most new power generation facilities. As stated in the California Energy Commission's *2003 Integrated Energy Policy Report*, ~~It~~ it is anticipated that environmental and safety concerns are likely to preclude the addition of new nuclear, hydroelectric, or coal- and oil-fired generation as replacement for DCPP. Section C.6.2 provides an analysis of these replacement generation facilities with their potential environmental impacts being noted in the subsequent sections.

PG&E has stated that they would need to design, permit and construct four or five combined cycle gas turbine power plants (500 MW or 750 MW plants) somewhere in northern California and in the southern Central Valley to replace the output of DCPP. The capital costs and energy requirements of using natural gas fired combined cycle power plant are described in Section C.6.1. The natural gas would need to be delivered through a pipeline system that can support the level of natural gas needed for a base-load power plant. Each new power plant would also require new transmission lines, as well as new or upgraded substations.

Replacement Transmission Facilities

Any large scale replacement generation facilities would need to connect to the PG&E transmission grid. Additionally, new transmission facilities could be used as a substitute for in-State generation by improving access to generation in the Pacific Northwest and Southwestern states. Major 500 kV transmission components connect DCPP to the Gates Substation in Fresno County and the Midway Substation in Kern County. Shutdown of DCPP would likely cause these segments to become obsolete, which would necessitate significant reconfiguration of the transmission grid in those areas.

Developing new transmission facilities requires roughly ten years of advance planning. Because of the difficulty of securing new rights-of-way, replacement transmission facilities would likely follow existing major paths.

Delivering an increment of 500 MW to customers would require a transmission line of approximately 230 kV or higher, which in turn necessitates large or substantially expanded rights-of-way. Transmission projects create two general categories of environmental impacts: short-term impacts during construction and long-term impacts that remain during operation of the transmission line.

Alternative Energy Technologies

The No Project Alternative also addressed the principal renewable and other alternative electricity generation technologies that do not burn fossil fuels as a means of providing replacement generation. These alternative technologies include solar thermal, photovoltaics, wind, geothermal, hydropower, fuel cells, and biomass. The technologies do not rely on a finite supply of fossil fuel, consume little water, and generate either zero or reduced levels of air pollutants and hazardous wastes. These technologies do, however, cause environmental impacts, and they also have technical feasibility limitations. High costs and, in some cases, limited dispatchability inhibit their market penetration. The ability of each of the seven alternative energy technologies to provide replacement power is summarized in Section C.6.3.

2.2 Alternatives Evaluated and Eliminated

The alternatives summarized below were evaluated for their potential to meet CEQA requirements, but were ultimately eliminated from consideration in the EIR. A more detailed description of each alternative and the rationale for its consideration and elimination is presented in Section C of this EIR.

2.2.1 Replacement Steam Generator Offloading Alternatives

Alternative Description. The area between Avila Beach and Montaña de Oro State Park was evaluated for alternative offloading locations. Alternative sites considered included those in the Port San Luis vicinity (Avila Beach, Cal Poly Pier, Olde Port Beach, Fisherman's Beach), those between Port San Luis and DCPP, those in the DCPP vicinity (Cove A, Patton Cove, Diablo Cove, Cove B, and Cove C), and those northwest of DCPP.

Rationale for Elimination. Potential offloading alternatives had similar reasons for elimination from full EIR consideration, including high densities of public usage, lack of technical feasibility, increased environmental impacts such as air quality, terrestrial and marine biology, and water quality or otherwise lack of a reduction in environmental impacts. Technical infeasibilities included steep cliffs immediately adjacent to the shoreline, turbulent ocean conditions, lack of roads capable of supporting steam generator transport, and presence of important recreational facilities. No potential offloading locations, except DCPP Intake Cove, reduced the environmental impacts of the Proposed Project, and therefore no other alternatives were carried forward for full analysis in this EIR. See Section C.5 in the ~~Draft~~ EIR for further details.

2.2.2 Temporary Staging Area Alternatives

Alternative Description. Due to the topography of the DCPP facility and the specific requirements for storage of the RSGs, there are a limited number of locations that would be suitable for the temporary staging area. PG&E identified a total of four possible locations in its PEA, based on an analysis of the environmental impacts and geologic stability in the area. These locations for the TSA are fully evaluated in this ~~Draft~~ EEIR as either the Proposed Project or an alternative. Other possible locations for alternatives were also considered.

Rationale for Elimination. Other possible TSA locations were not found to reduce environmental impacts as compared to the TSA locations identified by PG&E. Therefore, no other TSA locations were carried forward for full analysis in this EIR.

2.2.3 Original Steam Generator Storage Facility Location Alternatives

Alternative Description. The Proposed Project includes onsite storage of the OSGs in an 18,000-square-foot facility for the remainder of the operating life of DCPP. NRC requirements for construction and containment restrict the available locations for an OSG Storage Facility within the DCPP property. PG&E identified a total of five possible locations in its PEA, which are fully evaluated in this ~~Draft~~ EIR as either the Proposed Project or an alternative. The EIR preparers determined that no other onsite locations for the OSG Storage Facility were technically feasible except those identified by PG&E in its PEA.

ES.3 Environmental Impacts and Mitigation Measures

The analysis of environmental impacts is based upon the environmental setting applicable to each resource/issue and the manner in which the construction, operation, and maintenance of the Proposed Project or alternatives would affect the environmental setting and related resource conditions. The impact assessment methodology also considers the following three topics: (1) the regulatory setting, and evaluates whether the Proposed Project or alternatives would be consistent with adopted federal, State, and local regulations and guidelines, (2) growth-inducing impacts, and (3) cumulative impacts. Regulatory compliance issues are discussed in each resource/issue area section. This ~~Draft~~ EIR document is organized according to the following major issue area categories:

- Air Quality
- Biological Resources
- Cultural Resources
- Geology, Soils, and Paleontology
- Hazardous Materials
- Hydrology and Water Quality
- Land Use, Recreation, and Agriculture
- Noise and Vibration
- Public Services and Utilities
- Socioeconomics
- System and Transportation Safety
- Traffic and Circulation
- Visual Resources

In order to provide for a comprehensive and systematic evaluation of potential environmental consequences to the resource/issue areas, the environmental impact assessments for the Proposed Project and alternatives are based upon a classification system, with the following four associated definitions:

Class I: Significant impact; cannot be mitigated to a level that is not significant.
Class II: Significant impact; can be mitigated to a level that is not significant.
Class III: Adverse impact, less than significant.
Class IV: Beneficial impact.

This EIR describes feasible mitigation measures that could minimize significant adverse impacts (*CEQA Guidelines* Section 15226.4). Within each issue area, mitigation measures are recommended where environmental effects could be substantially minimized. The mitigation measures recommended by this study have been identified in the impact assessment sections of the EIR and are presented in Mitigation Monitoring Program tables at the end of the analysis for each resource/issue area.

The major findings of the EIR analysis are summarized below according to resource issue area. Regulatory issues pertinent to each resource are identified, along with a summary of the primary impacts that would be expected from the construction and operation of the Proposed Project. Comparative effects of the alternatives are also provided. Impact findings and mitigation measures for the Proposed Project and alternatives are summarized in Tables ES-6 and ES-7, at the end of this Executive Summary.

3.1 Environmental Assessment Methodology

3.1.1 Environmental Baseline

Pursuant to *CEQA Guidelines* (Section 15125(a)), the environmental setting used to determine the impacts associated with the Proposed Project and alternatives is based on the environmental conditions that existed in the project area in October 2004 at the time the Notice of Preparation was published.

The environmental baseline includes an operating nuclear power plant at DCPP, including two essentially identical nuclear reactor units, radioactive waste storage facilities, electrical transmission infrastructure, and other facilities, buildings, and systems. Included in the environmental baseline conditions are the existing NRC operating licenses for Units 1 and 2 that allow the facility to operate until 2021 and 2025, respectively. These licenses were approved after a federal environmental review was conducted that included an analysis of the potential environmental impacts associated with the operation of DCPP Units 1 and 2 for 40 years, through the end of the licensing periods. The baseline, therefore, includes any potential environmental effects of operating the nuclear power plant through the end of the NRC licenses, including the time period between when the OSGs would be expected to reach the NRC-mandated plugging limit in approximately 2013/2014 if not replaced with the Proposed Project and the end of the NRC operating licenses in 2021/2025.

Comments received during the Scoping Period, following the publication of the Notice of Preparation, pointed out that routine operation of the nuclear power plant affects the existing environment, including the surrounding aesthetics, marine biological resources, land use, public safety, etc. These environmental effects have been previously reviewed and approved by the NRC and predecessor and cooperating agencies prior to and at periodic intervals over the life of the licenses.[2]

In the context of this pre-existing environment, wherein the DCPP is fully permitted to operate until the end of its NRC operating licenses, this EIR analyzes only the incremental changes that would be caused by the steam generator replacement project. These incremental changes are mainly limited to the short-term effects of steam generator replacement activities and the long-term presence of the OSG Storage Facility. The existence of the operating nuclear power plant through the NRC authorized license period and its ongoing effects on aesthetics, marine biological resources, land use, public safety, etc., are not a consequence of the Proposed Project. However, as discussed in Section 3.1.3 below, the analysis in this EIR of the No Project Alternative does provide comparative data concerning effects to these resources if DCPP were to not operate between 2013/2014 and the end of the NRC operating licenses in 2021/2025.

3.1.2 Beyond the NRC License

This assessment does not evaluate the impacts that could occur if the DCPP facility is operated beyond the license expiration dates. PG&E has not formally proposed to renew the licenses, nor is license renewal a reasonably foreseeable outcome of the Proposed Project. While it is true that implementation of the Proposed Project could provide an incentive for PG&E to apply to extend the licenses and thus may increase, to some degree, the likelihood that PG&E will apply for license extension, there are many other factors and processes that will come into play before PG&E even decides whether or not to apply for license renewal. In response to a data request from the CPUC, PG&E has indicated that it currently has no

[2] The U.S. Atomic Energy Commission (the precursor to the NRC) conducted an environmental review under NEPA for DCPP in 1973. During the life of DCPP, project-specific CEQA review has also been conducted for certain permits for construction of structures at the plant (PG&E, Response of Pacific Gas and Electric to CPUC Deficiency Notice, May 10, 2004, 2004a).

plans to apply to the NRC for renewal of the licenses and has not yet decided whether to apply for such renewal (PG&E, 2004b). According to PG&E, a preliminary feasibility assessment was completed in June 2003 to determine the information, regulatory hurdles, and studies that would be needed before PG&E could decide whether to apply for license renewal. That feasibility assessment recommended that a "License Renewal Feasibility Project" be established to further study the prospect of license renewal and the data that would be needed for such an endeavor. PG&E has indicated that the recommended License Renewal Feasibility Project has not yet begun, and that such feasibility analysis will itself take two to three years and must be completed before PG&E will be in a position to decide whether to apply to extend the licenses. If PG&E does indeed decide to apply to the NRC for license renewal, then the NRC regulatory process including safety and environmental analyses and public hearings, would be undertaken before the NRC could reach a decision on whether to extend the licenses. At this point, therefore, license renewal is remote and speculative and need not be considered in this document. License renewal is not a reasonably foreseeable consequence of the Proposed Project given the feasibility, analytical and regulatory hurdles to license renewal (let alone PG&E's decision on whether to apply for license renewal). In addition, NRC license renewal is not considered to be a cumulative project because the formal NRC license renewal application process has not been initiated. As mentioned above in Section 3.1.1, this EIR analyzes the incremental changes of the Proposed Project, which are limited to short-term effects of steam generator replacement activities and the long-term presence of the OSG Storage Facility.

Nonetheless, a separate section describing the NRC license renewal process is provided in Section G of the ~~Draft~~ EIR, for informational purposes only. The discussion identifies the license renewal process timeframe and the NRC environmental and engineering/safety review that would accompany the renewal process. The NRC environmental review conducted according to 10 CFR 51 involves a Generic Environmental Impact Statement (GEIS) that assesses the potential environmental impacts of license renewal. This review would conform to the requirements of NEPA by providing full evaluation of the environmental effects of continued operation of the nuclear power plant. A CEQA process may also occur at that time if the license renewal triggers any discretionary State or local approvals, such as ratemaking decisions by the CPUC. As stated in Section G.1 of the ~~Draft~~ EIR, PG&E currently has no plans to apply to the NRC for renewal of the operating licenses at DCPP, however PG&E has taken preliminary steps toward gathering the information that would be needed to consider license renewal for DCPP. See Section G of the ~~Draft~~ EIR for further details on NRC license renewal procedures and PG&E's position on NRC license renewal.

3.1.3 No Project Alternative

The No Project Alternative represents a continuation of current environmental conditions, with the foreseeable closure of DCPP, forced by deterioration of the steam generators. Because the original steam generators would not be replaced, they would likely need to be taken out of service sometime after approximately 2013 or 2014, and DCPP would likely be shut down before the NRC license expiration dates. The surroundings would experience beneficial environmental effects by shutting down the routine operation of DCPP, most notably in the areas of marine biological resources and public safety.

With regard to consequences of shutting down the DCPP facility, power generated by DCPP would need to be replaced and modifications to the statewide transmission system would be needed. A range of replacement generation (including renewable energy sources and demand-side management or conservation) and transmission solutions are considered. The No Project Alternative is described fully in Section C.6 of the ~~Draft~~ EIR.

This environmental assessment does not analyze any specific scenarios for providing replacement power-generating capacity or transmission system upgrades. For the most part, market forces and private investment decisions would dictate how and where replacement power would be provided. Construction and operation of replacement facilities would also be subject to separate permitting processes and environmental review that would need to be completed in the future. It would be unduly remote and speculative to forecast exactly how any replacement power would be provided; given the wide range of possibilities, the types, sizes, number, or locations of replacement power projects that might be constructed under the No Project Alternative cannot be predicted. Therefore, the environmental consequences of the No Project Alternative are discussed in a general manner, given that a detailed analysis of specific power plant or transmission projects would not be possible or meaningful. Because of these limitations, the analysis for the No Project Alternative is at a lesser level of detail than the Proposed Project.

3.1.4 Cumulative Impacts

The cumulative impacts of the Proposed Project are also assessed. The focus in the cumulative impact analyses is to identify those project impacts that might not be significant when considered alone, but contribute to a significant impact when viewed in conjunction with future planned projects (listed in Section F of the ~~Draft~~ EIR).

3.1.5 Preemption of State Regulation and Limited Scope of CEQA

As described in Section A of the ~~Draft~~ EIR, regulation of the DCPP by the CPUC is limited by federal laws and regulations governing atomic and nuclear energy. A power plant that uses radioisotopes in the production of energy is required to comply with the federal Atomic Energy Act (42 U.S.C. Section 2011). The NRC was created to issue operating licenses under the Atomic Energy Act and to enforce the requirements of the Act and the licenses. Federal law does not permit the NRC to delegate its responsibility for regulating nuclear power plants to states. According to 10 CFR 50.59, the Proposed Project would require an NRC license amendment only if changes would be made to the parameters outlined in the final safety analysis report. PG&E has determined that it would not be necessary to apply for a NRC license amendment for the Proposed Project because technical specifications in its current license do not need to be changed (PG&E, 2004). Federal regulations (e.g., 10 CFR Parts 20, 50, 51, 71, and 72) also govern the possession, handling, storage, and transportation of radioactive materials from a nuclear power plant. See Appendix 3 (MRS, 2005) for more information on the federal regulations that govern these activities. The CPUC is preempted from imposing upon the operators any requirements concerning radiation hazards and nuclear safety.[3] For these reasons, this EIR analyzes for informational purposes project activities that are exclusively regulated by the federal government through the Atomic Energy Act and other regulations.

The scope of CEQA, as stated in *CEQA Guidelines* [Section 15131(a)], is also limited such that the economic and social effects of a project cannot be treated as significant effects on the environment. Therefore, this EIR provides only general information on the following issues:

- Plant safety and the risk of radiation exposure from normal or upset conditions at the nuclear power plant governed by NRC regulations and preempted from State-level control by the federal Atomic Energy Act.
- Proper handling or storage of radioactive waste, including the original steam generators, governed by NRC and DOT regulations and preempted from State-level control by the federal Atomic Energy Act.

[3] *Pacific Gas and Electric Company v. State Energy Commission*, 461 U.S. 190, 103 S.Ct. 1713 (1983).

- Seismic safety of the DCPP in its current design and certain permanent project components (e.g., the OSG Storage Facility), subject to NRC engineering review.
- Emergency response plans, which are not changed by the Proposed Project.
- Economic costs of the Proposed Project and ratepayer issues, which are addressed in the CPUC general proceeding (A.04-01-009).

3.2 Air Quality

3.2.1 Proposed Project

Replacement Steam Generator Transport

Potentially significant emissions may result from tugboat and barge operations within Port San Luis, the use of off-road transport equipment, on-road truck and vehicles used for traffic control, and workers commuting to and from the Proposed Project. Combustion of fuels during transport of the RSGs would generate emissions that would affect local air quality for the brief duration of transport activities. By implementing the recommendations of the San Luis Obispo Air Pollution Control District (SLOAPCD) along with mitigation measures for trip reduction, diesel emissions control, mitigation funding, and analysis of acute health risks, the potentially significant yet short-term impact of emissions from transport activities would be reduced to a less than significant level.

Replacement Steam Generator Staging and Preparation

Mobile and heavy-duty off-road equipment used to construct the TSA facilities would be diesel- and gasoline-powered and would contribute to the existing violations of ozone and particulate matter in the region during the short-term duration of the work. The construction activities during staging and preparation would involve routine construction equipment and on-road traffic. The potential adverse impacts to air quality from on-road traffic emissions and diesel equipment combustion emissions would be reduced to a less than significant level with proper implementation of the recommended mitigation measures.

Original Steam Generator Removal, Transport, and Storage

Similar to the emissions during RSG transport, combustion emissions from equipment used for OSG removal, transportation, and storage activities would contribute to the existing violations of ozone and particulate matter in the region during the short-term duration of the work. Implementation of the mitigation measures would reduce the air quality impacts associated with heavy-duty machinery and worker vehicle commute emissions to a less than significant level.

Construction activities required to build the OSG Storage Facility would cause emissions from excavating equipment and the need for concrete mixing. Dry material handling and concrete mixing equipment would create short-term emissions of dust and combustion contaminants. Implementation of the appropriate recommendations and SLOAPCD requirements would reduce emissions caused by OSG Storage Facility construction to a less than significant level.

Replacement Steam Generator Installation

Installation of the RSGs would involve use of similar construction equipment and would therefore result in similar emissions to those related to facility staging and preparation and OSG removal and transport. Emissions during RSG installation are not expected to impede attainment or maintenance of the ambient

air quality standards and with implementation of the mitigation measures, air quality impacts would be less than significant. There would be no permanent emission sources associated with the Proposed Project or the return to service, and after project completion, air quality conditions would be unchanged when compared to the existing environmental setting.

3.2.2 Alternatives

Replacement Steam Generator Offloading Alternative

The range of equipment needed for the DCPP Intake Cove alternative would be slightly smaller than that needed for the Proposed Project, and the activity would occur mainly at the Intake Cove. The impacts and recommendations are similar to the Proposed Project with regard to emissions from construction and transport equipment. In general, air quality impacts from the Intake Cove alternative would be less intense and of shorter duration than the Proposed Project. By implementing the recommendations of the SLOAPCD along with mitigation measures for trip reduction, diesel emissions control and mitigation funding, the potentially significant yet short-term impact of emissions from RSG transport activities would be reduced to a less than significant level.

Temporary Staging Area Location Alternatives

The air quality impacts of constructing the RSG storage facility and other temporary staging facilities at each alternative TSA location would be similar. In each case, mobile and heavy-duty off-road equipment would create diesel combustion emissions, and emissions from on-road traffic would be caused by commuting workers and during the delivery of construction materials. Emissions of dust would not be likely to cause a significant impact because all alternative TSA locations would be located on previously paved surfaces, and the amount of land disturbed would be minimal. The combustion emissions from activity at each alternative TSA location would be potentially significant, however, mitigation measures identified for the Proposed Project would reduce impacts from on-road traffic emissions and diesel equipment combustion emissions to a less than significant level.

Original Steam Generator Disposal or Storage Alternatives

The air quality impacts of constructing the OSG Storage Facility at each alternative location would be similar. In each case, off-road construction equipment used for earthwork, excavation, and backfilling would create diesel combustion emissions, and emissions from on-road traffic would be caused by workers commuting and during the delivery of construction materials. Emissions of dust and combustion contaminants would require a permit or registration with the SLOAPCD. With mitigation, air quality impacts would be less than significant.

Disposal of the OSGs at an offsite location would likely involve use of specialized transporters or heavy-duty tractor trailers on the roads accessing DCPP and regional highways. Similar to the activities related to RSG delivery and transport, emissions from on-highway traffic or possibly tugboats for OSG offsite transport would not impede attainment or maintenance of the ambient air quality standards, as long as feasible mitigation is implemented.

No Project Alternative

The No Project Alternative would probably cause DCPP to shut down before the NRC license expiration, and emissions from DCPP routine operations, including workers' vehicles commuting to the site, would cease. Without the Proposed Project, new generation or transmission facilities would be installed in

San Luis Obispo County or elsewhere in northern California or the southern Central Valley to compensate for the lost generation of DCPP. Residual air quality impacts could occur if new power plants cause emissions to become localized within areas of substantial existing pollution.

3.3 Biological Resources

3.3.1 Proposed Project

Replacement Steam Generator Transport

Offloading RSGs would cause increased vessel traffic within Port San Luis that could have an adverse impact on marine mammals and sea turtles; however, recommended mitigation measures, such as marine mammal observer training, could reduce this potential impact to less than significant levels. In addition, RSG offloading activities would temporarily impact ~~intertidal~~ subtidal habitats in Port San Luis. After the RSGs are offloaded, transport would take place on paved surfaces, and thus no impacts to vegetation are expected. Minor indirect temporary effects to wildlife could occur as a result of increased lighting and noise during transport. In addition, minor sedimentation associated with runoff from portions of the road during transport could also temporarily affect local aquatic species; these impacts are considered adverse but less than significant.

Replacement Steam Generator Staging and Preparation

The construction of TSA facilities would take place on developed property and would not affect vegetation or wildlife. However, if vehicles travel beyond the limits of any previously disturbed or developed areas, native vegetation including sage scrub, oak woodland, and chaparral could be affected. Residual impacts could be reduced to less than significant levels with mitigation measures that specify proper delineation of disturbance limits. Marine biological resources would not be adversely affected by staging and preparation because all activities associated with staging and preparation would occur onshore.

Original Steam Generator Removal, Transport, and Storage

Original steam generator removal, transport, and storage would occur on previously disturbed and paved sites. Therefore, no direct impacts to biological resources would be expected. Soil disposal during OSG Storage Facility construction has the potential to result in indirect impacts to vegetation and wildlife. If the soil disposal areas are re-vegetated according to recommended mitigation, this impact would be reduced to less than significant levels. All activities associated with OSG removal, transportation and storage would occur onshore and, therefore, would not adversely impact marine biological resources.

Replacement Steam Generator Installation

The installation of the RSG would take place within completely developed portions of the DCPP facility. No impacts to terrestrial or marine biological resources are anticipated.

3.3.2 Alternatives

Replacement Steam Generator Offloading Alternative

Use of the DCPP Intake Cove location for offloading the RSGs would require disturbance of a narrow strip of mostly non-native, ruderal vegetation located close to the water's edge. The impact to this small amount of native and non-native vegetation would be less than significant. A nearby bluff supports some native species, and a minor impact to native vegetation could occur if vehicles accessed areas beyond

the currently disturbed area. Increased vessel traffic within Intake Cove could have an adverse impact on marine mammals and sea turtles, but marine mammal observer training could reduce this potential impact to less than significant levels.

Temporary Staging Area Location Alternatives

Most of the TSA location alternatives would be located on paved lots with no potential for adverse impacts to surrounding vegetation or wildlife communities. Although use of TSA Alternative C would not be expected to result in the direct loss of vegetation and wildlife habitat, there could be unintended disturbance to native communities and wildlife habitat near or adjacent to the site. Delineation of disturbance limits would reduce this potential impact to a less than significant level. All TSA location alternatives would occur on land and would therefore have no significant adverse impacts to marine biological resources.

Original Steam Generator Disposal or Storage Alternatives

All OSG Storage Facility alternative locations would have similar impacts to terrestrial and marine biological resources. Unintended disturbance to native communities and wildlife habitat near or adjacent to the any OSG Storage Facility alternative site could be potentially significant. With the implementation delineation of disturbance limits, impacts to terrestrial biological resources would be less than significant. All activities associated with OSG onsite storage would occur onshore and, therefore, would not adversely affect marine biological resources.

If the OSGs would be removed from the site, a long-term OSG Storage Facility and associated excavation would not be required, but transport of the OSGs to the disposal facility could result in impacts similar to those identified for RSG offloading and transport.

No Project Alternative

Under the No Project Alternative, the habitats at the DCPP site would remain largely unchanged for the short term, with gradual benefits to local habitats occurring after shutdown of Units 1 and 2. Limited areas may be returned to native habitat sooner than under the Proposed Project, and shutdown of Units 1 and 2 would reduce the baseline effects of the DCPP cooling water system on the marine environment. No ground disturbance or other physical modification of the lands surrounding DCPP would occur, so none of the potential impacts of the Proposed Project would occur. Offsite, alternative sources of energy would be required to make up for the lost generating capacity, including construction of new generating facilities. Impacts to biological resources could be significant if new facilities are built in areas supporting sensitive habitats, plants, or animals. There would be no likely adverse impacts to the marine environment under the No Project Alternative.

3.4 Cultural Resources

3.4.1 Proposed Project

Replacement Steam Generator Transport

The previously identified or potentially eligible historic and prehistoric resources in the Port San Luis vicinity include the Harford Pier and the Harford Pier Warehouse. Known prehistoric resources are located in the headlands west of the Harford Pier. Offloading the RSGs at Port San Luis would not adversely affect previously recorded historical or archaeological resources.

Replacement Steam Generator Staging and Preparation

The DCPP site has been the subject of previous cultural resource surveys, and archaeological resources are known to exist within the area. However, all project-related activities would occur on previously disturbed land without previously identified cultural resources. No known historic or archaeological resources are known to exist within the proposed TSA location. Construction of the TSA would occur on paved parking lots and would require limited ground-disturbing activities for installation of utilities. Staging and preparation activities would not be likely to cause adverse impacts on cultural resources. If ground-disturbing activities should occur, implementation of a Cultural Resources Treatment Plan (CRTP) and construction monitoring would reduce impacts to cultural resources to a less than significant level.

Original Steam Generator Removal, Transport, and Storage

Removal, transport, and storage of the OSGs would not occur in areas previously identified as containing cultural resources. Removal and transport activities would occur entirely on previously disturbed and paved surfaces of the DCPP site. Any ground disturbance related to OSG Storage Facility construction would not affect any cultural resources.

Replacement Steam Generator Installation

RSG installation activities would occur entirely on previously disturbed and paved surfaces of the DCPP site, and they would not be located in an area with previously recorded cultural resources.

3.4.2 Alternatives

Replacement Steam Generator Offloading Alternative

The offloading area at DCPP Intake Cove has been previously disturbed and offloading the RSGs at this location is not expected to create new ground disturbances. This alternative would use existing roads for transporting the RSGs, and these roads do not traverse any known historical or archaeological resources.

Temporary Staging Area Location Alternatives

Each of the alternative TSA locations has been previously disturbed by leveling and do not contain known cultural resources. The use of existing facilities or construction of temporary facilities under these TSA alternatives would require limited ground-disturbing activities for installing utilities. In the event of substantial ground-disturbing activity, proposed mitigation would reduce potential impacts to previously undetected cultural resources to less than significant levels.

Original Steam Generator Disposal or Storage Alternatives

All OSG Storage Facility alternative locations would be located in an area of the Diablo Canyon Creek drainage that has been filled in with man-made fill. Consequently, any disturbances created by the construction of the OSG Storage Facility would not affect any cultural resources.

Potential impacts associated with disposal of the OSG at an offsite location would be similar to that identified for RSG offloading. Offsite disposal of the OSGs would not affect cultural resources.

No Project Alternative

The No Project Alternative would most likely cause DCPP to shut down prior to the expiration of the NRC licenses and would diminish the potential for damaging any unknown cultural resources in the area or on the DCPP property. However, ~~N~~new generation facilities could be sited in a manner that reduces or avoids impact on cultural resources; however, significant impacts may still occur depending upon the location chosen. Mitigation would be specific to the site selected and the type of generation constructed. In comparison to the Proposed Project, the No Project Alternative may have a greater likelihood of affecting cultural resources, since the Proposed Project's few ground disturbance activities would occur in an area with minor potential for cultural resources.

3.5 Geology, Soils, and Paleontology

3.5.1 Proposed Project

Replacement Steam Generator Transport

The RSG transport route from Port San Luis to DCPP would cross over areas of potentially unstable earth materials. The extremely heavy transport loads and equipment would add an unusual load to the roads along the transport route. In certain places, it is possible that steam generator transport could exceed the capacity of the road to support the vehicles. Although not likely, an earthquake could exacerbate these unstable conditions to the point of endangering worker safety. Proposed mitigation measures include geological reports and studies, road improvement plans and safety plans. Implementation of these measures would reduce the impacts of unstable ground and worker safety to less than significant levels.

Replacement Steam Generator Staging and Preparation

The proposed TSA would be located on a previously developed flat terrace area and would have no impacts to geology, soils, or paleontology. Similar to RSG transport, seismic hazards could endanger worker safety but with implementation of mitigation measures including development of safety plans and removal or stabilization of rocks and boulders, the potential impacts would be reduced to a less than significant level.

Original Steam Generator Removal, Transport, and Storage

During the OSG removal and transport stages, the Proposed Project would involve transport of heavy loads along the route to the OSG Storage Facility, and the site could be affected by an earthquake, which could jeopardize worker safety. Implementation of mitigation measures would ensure that potentially unstable transport routes to the OSG Storage Facility are not overloaded and that workers are protected from falling rock or toppling equipment. Long-term slope stability issues and earthquake induced ground shaking could adversely affect the OSG Storage Facility. Recommended mitigation to update the Long Term Seismic Program and evaluate and remediate potential slope instability in the vicinity of the proposed OSG Storage Facility would reduce potential impacts to less than significant levels.

Replacement Steam Generator Installation

There would be only transient impacts from the possibility of seismic ground shaking during steam generator installation. As identified for other phases of work, an earthquake during this phase could jeopardize worker safety. Mitigation measures to develop a worker safety plan and evaluate and remediate potential slope instability would reduce impacts to less than significant levels. There would be no impacts to geological, soils, or paleontological resources from this phase of the Proposed Project.

3.5.2 Alternatives

Replacement Steam Generator Offloading Alternative

Under this alternative, the narrow access road between DCPP Intake Cove and the rest of the facility would be subjected to extremely heavy loads during transport of the RSGs. Ground shaking could loosen boulders from the top or sides of the cliff and the offloading could jeopardize worker safety. Implementation of proposed mitigation measures as described for this component of the Proposed Project would reduce any potential impacts to less than significant levels.

Temporary Staging Area Location Alternatives

All TSA location alternatives would occupy paved and previously modified surfaces. There would be no geologic impact for any of these sites other than the previously discussed issues associated with ground shaking. Implementation of mitigation measures to develop a worker safety plan and remove or stabilize rocks and boulders would reduce these potential impacts to a less than significant level.

Original Steam Generator Disposal or Storage Alternatives

Each of the alternative OSG Storage Facility locations would be exposed to approximately similar seismic hazards including ground shaking and slope instability. Implementing the recommended mitigation measures to update the Long Term Seismic Program and evaluate and remediate slope instability would address the seismic ground shaking hazard and would reduce the impact of the slope instability hazard to a less than significant level.

Offsite disposal of the OSGs would eliminate the need for construction of the OSG Storage Facility and thus would not require the same geotechnical and construction preparation as onsite storage. Potential impacts, if any, would occur at the alternative offsite storage location instead.

No Project Alternative

The No Project Alternative would probably cause the power plant to shut down in approximately 2013 or 2014. This would decrease the potential for infrastructure damage or worker injury due to earthquakes or landslides. However, ~~R~~replacement power plants based on either fossil fuels or renewable energy sources may have local geological impacts or be affected by geological hazards. Facility siting requirements, normally addressed through CEQA compliance or a similar process (i.e., out-of-state production), would likely ensure that the replacement facilities are designed and built to minimize geological impacts or exposure to geological hazards.

3.6 Hazardous Materials

3.6.1 Proposed Project

Replacement Steam Generator Transport

Offloading and transport of the RSGs would involve short-term use of heavy equipment that requires hazardous materials to operate. During transport of the RSGs, hazardous materials such as vehicle fuels, oils, and other vehicle maintenance fluids would be used and stored onsite. Spills of hazardous materials during transport activities could potentially cause soil or groundwater contamination. Mitigation measures including spill response procedures and proper handling of hazardous waste would ensure that these potential impacts would remain at less than significant levels.

Replacement Steam Generator Staging and Preparation

Development of temporary facilities would also involve routine use and storage of hazardous materials such as vehicle fuels, oils, and other vehicle maintenance fluids. Excavation and/or construction dewatering during staging and preparation may encounter previously unknown hazardous materials contamination of soil or groundwater. Implementation of mitigation measures for a stop work contingency plan and proper notification and containment would reduce any potential hazardous materials impacts to less than significant levels.

Original Steam Generator Removal, Transport, and Storage

Hazardous materials may be encountered during dismantling activities associated with OSG removal. Previously unknown asbestos or lead could be encountered, which would require immediate implementation of compliance with federal, State, and local regulations and prevention of significant asbestos and lead exposure to construction works and DCPP personnel. OSG Storage Facility construction– and excavation-related impacts would be similar to those potentially occurring during staging facility construction and may include spills, improper use and disposal of solvents and oils, or encountering previously unknown contaminated soils. Mitigation measures to implement spill response procedures, conduct routine inspections, properly contain and handle maintenance waste, and stop work and notify appropriate personnel would reduce potential impacts to less than significant levels.

Replacement Steam Generator Installation

During activities related to steam generator installation, hazardous materials and waste may be generated. Spills or improper use and disposal of solvents, cleaners, or replacement of used waste oils and lubricants during routine maintenance or unscheduled repairs may harm the environment or adversely affect human health and safety if proper use and disposal procedures are not followed. Spills could potentially cause soil or groundwater contamination. Mitigation measures including proper spill response procedures and handling of maintenance waste would ensure that these potential impacts are reduced to a less than significant level.

3.6.2 Alternatives

Replacement Steam Generator Offloading Alternative

Offloading at DCPP Intake Cove would involve a shorter transport distance. However, spills or improper use and disposal of hazardous materials may impair the environment much more quickly than they would in the vicinity of Port San Luis. Spills could potentially cause soil or groundwater contamination. Mitigation measures including spill response procedures, proper handling of hazardous waste, and proper maintenance of heavy duty transporters would ensure that these potential impacts are less than significant.

Temporary Staging Area Location Alternatives

During construction activities related to steam generator staging at alternative TSA locations, similar amounts and types of hazardous materials and waste may be generated. Hazardous material spills could potentially cause soil or groundwater contamination. Mitigation measures including spill response procedures, proper handling of hazardous waste, and equipment maintenance and inspection would ensure that these impacts are less than significant.

Original Steam Generator Disposal or Storage Alternatives

Excavation related to OSG Storage Facility construction could encounter previously unknown contaminated soil or groundwater. OSG Storage Facility construction related impacts would be similar to those potentially encountered during TSA construction and would require the same mitigation to reduce potential impacts to less than significant.

No Project Alternative

Discontinuing operations at DCPP would decrease the risk for potential spills, leaks, ruptures, or otherwise release of hazardous materials that could cause soil or water contamination and would eliminate the continuation of hazardous materials generation at DCPP. Replacement ~~New~~ power facilities and related construction activities would need to comply with federal, State, and local requirements for hazardous materials management, which would include strategies to minimize potential impacts.

3.7 Hydrology and Water Quality

3.7.1 Proposed Project

Replacement Steam Generator Transport

Offloading activities within Port San Luis could potentially disturb underwater sediments and reduce water quality locally. Disturbance of marine sediments is not considered a significant water quality impact because the bed is sandy, offloading would be done at high tide, and no dredging would be required. All marine sediment disturbance would be short-term and would not be likely to substantially degrade water quality. Spills of materials used by offloading and transport equipment or vehicles could substantially degrade surface water quality. Recommended mitigation measures to implement spill response procedures, conduct routine inspections and maintenance of transporters, and properly handle waste would reduce this potential impact to a less than significant level.

Replacement Steam Generator Staging and Preparation

Stormwater draining to Diablo Canyon Creek and the Pacific Ocean could be contaminated by spilled materials during construction and use of TSA facilities. Construction of these facilities would require a Stormwater Pollution Prevention Plan (SWPPP), which would ensure that soil and sediment disturbance is kept to a minimum and contained to the maximum extent possible, thereby decreasing potential impacts to less than significant levels. In addition, mitigation measures for proper handling of hazardous materials and implementation of a spill contingency plan would ensure any potential impacts to hydrology and water quality remain at less than significant levels.

Original Steam Generator Removal, Transport, and Storage

Fuel or other contaminants associated with heavy equipment used in the removal and transportation of the OSGs, as well as during construction of the OSG Storage Facility, could spill and contaminate surface waters. Recommended mitigation for spill response procedures and proper handling of waste would reduce this potential impact to a less than significant level.

Replacement Steam Generator Installation

Heavy equipment would be used in the RSG installation and return to service. Fuel or other contaminants associated with heavy equipment used in this operation could spill and contaminate surface waters. Recommended mitigation for spill response procedures and proper handling of waste would reduce this potential impact to a less than significant level.

3.7.2 Alternatives

Replacement Steam Generator Offloading Alternative

Offloading the RSGs at the DCPP Intake Cove could disturb marine sediments or accidentally introduce contaminants to the ocean water. Disturbance of marine sediments is not expected to cause significant adverse impacts and substantial contaminant spills would be unlikely. Recommended mitigation measures for spill response procedures, transporter inspection and maintenance, and to properly handle waste would reduce this potential impact to a less than significant level.

Temporary Staging Area Location Alternatives

Stormwater draining to Diablo Canyon Creek and the Pacific Ocean could be contaminated by spilled materials during construction and use of TSA facilities. Construction of these facilities would require a SWPPP, which would ensure that soil and sediment disturbance is kept to a minimum and contained to the maximum extent possible, thereby decreasing potential impacts to less than significant levels. In addition, mitigation measures for proper handling of hazardous materials and implementation of a spill contingency plan would reduce any potential impacts to hydrology and water quality to a less than significant level.

Original Steam Generator Disposal or Storage Alternatives

Potential impacts and mitigation measures related to water quality would be the same as the Proposed Project and recommended mitigation for spill response procedures and proper handling of waste would reduce these potential impacts to a less than significant level.

The OSG Storage Facility Alternative A would be constructed on top of fill that has been placed in Diablo Canyon and directly in the path of any overflow that might occur should the culvert beneath the fill become plugged or otherwise not sufficient to convey incoming flood waters. Overflow waters overtopping the fill would be conveyed around the facility in a channel designed for this purpose, which would protect OSG Storage Facility Alternative A from damage. No adverse effects would be related to flooding at locations for Alternatives B, C, or D.

Spills of hazardous materials during transportation of the OSGs to an offsite facility would likely cause no additional adverse hydrologic or water quality impacts but could potentially cause soil or groundwater contamination due to a hazardous materials spill or leak from transport equipment. These impacts would be mitigated to a less than significant level by implementation of recommended mitigation measures for spill response procedures, routine transporter inspection and maintenance and proper handling of hazardous materials.

No Project Alternative

The early shutdown of DCPP in 2013 or 2014 under the No Project Alternative and subsequent decommissioning would most likely decrease the possibility of surface water degradation from DCPP wastewater discharge. However, ~~H~~hydrology and water quality impacts associated with construction and excavation for several new power plants or other energy infrastructure needed to replace power currently provided by DCPP would be substantially greater than those identified for the Proposed Project. Alternative energy technologies would likely involve construction impacts over a large area that would be expected to have substantially greater impacts on nearby streams and water bodies as a result of related erosion and sedimentation.

3.8 Land Use, Recreation, and Agriculture

3.8.1 Proposed Project

Replacement Steam Generator Transport

RSG transport would pass through recreational facilities at Port San Luis and at the Pecho Coast Trail. In addition, recreational activities at Port San Luis may be temporarily disrupted during RSG offloading and transport. Impacts on recreational users would be considered potentially significant, but would be reduced to less than significant levels with implementation of proposed mitigation measures that include not scheduling RSG offloading during peak recreational use periods and scheduling Pecho Coast Trail hikes around the RSG offloading and transport activities.

Replacement Steam Generator Staging and Preparation

Construction and use of the TSA facilities for RSG staging and preparation within the DCPP site is not anticipated to have significant land use, recreation, or agricultural impacts.

Original Steam Generator Removal, Transport, and Storage

Because all components of OSG removal, transport, and storage would be conducted within DCPP property, there would be no significant impacts to land use, recreation or agricultural resources.

Replacement Steam Generator Installation

The RSGs would be installed in the same location as the OSGs and would follow the same general operating procedure as the OSGs. Therefore, steam generator installation and return to service would not have significant adverse impacts on land use, recreation, or agriculture.

3.8.2 Alternatives

Replacement Steam Generator Offloading Alternative

This alternative would avoid the Proposed Project's coastal access and recreational impacts. No additional impacts to consistency with the San Luis Obispo County Local Coastal Plan or to existing land uses, such as recreational or agricultural resources, are expected.

Temporary Staging Area Location Alternatives

Similar to the Proposed Project, construction and use of alternative TSA locations for RSG staging and preparation is not anticipated to have any significant land use, recreation, or agricultural impacts.

Original Steam Generator Disposal or Storage Alternatives

Similar to the Proposed Project, because all alternative onsite OSG storage locations would be within DCPP property, there would be no significant impacts to land use, recreation, or agricultural resources. Offsite disposal would be expected to involve transport of the OSGs from the Intake Cove or Port San Luis, which would cause disruptions to established uses similar to those that would occur during RSG transport under the Proposed Project. Similar mitigation measures to RSG transport would reduce these impacts to less than significant levels if Port San Luis is used for the disposal route. These mitigation measures include not scheduling the OSG transportation during peak recreational use periods and scheduling Pecho Coast Trail hikes around the OSG transportation.

No Project Alternative

The No Project Alternative would not result in land use impacts to DCPP lands or in the larger region in the near future. Potentially, the No Project Alternative could make more land, that is currently off-limits to non-DCPP personnel, accessible to the general public. However, development scenarios foreseeable under the No Project Alternative could result in new generation or transmission facilities in San Luis Obispo County or elsewhere in northern California or the southern Central Valley. Construction of new power plants or transmission facilities may create substantial impacts to land use, recreation, or agricultural uses depending on site-specific circumstances.

3.9 Noise and Vibration

3.9.1 Proposed Project

Replacement Steam Generator Transport

Offloading of the RSGs and transport-related activities would increase noise levels temporarily for receptors near Port San Luis and the DCPP Access Gate. Relatively steady operation of the tugboats and lifting equipment would need to occur while the barge and push boats are landed at the shore, and the transport activity could occur at night, when receptors are more sensitive to noise. The noticeable noise increase above ambient levels would be a potentially significant short-term impact that could be reduced to a less than significant level with proposed mitigation. These mitigation measures include providing advance notice of RSG offloading and transport activities to the Port San Luis Harbor District and nearby residents, as well as providing a liaison to address nuisance complaints.

Replacement Steam Generator Staging and Preparation

Fabrication or construction of TSA facilities on the DCPP site would create noise from typical construction sources, such as cranes, lifts, and trucks. Staging and preparation activities would occur exclusively at DCPP, except for on-highway transport of equipment, materials, and portable facilities and commuting traffic. Because there would be no offsite staging, limited activities would occur near any noise sensitive areas. As such, no noise sensitive receptor would be exposed to a substantial noise increase during staging and preparation.

Original Steam Generator Removal, Transport, and Storage

Removal, transport, and storage of the OSGs would create noise from typical construction sources, along with transporters and a temporary concrete batch plant for construction of the OSG Storage Facility. Onsite noise from equipment, including the transporters, would be sufficiently attenuated over distance so that no noise sensitive areas would be exposed to a substantial noise increase. In addition, Proposed Project commuter, equipment, and material trips would temporarily raise noise levels along Avila Beach Drive and San Luis Bay Drive, but these noise levels would not be a significant impact.

Replacement Steam Generator Installation

There would be no new permanent noise sources associated with installation of the RSGs or the return to service, and after project completion, the noise environment around DCPP would return to existing conditions.

3.9.2 Alternatives

Replacement Steam Generator Offloading Alternative

The DCPP Intake Cove offloading alternative would involve equipment similar to that identified for the Proposed Project above, but because of the isolated location of this alternative, the potentially significant impact would be eliminated. Noise from offloading and transport equipment at the Intake Cove would be sufficiently attenuated over distance so that noise sensitive areas would not be exposed to substantial noise impacts.

Temporary Staging Area Location Alternatives

The noise impacts of developing the temporary staging facilities at each alternative TSA location would be similar. Each alternative TSA location would be similarly isolated from sensitive land uses outside of the DCPP site boundary. Noise from construction equipment used onsite for developing the temporary staging facilities would be sufficiently attenuated over distance so that no noise sensitive areas would be exposed to a substantial noise increase.

Original Steam Generator Disposal or Storage Alternatives

The noise impacts of developing the OSG Storage Facility at each alternative location would be similar. In each case, off-road construction equipment used for earthwork, material delivery, and fabrication of the facility, and the temporary concrete batch plant, would create intermittently elevated noise on the site. Each alternative for the OSG storage location would be similarly isolated from sensitive receptors and noise from equipment used onsite for developing the OSG Storage Facility would be sufficiently attenuated over distance so that no noise sensitive areas would be exposed to a substantial noise increase.

Offsite disposal of the OSGs would likely involve use of specialized transporters or heavy-duty tractor trailers on the roads accessing DCPP and regional highways. Similar to the activities related to RSG offloading and transport, noise from on-highway traffic would occur and heavy-duty equipment and tugboats may be needed to load the OSGs on to barges for transport out of the region. The noticeable noise increase above ambient levels would be a potentially significant short-term impact that could be reduced to a less than significant level by providing adequate advance notice of the transport schedule and making a public liaison available to the affected persons in the area.

No Project Alternative

Noise levels at DCPP would decrease under the No Project Alternative because routine operations of DCPP would cease. Adverse noise impacts could occur elsewhere due to replacement facilities. New generation and construction activities would need to comply with local noise ordinances and the local licensing process, which would include strategies to reduce noise impacts. Substantial noise effects would occur for any noise sensitive uses near possible combined cycle gas turbine power plants or wind farms.

3.10 Public Services and Utilities

3.10.1 Proposed Project

Replacement Steam Generator Transport

RSG transport under the Proposed Project would require use of Avila Beach Drive and the DCPP Access Road to move the RSGs from the offloading location at Port San Luis to DCPP, and there are some segments of the Access Road, particularly around corners, where the transporter could block the entire roadway. This would potentially obstruct emergency service vehicle access to other portions of the Access Road and DCPP. Mitigation is recommended to temporarily pre-position emergency responders, which would reduce this impact to a less than significant level. There is a potential for the disruption of buried utility systems that exist along the Access Road due to the transportation of heavy equipment and loads; however the potential for this impact to occur would be reduced to a less than significant level by preventing the overload of unstable ground along the transport route. The potential impact of demands on utility and public services exceeding the capabilities of existing service providers would be less than significant.

Replacement Steam Generator Staging and Preparation

This phase of the Proposed Project would have less than significant impacts of the disruption of utility and public service systems, obstruction of emergency access, and the increased demand on utility and public services due to the additional project workers would not be significant.

Original Steam Generator Removal, Transport, and Storage

Similar to the RSG transport phase of the Proposed Project, the OSG removal, transportation, and storage could restrict emergency access to portions of the DCPP site. However, by pre-positioning emergency responders during potential road blockages, this impact would be less than significant. Other less than significant impacts would include potential disruption to utility systems and demands on utility and public services.

Replacement Steam Generator Installation

Activities associated with RSG installation could restrict emergency vehicle access, but this impact would be reduced to a less than significant level by pre-positioning emergency responders in necessary locations prior to the start of installation. There would be less than significant impacts associated with demands on water supply and other utility and public service systems. It is not expected that there would be any disruptions to public service or utility systems.

3.10.2 Alternatives

Replacement Steam Generator Offloading Alternative

Offloading the RSGs at the DCPP Intake Cove would avoid the Proposed Project's potential impact of blocking emergency vehicle access along the DCPP Access Road, however there is still the possibility that this alternative could block access to some portions of the DCPP site. Any impacts resulting from utility disruptions under this alternative would be less than significant, and this alternative would have the same demands on utilities and public services as the Proposed Project. Impacts would be adverse but less than significant.

Temporary Staging Area Location Alternatives

For public services and utilities, the TSA location alternatives are negligibly different from the Proposed Project TSA location, and therefore would cause no different impacts. These alternatives would cause less than significant impacts similar to the Proposed Project.

Original Steam Generator Disposal or Storage Alternatives

Similar to the Proposed Project, the OSG Storage Facility alternatives would cause potentially significant impacts due to the obstruction of emergency vehicle access during OSG transport or construction of OSG Storage Facility. Offsite disposal of the OSGs would also involve temporary transport impacts related to route obstruction that would warrant similar mitigation measures as identified for the RSG transport phase. These measures include pre-positioning emergency responders in critical locations prior to transport of the OSGs.

No Project Alternative

Shutdown of DCPP under the No Project would decrease the use of public services and utility systems in the area, including provision of electricity, natural gas, supplemental police and fire protection, and solid waste removal.

Operation of new or replacement transmission facilities would have little demand on public services and utilities. However, new power plants could require substantial water supplies for cooling, which could require construction of local wastewater and stormwater facilities able to accommodate plant flows.

Construction and operation of alternative energy and renewable technology facilities would have similar impacts on utilities and public services as traditional power generation facilities, although the requirements for water supplies and demands placed on wastewater and stormwater facilities during operation would be reduced.

3.11 Socioeconomics

3.11.1 Proposed Project

Replacement Steam Generator Transport

The RSG transport phase would cause no population growth, no substantial increase in demand for housing and labor, and no people or businesses to be displaced. There are no significant socioeconomic impacts from the transport of the RSGs under the Proposed Project.

Replacement Steam Generator Staging and Preparation

The staging and preparation phase would require 100 to 700 additional workers. There would be no increased demand for housing or labor because the existing supplies in the area would be sufficient for the additional personnel needed for staging and preparation and the refueling outages. Additionally there would be no population growth or displacement as the staging and preparation phase is temporary and would last only for the duration of the Proposed Project, resulting in less than significant socioeconomic impacts.

Original Steam Generator Removal, Transport, and Storage

The socioeconomic impacts of the OSG removal, transport, and storage would be similar to the impacts examined for staging and preparation because the labor force for the two phases would largely be the same, though the number of workers would be greater during this phase. There would be no permanent change to the area's population, demand for labor or housing, or displacement of population and housing.

Replacement Steam Generator Installation

The labor force for steam generator installation and return to service phase of the Proposed Project would be the same total labor force identified for OSG removal, transportation, and storage because many of the activities in these two phases would be occurring at the same time. Consequently, the socioeconomic impacts from these activities would be similar to those identified for other phases.

3.11.2 Alternatives

Replacement Steam Generator Offloading Alternative

Offloading the RSGs at DCPP Intake Cove would avoid any potential impacts in the Port San Luis area associated with the Proposed Project. Impacts resulting from the temporary influx of workers for transportation of the RSGs to the TSA would remain largely the same as in the Proposed Project.

Temporary Staging Area Location Alternatives

Staging and preparation of the RSGs at the TSA location alternatives would have similar socioeconomic impacts as the Proposed Project TSA location. There would be no differences in population growth, housing and labor demand, or population or housing displacement as compared to the Proposed Project.

Original Steam Generator Disposal or Storage Alternatives

Construction and use of the OSG Storage Facility at each of the OSG Storage Facility alternative locations would have similar socioeconomic impacts as described for Proposed Project because the number of workers required for project activities and the duration of the activities would be similar.

Disposal of the OSGs offsite would require fewer employees than the Proposed Project or the OSG Storage Facility alternatives. However, temporary workers would still be required for other portions of the steam generator replacement activities, and therefore, impacts would be similar to those described above for other alternatives.

No Project Alternative

The No Project Alternative would result in the eventual loss of many jobs at DCPP because the operating life of the power plant could be shortened. However, construction of new generation or transmission facilities would require hundreds of temporary workers for each facility that would likely be drawn from

local labor forces, depending on the level of skilled labor needed. Due to the existing adequate supply of skilled labor and the temporary nature of construction activities, it is unlikely that there would be a population increase, demands for labor and permanent housing, or the displacement of people and housing. Operation of new power plants could potentially increase local population levels by a few hundred residents or less, but could also potentially provide beneficial employment opportunities and would not substantially impact housing stock or displace housing. Alternative energy technologies and system enhancements could be used to make up replacement generation. However, it is not anticipated that the construction or operation of any facilities using these technologies or any system enhancements would result in substantial long-term population growth, create a substantial demand for labor or housing, or displace people or housing.

3.12 System and Transportation Safety

3.12.1 Proposed Project

Replacement Steam Generator Transport

The RSG transport phase of the Proposed Project could result in the creation of a navigational hazard in Port San Luis requiring the temporary relocation of some moored vessels and the obstruction of emergency vehicle access due to temporary obstruction of the Access Road. These impacts could be mitigated to less than significant levels by coordinating with ~~harbor operations~~Port San Luis Harbor District and with development of a barge navigational safety plan, including pre-positioning of emergency vehicles during potential road blockages. See consistency explanations for the Port San Luis Harbor District Master Plan and Ordinances in Section D.8.2. No radiological hazard would occur because the RSGs would be newly manufactured.

Replacement Steam Generator Staging and Preparation

All staging and preparation activities, including development of TSA facilities, would occur away from areas with public access. No radiological hazard would occur because staging and preparation activities would not involve handling nuclear fuel or radioactive waste. Therefore, these activities would not pose any appreciable safety hazard to the public.

Original Steam Generator Removal, Transport, and Storage

OSG removal, transport, and storage activities would result in worker and public exposure to residual OSG radiation, and onsite storage of the OSG would introduce new hazards related to the proposed OSG Storage Facility. The potentially significant safety impacts of this phase of the Proposed Project include obstruction of emergency vehicle access during transport of the OSGs to the OSG Storage Facility or construction of the OSG Storage Facility, and the potential for seismic activity to compromise the integrity of the OSG Storage Facility. Both of these impacts could be reduced to a level that is considered less than significant with implementation of mitigation including the pre-positioning of emergency vehicles and updating the Long Term Seismic Program and incorporating it into the OSG Storage Facility design. Less than significant impacts would include potential radiation exposure due to residual contamination on the OSGs and release of radioactive material due to aircraft or terrorist attacks.

Replacement Steam Generator Installation

Replacement of the DCPP steam generators would, at a minimum, allow the facility to operate through the end of its current license periods for each unit. The NRC DCPP Unit 1 and 2 operating licenses expire in September 2021 and April 2025, respectively. Therefore, the Proposed Project would extend the oper-

ating life of the DCPP, and the environmental effects of current operations would continue as a result of CPUC approval of the project. However, the risk associated with the DCPP operating to the end of the current license periods has already been evaluated, and therefore part of the baseline.

3.12.2 Alternatives

Replacement Steam Generator Offloading Alternative

Offloading the RSGs at the DCPP Intake Cove would avoid transportation and navigational safety hazards identified in the Proposed Project. There would be no significant transportation hazards to the public associated with this alternative since the facility currently employs a one-mile exclusion zone seaward of the facility. In addition, the only offshore activities near the DCPP would be associated with PG&E or contractor activities.

Temporary Staging Area Location Alternatives

The TSA location alternatives are not appreciably different from the Proposed Project, and therefore there would be no substantially different impacts. The TSA alternatives would not pose any appreciable safety hazard to the public.

Original Steam Generator Disposal or Storage Alternatives

Similar to the TSA alternatives, the OSG Storage Facility alternatives are not appreciably different from the Proposed Project, which means that there would be no substantially different impacts. The potentially significant safety-related impacts of the proposed OSG Storage Facility would be similar for each OSG Storage Facility alternative, and mitigation for appropriate planning of emergency access and storage facility design would need to be implemented to avoid significant impacts. This includes mitigation measures similar to those for the Proposed Project such as pre-positioning of emergency vehicles and updating the Long Term Seismic Plan and incorporating it into the design of the OSG Storage Facility at each alternative location.

The Offsite OSG Disposal Alternative would transport the OSGs offsite to a licensed LLRW disposal facility that would avoid the minimal risks associated with the proposed OSG Storage Facility, which are identified as less than significant. However, the use of barges to remove the OSGs would cause similar impacts as addressed during the RSG transport phase of the Proposed Project, which could be reduced to a less than significant level by coordinating with the Port San Luis Harbor District to develop a barge navigational safety plan. Additionally, transport of the OSGs offsite would result in potential public exposure to residual radiation as the OSGs are transported from DCPP to an approved offsite disposal facility, which would result in a less than significant safety impact. Using the DCPP Intake Cove as the OSG barge loading site would avoid potential exposure to the public, if the offsite disposal alternative is chosen.

No Project Alternative

The No Project Alternative includes a range of options for replacing DCPP's generation. Replacement with natural gas-fired combined-cycle power plants would cause potential safety impacts. Depending on the exact location of a facility in relation to the public, potential safety impacts could be significant. Significant public hazards risk could result from an accidental release near a populated area during transportation, storage, and use of ammonia, a~~n~~ necessary component. In addition, there are hazards associated with the large capacity, high pressure natural gas pipelines that are needed to feed natural gas-fired combined-cycle power plants. Within the DCPP site, the No Project Alternative would have the beneficial impact of shortening the operating life, thereby reducing the overall baseline accident potential at the site.

3.13 Traffic and Circulation

3.13.1 Proposed Project

Replacement Steam Generator Transport

As part of the Proposed Project, the RSGs would be delivered to Port San Luis via barge, and then transported along approximately 1,500 feet of Avila Beach Drive and 200 feet of the Access Road to the DCPP Access Gate. The eight round trips (one round trip per each steam generator) required to move the RSGs to DCPP along Avila Beach Drive are not expected to cause significant impacts because the 1,500-foot section of Avila Beach Drive experiences low traffic volumes even during peak summer periods. Traffic impacts due to additional worker round trips would also not be significant because only 30 additional workers would be needed for this phase of the Proposed Project. RSG transport is not expected to occur during peak tourist season or a fuel outage, both of which would add additional traffic to the local road system.

Replacement Steam Generator Staging and Preparation

Staging and preparation would require an additional 100 to 700 workers and approximately ten truck deliveries per day. Therefore, additional worst case traffic is estimated to be 710 round trips per day (or 1,420 one-way daily trips). It was assumed that 10 percent of these additional trips would occur during the peak hour, adding 142 trips to the peak hour traffic on Avila Beach Drive and possibly on Highway 101, creating potentially significant impacts on both roadways. Under anticipated future conditions at the time of the Proposed Project's staging and preparation, Avila Beach Drive west of San Luis Bay Drive is expected to be operating at a low satisfactory traffic condition rating without the Proposed Project, and several segments of Highway 101 are expected to be near capacity or worse. The Proposed Project would cause adverse effects to these roads, but with mitigation measures to avoid peak hours and seasons on Avila Beach Drive, San Luis Bay Drive, and Highway 101, these impacts would be reduced to less than significant levels.

Original Steam Generator Removal, Transport, and Storage

During OSG removal, transport, and storage, worst case traffic would occur during the outage period when personnel for the Proposed Project (900 to 950 workers) would travel to DCPP at the same time as approximately ~~1,100~~ 1,285 outage personnel. Under anticipated future conditions, this would create potentially significant traffic impacts to the local road system that would be reduced to less than significant levels with mitigation measures for trip reduction strategies and avoiding peak season and hour travel on Avila Beach Drive, San Luis Bay Drive, and Highway 101.

Replacement Steam Generator Installation

During the RSG installation and return to service, the same worst case scenario number of personnel would travel to DCPP as during the OSG removal, transport, and storage phase. This would create potentially significant traffic impacts to the local road system that would be reduced to a less than significant level by avoiding peak season and hour travel on Avila Beach Drive, San Luis Bay Drive, and Highway 101 and by developing a trip reduction program. There would be no permanent increase in traffic with the return to service, and the continued operation of DCPP after steam generator replacement activities conclude would cause no new impact.

3.13.2 Alternatives

Replacement Steam Generator Offloading Alternative

There would be no adverse traffic impacts associated with barge transportation of the RSGs to the DCPP Intake Cove. Additionally, offloading the RSGs at DCPP Intake Cove would eliminate the less than significant impact of the Proposed Project resulting from transporting the steam generators along Avila Beach Drive to the DCPP Access Road.

Temporary Staging Area Location Alternatives

The TSA alternatives are in slightly different locations, but in the same general vicinity as the Proposed Project on the DCPP site. Therefore potential impacts associated with the TSA alternatives would be identical to the Proposed Project and would be reduced to less than significant levels using the same mitigation measures, which include avoiding peak hour and season travel on Avila Beach Drive, San Luis Bay Drive, and Highway 101. There would be no different traffic impacts from the TSA alternatives.

Original Steam Generator Disposal or Storage Alternatives

The OSG Storage Facility alternatives are in slightly different locations, but in the same general vicinity as the Proposed Project on the DCPP site. Therefore potential impacts associated with the OSG Storage Facility alternatives would be identical to the Proposed Project. These impacts would be reduced to a less than significant level by avoiding peak season and hour travel on Avila Beach Drive, San Luis Bay Drive, and Highway 101 and by developing a trip reduction program. There would be no different traffic impacts from the OSG Storage Facility location alternatives.

The traffic impacts associated with OSG Offsite Disposal Alternative would be similar to those for the RSG transport phase. The overall impact of the OSG Offsite Disposal Alternative would be adverse but less than significant.

No Project Alternative

A beneficial impact to traffic levels on local roads would occur with the shutdown of DCPP. However, construction of new replacement generation and transmission facilities is likely to have significant traffic and circulation impacts elsewhere. Construction of the new facilities would occur over several years and would involve large number of construction personnel that would likely affect the road system in the area of the new facilities. System enhancement options that could occur under the No Project Alternative would not have substantial traffic and circulation impacts because system enhancement would involve little, if any, new construction.

3.14 Visual Resources

3.14.1 Proposed Project

Replacement Steam Generator Transport

Under the Proposed Project, the RSGs, barges, transporters, and other equipment would be highly visible within the San Luis Obispo Bay and Port San Luis viewshed during offloading and transport to the DCPP Access Gate. At the DCPP Access Gate, the RSGs and transporters would become hidden from public view by intervening hilly terrain as they move towards DCPP. Due to potential high viewer sensitivity

and strong project contrast, RSG transport could potentially result in adverse visual impacts, warranting mitigation to avoid the peak tourist and recreational season and provide advance notice to nearby residents, Port San Luis Harbor District, and the CPUC. Potential impacts include short-term visibility of RSGs and transporters to viewers at Harford Pier and San Luis Obispo Bay viewpoints. The potential occurrence of nighttime work, which would expose the area to light and glare, would also contribute to this visual impact. However, because of the limited duration of viewer exposure, the likelihood that this exposure would be a one-time experience, and that the Proposed Project is planned occur after the peak tourist season when fewer visitors are in the area, impacts would be less than significant.

Replacement Steam Generator Staging and Preparation

Impacts caused by the development of the TSA to viewers at DCPP and to offshore viewers at the minimum allowable distance of 2,000 yards would be less than significant due to the low/moderate visual quality of the industrial setting at DCPP, the low level of viewer concern among DCPP workers, and the difficulty in distinguishing the TSA-related activities amongst the existing industrial character of DCPP to recreational viewers offshore.

Original Steam Generator Removal, Transport, and Storage

Similar to RSG staging and preparation, the site of the proposed OSG Storage Facility would create less than significant impacts to DCPP workers due to its location being outside the workers' normal viewing area and the low level of viewer concern among DCPP workers. Additionally, visual impacts would be less than significant for offshore viewers because the OSG Storage Facility would be less visible from offshore vantage points than the closer and more prominent main power plant structures.

Replacement Steam Generator Installation

The impacts of installation and return to service would be less than significant due to the moderate level of visual contrast of the RSGs and transporters to the industrial character of the DCPP site and low visual sensitivity of DCPP workers.

3.14.2 Alternatives

Replacement Steam Generator Offloading Alternative

Delivering the RSGs directly to the DCPP Intake Cove would avoid exposure to public viewpoints in San Luis Obispo Bay and Port San Luis that are present in the Proposed Project. This would avoid a potentially significant impact of the Proposed Project. Because of the absence of sensitive public viewpoints under this alternative, no adverse impacts are anticipated.

Temporary Staging Area Location Alternatives

The TSA alternatives would involve similar activities and infrastructure, and would be located in the same general area as the TSA facilities under the Proposed Project. Therefore the TSA location alternatives constitute negligible differences, and there would be no different effects than the less than significant impacts that would occur with the Proposed Project.

Original Steam Generator Disposal or Storage Alternatives

Similar to the TSA alternatives, the OSG Storage Facility location alternatives would cause negligible visual differences when compared to the Proposed Project. There would be no new visual impacts, and the existing impacts are less than significant due to the already compromised visual quality of the power

plant setting, and the low level of viewer concern for workers at DCPP. Impacts to offshore viewers would also be negligible and less than significant.

The OSG Offsite Disposal Alternative could cause potentially adverse visual impacts, since it would entail transporting the OSGs outside of the DCPP boundary. Although the precise appearance and configuration of transporters for this alternative are not known, the containers used to transport the OSGs would represent a large and visually prominent object or objects with an industrial character and a potential to cause high levels of contrast to sensitive viewers. However, regardless of the mode of transport, the OSGs most likely would resemble other transport containers and would not be expected to represent an unusual or disruptive visual event to the public. In addition, such visual exposure would be temporary and short-term. Thus, the OSG Offsite Disposal Alternative would be unlikely to result in adverse visual impacts.

No Project Alternative

Under the No Project Alternative, the facility would be decommissioned, although the specifics of this process are unknown at this time, the infrastructure would most likely be dismantled and removed from the site, and therefore would no longer be seen from an ocean vantage point. Other issues associated with DCPP shutdown would be the need for replacement generation. Replacement natural gas-fired power plants would cause visual impacts similar to other large-scale industrial facilities, and depending upon the setting in which they occur, they may represent potentially significant impacts. However in many cases, mitigation measures including landscape screening, siting modifications to reduce visual exposure of sensitive viewers, and painting of the power plant could reduce such impacts to less than significant levels. Impacts could also be created from other associated factors such as exhaust plumes or new transmission infrastructure. Replacement of the DCPP capacity with alternative technologies would most likely require a combination of technologies at various locations, each with different impacts and available mitigation measures. In general, alternative generation technologies can transform landscapes into vast areas of monotonous, industrial character, potentially causing significant adverse visual impacts. With appropriate siting, impacts of smaller individual facilities could presumably be reduced.

ES.4 Summary Comparison of the Proposed Project and Alternatives

This section summarizes and compares ~~the environmental advantages and disadvantages of~~ the Proposed Project and the alternatives evaluated in this EIR. Section 4.1 describes the methodology used for comparing alternatives. Section 4.2 defines the Environmentally Superior Alternative, based on comparison of each alternative with the Proposed Project. Section 4.3 presents a comparison of the No Project Alternative with the alternative that is determined in Section 4.2 to be environmentally superior.

4.1 Comparison Methodology

CEQA does not provide specific direction regarding the methodology of alternatives comparison. Each project must be evaluated for the issues and impacts that are most important; this varies depending on the project type and the environmental setting. Issue areas that are generally given more weight in comparing alternatives are those with long-term environmental impacts (e.g., permanent loss of land, habitat, or scenic resources or permanent loss of use of recreational facilities). Impacts associated with construction (temporary or short-term), or those that are easily mitigable to less than significant levels, are generally given less weight.

This comparison is designed to satisfy the requirements of *CEQA Guidelines* Section 15126.6(d), Evaluation of Alternatives, which states that:

> *The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.*

If the environmentally superior alternative is the No Project Alternative, CEQA requires identification of an environmentally superior alternative among the other alternatives [*CEQA Guidelines* Section 15126.6(e)(2)].

The following methodology was used to compare alternatives in this EIR:

- **Step 1: Identification of Alternatives.** An alternatives screening process (Section C in the ~~Draft~~ EIR) was used to evaluate various alternatives to the Proposed Project. The screening process was used to analyze all feasible options. PG&E proposed many options to aspects of the Proposed Project and, at the request of the CPUC, identified one preferred option that could serve as the Proposed Project. All of PG&E's proposed options were then evaluated as alternatives. In addition to PG&E's proposed options, the EIR preparation team identified one offsite disposal alternative. A No Project Alternative was also identified and evaluated.
- **Step 2: Determination of Environmental Impacts.** The environmental impacts of the Proposed Project and the various alternatives were described (in Sections D.2 through D.14 in the ~~Draft~~ EIR), including the potential impacts of the No Project Alternative which could lead to construction and operation of a range of replacement facilities. The impacts have been summarized for each alternative in tables below to facilitate comparison of the Proposed Project with alternatives.
- **Step 3: Comparison of Proposed Project with Alternatives.** The environmental impacts of the Proposed Project were compared to those of each alternative to determine the environmentally superior alternative. The comparison focuses on the most important issue areas (e.g., safety, land use and recreation, biological resources, and geology). The environmentally superior alternative was then compared to the No Project Alternative.

Determining an environmentally superior alternative is difficult because of the many factors that must be balanced. The impact summaries in the detailed comparison tables of Section 4.2 provide information on how the issue areas were balanced. Although this EIR identifies one environmentally superior alternative, it is possible that the ultimate decision-makers could balance the importance of each issue area differently and reach a different conclusion.

4.2 Environmentally Superior Alternative

This EIR presents alternatives to the following Proposed Project components: (1) transportation of the replacement steam generators; (2) RSG staging and preparation; and (3) original steam generator removal, transport, and storage. See Section 1.1 and Figure ES-2 for a detailed description and map of the Proposed Project. There are various alternatives to the components of the Proposed Project, as well as the No Project Alternative. There is one alternative to the RSG transport phase; three alternatives to the RSG staging and preparation phase; and five alternatives to the OSG removal and storage phase, four of

which consist of different locations for the OSG Storage Facility and one that would transport the OSGs offsite for disposal. See Section C of the ~~Draft~~ EIR for more information on the Proposed Project alternatives.

The following is a discussion ~~of the advantages and disadvantages of each alternative,~~that provides a meaningful evaluation, analysis, and comparison of each alternative with the Proposed Project, and a determination of whether the Proposed Project or an alternative is considered to be environmentally superior within each component of the project. Each of the thirteen issue areas was considered during analysis of the alternatives.

4.2.1 Replacement Steam Generator Offloading Alternative

The proposed RSG offloading location would be at Port San Luis with the associated transport route to the temporary staging area at DCPP along the seven-mile DCPP Access Road. The RSG Offloading Alternative is at the DCPP Intake Cove, which would allow the steam generators to be delivered directly to the DCPP facility and then moved a short distance on existing facility roads to the TSA (see Figure ES-4).

The RSG Offloading Alternative would eliminate potential land use and recreation, system and transportation safety, and visual resources (Class II) impacts associated with the Proposed Project. Offloading the RSGs at the Intake Cove would avoid conflicts with land- and water-based traffic near Port San Luis associated with commercial and recreational vessel moorings, local restaurant and shop traffic near Harford Pier, and DCPP employee traffic along the Access Road. The Intake Cove would also reduce the visual impacts from nighttime lighting in Port San Luis during the RSG offloading and transporting activities. The navigational and transportation safety impacts to the general public would be removed because of the isolated location of the DCPP Intake Cove. The Intake Cove Alternative would also eliminate potential land use conflicts with the San Luis Obispo County local coastal policies that dictate coastal and recreational resource access. In addition, the Intake Cove Alternative would not impede emergency vehicle access to the DCPP facility because the RSG transport equipment would not utilize the DCPP Access Road or pass through the Access Gate.

Air quality and noise impacts could be reduced by avoiding offloading and transport activities in the vicinity of the publicly accessible Port San Luis and the community of Avila Beach. Emissions of air pollutants from offloading and transport activities under the Intake Cove Alternative would be less than the Proposed Project because of the shorter distance between the offloading location and the TSA. With regard to noise, the Intake Cove alternative would impact fewer individuals during transport activities because the Intake Cove is isolated from the general public.

Table ES-2 compares the impacts that would occur with the Proposed Project and the RSG offloading alternative.

Table ES-2. Proposed Project vs. Replacement Steam Generator Offloading Alternative

Issue Area	Proposed Project (Port San Luis)	RSG Offloading Alternative (Intake Cove)
Air Quality	Greater exposure to public and residences and longer transport route	**Preferred** because of reduced level of emissions due to shorter distance. Limited exposure to the public
Biological Resources	Slightly more severe impacts due to longer transport route and presence of native vegetation along route	**Slightly Preferred** because of slight reduction in impacts due to shorter transport route with limited native vegetation in the area
Cultural Resources	No Preference	No Preference
Geology, Soils and Paleontology	Greater likelihood of instabilities and exceeding weight capacity along transport route	**Preferred** because of reduced likelihood of encountering unstable locations along transport route
Hazardous Materials	No Preference	No Preference
Hydrology and Water Quality	No Preference	No Preference
Land Use and Recreation	Requires limiting access to Port San Luis public facilities and recreational resources	**Preferred** because of elimination of land use and recreation access restriction impacts
Noise and Vibration	Closer proximity to general public and community creating greater exposure of sensitive receptors to noise impacts	**Preferred** because of reduced exposure of sensitive receptors and general public to noise impacts
Public Services and Utilities	Greater likelihood of impeding emergency vehicle access to DCPP. RSG would need to be transported along the DCPP Access Road	**Preferred** because of reduced impediments to emergency vehicle access to DCPP
Socioeconomics	Potential temporary displacement or disruption of Port San Luis businesses or fishermen	**Slightly Preferred** because of avoidance of any potential displacement or disruption impacts to Port San Luis businesses or fishermen
System and Transportation Safety	Navigational hazard in Port San Luis and impediment to emergency vehicles during transport. RSGS would need to be transported along the DCPP Access Road	**Preferred** because of elimination of navigational hazards and reduced obstruction to emergency vehicles
Traffic and Circulation	Disruption of traffic flow and restricted access to public roadway and parking areas	**Preferred** because of elimination of traffic impacts due to offloading activities. Reduction in traffic impacts along DCPP Access Road
Visual Resources	Short-term visual impacts to viewers at Port San Luis	**Preferred** because of elimination of visual impacts to general public from offloading activities

4.2.2 Temporary Staging Area Alternatives

The Proposed Project and the three TSA alternatives would all be located in the southwestern portion of the DCPP facility site (see Figure C-1). The TSA location for the Proposed Project would be in Parking Lot 1. Each TSA alternative would be located between approximately 100 and 1,500 feet northwest of the Proposed Project in Parking Lots 7 and 8, or within an existing warehouse north of Parking Lot 1. Due to the close proximity of the Proposed Project and the TSA alternatives, most impacts would be similar for all locations. There would be a slight preference for TSA Alternatives B and C over the Proposed Project because some native vegetation exists adjacent to Parking Lot 1, outside of the proposed TSA area where construction may take place for the Proposed Project. TSA Alternative B would also be slightly preferred over the Proposed Project and the other TSA alternatives because it would be located the furthest from Patton Cove, which has experienced previous landslide issues.

Table ES-3 compares the impacts that would occur with the Proposed Project and each of the TSA alternatives.

Table ES-3. Proposed Project vs. Temporary Staging Area Alternatives

Issue Area	Proposed Project	TSA Alternative A	TSA Alternative B	TSA Alternative C
Air Quality	No Preference	No Preference	No Preference	No Preference
Biological Resources	Construction activities may disturb adjacent native vegetation	**Slightly Preferred** because of slight reduction of impacts by locating alternative further from native vegetation	**Slightly Preferred** because of slight reduction of impacts by locating alternative further from native vegetation	Impacts would be similar to Proposed Project
Cultural Resources	No Preference	No Preference	No Preference	No Preference
Geology, Soils and Paleontology	Closest to potential landslide area at Patton Cove	Close to potential landslide area at Patton Cove	**Slightly Preferred** because of greater distance from potential landslide area at Patton Cove	Close to potential landslide area at Patton Cove
Hazardous Materials	No Preference	No Preference	No Preference	No Preference
Hydrology and Water Quality	No Preference	No Preference	No Preference	No Preference
Land Use and Recreation	No Preference	No Preference	No Preference	No Preference
Noise and Vibration	No Preference	No Preference	No Preference	No Preference
Public Services and Utilities	No Preference	No Preference	No Preference	No Preference
Socioeconomics	No Preference	No Preference	No Preference	No Preference
System and Transportation Safety	No Preference	No Preference	No Preference	No Preference
Traffic and Circulation	No Preference	No Preference	No Preference	No Preference
Visual Resources	No Preference	No Preference	No Preference	No Preference

4.2.3 Original Steam Generator Storage Facility Location Alternatives

The Proposed Project and all the OSG Storage Facility location alternatives would be located in the same general area in the northeastern section of the DCPP facility site near the 500 kV switchyard (see Figure C-1). The Proposed Project would place the OSG Storage Facility northeast of the intersection of Oak Tree Lane and Reservoir Road adjacent to the 500 kV switchyard (see Figure ES-2). OSG Storage Facility Location Alternative A would be located in the northeast corner of the switchyard, and the other three alternatives would be located east of the Proposed Project. The Proposed Project and the OSG Storage Facility Location Alternatives would all be located within approximately 600 to 700 feet of one another.

The Proposed Project and the OSG Storage Facility location alternatives would be very similar to one another and therefore would have many of the same impacts. Hydrologic and water quality impacts such as contamination of stormwater runoff due to sedimentation or leaks from construction activities, or water quality degradation due to potential damage to the OSG Storage Facility from Diablo Creek flow overtopping its banks could be reduced with Alternatives C and D. Table ES-4 compares the Proposed Project to each OSG Storage Facility location alternative.

Table ES-4. Proposed Project vs. OSG Storage Facility Location Alternatives

Issue Area	Proposed Project	OSG Storage Facility Location Alternative A	OSG Storage Facility Location Alternative B	OSG Storage Facility Location Alternative C	OSG Storage Facility Location Alternative D
Air Quality	No Preference	No Preference	No Preference	No Preference	No Preference
Biological Resources	**Slightly Preferred** because of greater distance from Diablo Creek and native vegetation	Greater likelihood of impacts due to proximity to Diablo Creek	**Slightly Preferred** because of greater distance from native vegetation	Greater likelihood of impacts due to proximity to native vegetation	Greater likelihood of impacts due to proximity to native vegetation
Cultural Resources	No Preference	No Preference	No Preference	No Preference	No Preference
Geology, Soils and Paleontology	Greater likelihood of being affected by potential bluff instabilities over Diablo Creek	Greater likelihood of being affected by potential bluff instabilities over Diablo Creek	Greater likelihood of being affected by potential bluff instabilities over Diablo Creek	**Preferred** because of reduced likelihood of effects from bluff instabilities	**Preferred** because of reduced likelihood of effects from bluff instabilities
Hazardous Materials	No Preference	No Preference	No Preference	No Preference	No Preference
Hydrology and Water Quality	Outside main flow path, but more likely to be affected by overflow Diablo Creek	Within main flow path of Diablo Creek, greater likelihood of effects from Creek overflow	Outside main flow path, but more likely to be affected by overflow Diablo Creek	**Preferred** because of reduced likelihood of effects from Diablo Creek overflow	**Preferred** because of reduced likelihood of effects from Diablo Creek overflow
Land Use and Recreation	No Preference	No Preference	No Preference	No Preference	No Preference
Noise and Vibration	No Preference	No Preference	No Preference	No Preference	No Preference
Public Services and Utilities	No Preference	No Preference	No Preference	No Preference	No Preference
Socioeconomics	No Preference	No Preference	No Preference	No Preference	No Preference
System and Transportation Safety	No Preference	No Preference	No Preference	No Preference	No Preference
Traffic and Circulation	No Preference	No Preference	No Preference	No Preference	No Preference
Visual Resources	No Preference	No Preference	No Preference	No Preference	No Preference

4.2.4 Original Steam Generator Offsite Disposal Alternative

The alternative to storing the OSGs onsite at an OSG Storage Facility would be to transport the OSGs offsite for permanent disposal at a facility that accepts low-level radioactive waste. This approach would be similar to that proposed by Southern California Edison (SCE) for the Steam Generator Replacement Project at San Onofre Nuclear Generating Station (SONGS). Under this alternative, the most logical approach would be to transport the OSGs by barge from either the Intake Cove or Port San Luis to the disposal facility, or to a transfer point where they would be shifted to a different mode of transportation such as railway for ultimate delivery to the facility. Currently, disposal facilities for this type of waste exist in Washington, Utah, and South Carolina.

Detailed information on the potential impacts and their severity is not currently available due to the lack of specific details for the offsite disposal method. This alternative would eliminate or reduce potential construction impacts of the Proposed Project because construction of the OSG Storage Facility would not occur. However, offsite disposal would involve similar or possibly more severe impacts at the disposal site.

There would also be impacts due to the transportation of the low-level radioactive OSGs offsite, which could bring safety hazards closer to the general public. In addition, this alternative may create new impacts at the selected disposal facility.

The primary area of concern for offsite disposal would be system and transportation safety. Offsite transport of the OSGs would increase the navigational hazard caused by transport barges and would introduce a new, but mitigable, impact of potential residual contamination radiation exposure to the public near the disposal transport route. The NRC and federal Department of Transportation (DOT) regulate the use and transport of nuclear materials and protection of public safety, and would therefore regulate the transport of OSGs offsite. Generally, Table ES-5 compares onsite OSG storage to the OSG Offsite Disposal Alternative.

Table ES-5. Onsite OSG Storage Facility Locations vs. OSG Offsite Disposal Alternative

Issue Area	Onsite Storage	Disposal of OSG Offsite Disposal Alternative
Air Quality	**Slightly Preferred** over the OSG Offsite Disposal Alternative. Short-term air quality from construction, no potential impacts to general public	Greater likelihood of impacts to sensitive receptors from transport of the OSGs offsite
Biological Resources	**Slightly Preferred (Proposed Project or Alternative B)** potential to impact local native vegetation, however, no potential marine resource issues would be impacted	Less impacts to native vegetation at DCPP facility; potential impacts at disposal facility and greater potential marine impacts with barge transport of the OSGs
Cultural Resources	No Preference	No Preference
Geology, Soils, and Paleontology	Potential bluff instabilities associated with Proposed Project and alternatives	**Slightly Preferred** because less potential impacts at DCPP facility; potential impacts at disposal facility
Hazardous Materials	**Preferred** over the OSG Offsite Disposal Alternative. Less likely of a hazardous material spill during transportation – shorter distance to OSG Storage Facility	More potential impacts due to long transport distance and exposure to general public.
Hydrology and Water Quality	**Slightly Preferred (Alternatives C or D)** because of reduced likelihood of effects from Diablo Creek overflow	Potential impacts from an accident during transport of the OSGs
Land Use and Recreation	**Preferred** over the OSG Offsite Disposal Alternative	Requires limiting public access to public facilities (e.g., Port San Luis) and recreational resources during transport of OSGs
Noise and Vibration	**Preferred** over the OSG Offsite Disposal Alternative Short-term noise from construction, no potential impacts to general public	Greater likelihood of impacts to sensitive receptors during transport of OSGs
Public Services and Utilities	**Preferred** over the OSG Offsite Disposal Alternative. Less likely to impact services and utilities	Greater likelihood of impeding emergency vehicle access to DCPP, particularly if OSGs are removed via the Access Road
Socioeconomics	No Preference	No Preference
System and Transportation Safety	**Preferred** over the OSG Offsite Disposal Alternative. Less likely for exposure to general public	More potential impacts due to long transport distance and exposure to general public
Traffic and Circulation	**Preferred** over the OSG Offsite Disposal Alternative No traffic issues associated with the OSG Storage Facility	Greater likelihood of impacts in public roadways and boating areas during transport of OSG
Visual Resources	**Preferred** over the OSG Offsite Disposal Alternative. Limited visual resource issues associated with OSG Storage Facility	Greater likelihood of impacts to sensitive viewers during loading activities

4.2.5 Definition of Environmentally Superior Alternative

Table ES-1 above shows the environmentally superior alternatives for the DCPP Steam Generator Replacement Project. The only clearly superior alternative would be the Intake Cove Offloading Alternative. Except for a few minor beneficial differences, there would be no preferred alternative for the other phases of the project. The conclusions for each phase of the project are summarized below.

Conclusion for Replacement Steam Generator Offloading Alternatives

The RSG Offloading Alternative at the Intake Cove is the preferred alternative because it would substantially reduce various impacts to land use and recreation, system and transportation safety, and visual resources. Because the RSGs would be offloaded directly at the DCPP site, use of Port San Luis and the DCPP Access Road would be avoided thereby eliminating a number of potentially significant (Class II) impacts in these areas. Additionally, the Intake Cove alternative may reduce the severity of impacts to air quality, noise, public services, system and transportation safety, traffic and circulation, and biological resources.

This comparative analysis balances the issues by placing a heavier weight on impacts related to the health, safety, traffic and circulation, and convenience of the general public. This weighting is used based on the comments received from the public during the scoping process, which focused on these issues.

Conclusion for Temporary Staging Area Alternatives

There is no overall preferred alternative for the TSA location. The Proposed Project and alternatives would all cause similar impacts with equal classifications because of the close proximity of all locations. However in some issue areas there were minor differences between the alternatives which would make one or two alternatives preferable over the others. TSA Alternatives A and B would reduce the minor potential impacts of disturbing adjacent native vegetation by locating the site away from areas with native vegetation. TSA Alternative B would also be located furthest from the Patton Cove landslide area, a geological hazard at the DCPP facility.

This comparative analysis provided above does not designate an environmentally superior alternative, although it does show that Alternative B could reduce some minor environmental and safety concerns.

Conclusion for Original Steam Generator Storage Facility Location Alternatives

There is no preferred alternative for the OSG Storage Facility, however onsite storage of the OSGs is preferred over offsite disposal. The Proposed Project and the OSG Storage Facility alternatives would all cause similar impacts with equal classifications because of the close proximity of all the locations. However, in some issue areas there were minor differences between these alternatives, which would make one or two alternatives preferable over the others. Alternative B would reduce the minor potential impacts of disturbing adjacent native vegetation by locating the site away from areas with native vegetation. However, Alternative B would be located closest to Diablo Creek resulting in greater hydrological impacts. Alternatives C and D would reduce potential hydrological and water quality, and geological concerns by locating the OSG Storage Facility furthest from Diablo Creek.

This comparative analysis provided above does not designate an environmentally superior alternative, although it does show that each OSG Storage Facility location alternative is preferred over the OSG Offsite Disposal Alternative. Among the potential OSG Storage Facility location alternatives, Alternatives C and D may reduce some environmental and safety concerns.

4.3 No Project Alternative vs. the Environmentally Superior Alternative

Summary of the No Project Alternative and Its Impacts. The No Project Alternative is described in Section C.6 of the ~~Draft~~ EIR. It would include the continued use of the DCPP OSGs through 2013 or 2014 at which time the OSGs are anticipated to reach the end of their useful lives, and approximately 2,200 MW of base-load system generation capacity for PG&E customers would need to be replaced. Although replacement facilities would be needed, early shutdown of DCPP would result in some beneficial safety and environmental impacts in the vicinity of DCPP. The No Project Alternative consists of the following options:

- **Replacement Generation Facilities.** In the future, environmental and safety concerns will most likely preclude the construction of new nuclear, hydroelectric, and coal- and oil-fired power plants as replacement generation, therefore PG&E has stated that it would need to construct 4 or 5 combined cycle gas turbine power plants in northern California and southern Central Valley. At this time, the details of such projects are unknown, and therefore it would be difficult to determine any definite impacts. However, it is known approximately how much land would be required to construct a combined cycle power plant, how much water would be needed to provide sufficient cooling, and how much natural gas would be used to operate the new facilities. This information could be used to determine potential impacts to areas such as biological resources, hydrology and water quality, and air quality.
- **Replacement Transmission Facilities.** New transmission facilities would need to be built for any new generation capacity constructed, but new transmission facilities could also be used as a substitute for some in-State generation if access to generation in the Pacific Northwest and the Southwest is improved. Currently the details of potential transmission projects are not known; however, in general these projects produce short-term impacts during construction and long-term impacts during operation of the transmission line. Short-term impacts include air and noise emissions, loss of biological habitat, traffic disruption, and potential disruption of utility service. Long-term impacts include visibility of transmission infrastructure, corona noise, permanent loss of biological habitat or cultural resources, and potential changes in electric and magnetic fields.
- **Alternative Energy Technologies.** Options for replacement generation include principal renewable and other alternative energy technologies such as solar thermal, photovoltaics, wind, geothermal, hydropower, fuel cells, and biomass. The main benefit of these technologies is that they do not rely on fossil fuel, consume little water, and generate either zero or reduced levels of air pollutants and hazardous wastes. However these technologies do create some environmental impacts such as permanent disturbance or destruction of habitat, visual changes, generation of hazardous waste, noise production, endangerment of wildlife and fish, poor water quality due sedimentation and turbidity, change of land uses, and some air emissions.
- **System Enhancement Options.** This option would not require the construction of new major generation or transmission facilities, but rather reduce the need for additional base-load energy. This would be accomplished through energy conservation or demand-side management, and distributed generation or generation through facilities providing less than 50 MW in capacity. While this option would not provide for full replacement of the energy lost due to shutdown of DCPP, it would allow for offset of a small percentage of the lost energy supply. This option is the most uncertain and unreliable in terms of generation capacity or savings, opportunity for growth, and specific potential uses.

Comparison of Environmentally Superior Alternative with No Project Alternative. The Environmentally Superior Alternative as defined in Section ES.2 would consist of replacement steam generator delivery and offloading to the Intake Cove, any of the TSA locations, and any of the onsite OSG Storage Facility locations as there are no substantial differences among the TSA locations or the onsite OSG Storage

Facility locations. As noted above, OSG Storage Facility Location Alternatives C and D would have minor benefits as compared to the Proposed Project with regard to hydrology and water quality, while TSA Alternative B could reduce some minor environmental and safety concerns. Offloading the steam generators at the Intake Cove would eliminate some short-term project-related impacts to land use and recreation, public services and utilities, system transportation safety, traffic and circulation, and visual resources. The Environmentally Superior Alternative would be located entirely within DCPP property, which is isolated from the general public due to regulation, distance, and geography.

In comparison, long-term impacts for many environmental issue areas could occur under the No Project Alternative. Construction of new power plants, including alternative energy technologies, under the No Project Alternative would likely result in some level of short-term (construction) and long-term (operation) regional impacts to air quality, biological resources, water quality, noise, hazardous waste, public health, and visual resources. Overall, the Environmentally Superior Alternative is preferred over the No Project Alternative.

ES.5 Impact Summary Tables

Tables ES-6 and ES-7 on the following pages summarize all identified impacts of the Proposed Project (Table ES-6) and the alternatives (Table ES-7). For each impact, the following information is presented: impact number and title, impact class (Class I, II, III, or IV), applicable mitigation measure(s), and residual impact (whether significant or less than significant).

Table ES-6. Summary of Impacts and Mitigation for the Proposed Project

Impact	Impact Class[a]	Project Component[b]	Mitigation Measure(s)	Residual Impact[c]
Air Quality				
A-1: Replacement activities would cause emissions from transport and construction equipment	Class II	Transport; Staging & Prep; OSG Storage; Installation	**A-1a:** Develop and implement a trip reduction plan **A-1b:** Develop and implement a diesel combustion emission control plan **A-1c:** Offset tugboat NOx emissions with an offsite mitigation program (Transport) **A-1d:** Conduct an acute health hazard screening analysis for the toxic diesel component acrolein (Transport)	LTS, less than significant
A-2: Construction of the Original Steam Generator Storage Facility would cause emissions from portable concrete batch sources	Class II	OSG Storage	**A-2a:** Use registered portable equipment	LTS
Biological Resources				
B-1: Transport of the RSGs would temporarily disturb nocturnal wildlife as a result of increased noise and night lighting along the road	Class III	Transport	None	LTS
B-2: Surface water runoff associated with new construction required to reinforce portions of the RSG transport roadway would increase erosion and sediments affecting aquatic species	Class III	Transport	None	LTS
B-3: Vessel traffic would increase the likelihood of collisions with protected marine mammals	Class II	Transport	**B-3a:** Marine Mammal Observer Training	LTS
B-4: Offloading activities would disturb nearshore marine habitats	Class III	Transport	None	LTS
B-5: Vehicular travel into undisturbed areas could directly impact native vegetation	Class II	Staging & Prep	**B-5a:** Delineation of Disturbance Limits	LTS
B-6: Deposition of excavated materials could result in indirect impacts to vegetation and wildlife habitat	Class II	OSG Storage	**B-6a:** Revegetation of Soil Disposal Areas	LTS
Cultural Resources				
C-1: Ground-disturbing activity may damage or destroy previously undetected cultural resources	Class II	Staging & Prep	**C-1a:** Cultural Resources Treatment Plan (CRTP) **C-1b:** Construction monitoring	LTS

Table ES-6. Summary of Impacts and Mitigation for the Proposed Project

Impact	Impact Class[a]	Project Component[b]	Mitigation Measure(s)	Residual Impact[c]
Geology, Soils, and Paleontology				
G-1: Extremely heavy loads could mobilize unstable ground along transport route	Class II	Transport; OSG Storage	**G-1a:** Prevent overloading of unstable ground along transport route	LTS
G-2: Temporary effects of earthquake shaking could endanger worker safety	Class II	Transport; Staging & Prep; OSG Storage; Installation	**G-2a:** Protect workers from temporary effects of earthquake shaking **G-2b:** Prevent casualties caused by falling rocks Mitigation Measure **G-1a** (above) (Transport)	LTS
G-3: Ground shaking could compromise the integrity of the OSG Storage Facility	Class II	OSG Storage	**G-3a:** Long-Term Seismic Program Update	LTS
G-4: Slope instability could affect design, construction, and functioning of the OSG Storage Facility	Class II	OSG Storage	**G-4a:** Evaluate slop stability in the vicinity of the OSG Storage Facility site	LTS
Hazardous Materials				
H-1: Heavy equipment fuel, oil, or hydraulic line leak or rupture could cause hazardous materials release	Class II	Transport; Staging & Prep; OSG Storage; Installation	**H-1a:** Implement DCPP spill response procedures **H-1b:** Conduct routine inspections and maintenance of transporter	LTS
H-2: Heavy equipment maintenance could cause hazardous materials release	Class II	Transport; Staging & Prep; OSG Storage; Installation	**H-2a:** Properly handle maintenance waste	LTS
H-3: Previously unknown contaminated soil/groundwater could be encountered during construction	Class II	Staging & Prep; OSG Storage	**H-3a:** Stop work immediately and notify appropriate project personnel and regulators	LTS
H-4: Previously unknown asbestos or lead could be encountered	Class III	OSG Storage	None	LTS
Hydrology and Water Quality				
W-1: Offloading the generators at Port San Luis could disturb marine sediments or accidentally introduce contaminants to the ocean water	Class II	Transport	Mitigation Measures **H-1a**, **H-1b**, and **H-2a** (above)	LTS
W-2: Construction and use of staging and preparation areas could result in disturbance of sediment or spill of materials that would contaminate stormwater	Class II	Staging & Prep	**W-2a:** A SWPPP shall be prepared for construction activities Mitigation Measures **H-1a**, and **H-2a** (above)	LTS

Table ES-6. Summary of Impacts and Mitigation for the Proposed Project

Impact	Impact Class[a]	Project Component[b]	Mitigation Measure(s)	Residual Impact[c]
W-3: Fuel or other contaminants associated with heavy equipment used during OSG removal, transport, and storage could spill and contaminate surface waters	Class II	OSG Storage	Mitigation Measures **H-1a**, and **H-2a** (above)	LTS
W-4: Fuel or other contaminants associated with heavy equipment used during RSG installation could spill and contaminate surface waters	Class II	Installation	Mitigation Measures **H-1a**, and **H-2a** (above)	LTS
Land Use, Recreation, and Agriculture				
L-1: Transport would disrupt an established land use	Class III	Transport	None	LTS
L-2: Transport would disrupt recreational activities	Class II	Transport	**L-2a:** Avoid peak recreational usage **L-2b:** Schedule Pecho Coast Trail hikes around RSG transport Mitigation Measure **N-1a** (below)	LTS
Noise and Vibration				
N-1: Offloading would temporarily increase local noise levels near sensitive receptors	Class II (Transport); Class III	Transport; Staging & Prep; OSG Storage; Installation	**N-1a:** Provide advance notice of offloading and transport (Transport) **N-1b:** Provide liaison for nuisance complaints (Transport)	LTS
N-2: Increased traffic during the steam generator replacement project would expose sensitive receptors along Avila Beach Drive and San Luis Bay Drive to increased noise	Class III	OSG Storage	None	LTS
Public Services and Utilities				
U-1: Project would disrupt utility systems	Class II (Transport); Class III (Staging & Prep, OSG Storage)	Transport; Staging & Prep; OSG Storage	Mitigation Measure **G-1a** (above) (Transport)	LTS

Table ES-6. Summary of Impacts and Mitigation for the Proposed Project

Impact	Impact Class[a]	Project Component[b]	Mitigation Measure(s)	Residual Impact[c]
U-2: Project would impede emergency access	Class II (Transport~~, OSG Storage, Installation~~); Class III (Staging & Prep, OSG Storage, Installation)	Transport; Staging & Prep; OSG Storage; Installation	**U-2a:** Pre-position emergency responders during road blockages (Transport~~, OSG Storage, Installation~~)	LTS
U-3: Project's utility and public service demands would exceed the capabilities of existing service providers	Class III	Transport; Staging & Prep; OSG Storage; Installation	None	LTS
Socioeconomics				
None	NA	NA	NA	LTS
System and Transportation Safety				
S-1: RSG barges would create a navigational hazard in Port San Luis	Class II	Transport	**S-1a:** Barge Navigational Safety Plan	LTS
S-2: RSG transport between Port San Luis and the DCPP or OSG transport could impede emergency response vehicles	Class II	Transport; OSG Storage	Mitigation Measure **U-2a** (above)	LTS
S-3: Residual contamination would be present on the OSGs with the potential for radiation exposure during removal and transport	Class III	OSG Storage	None	LTS
S-4: An aircraft accident could result in damage to the OSG Storage Facility with a subsequent release of radioactive material	Class III	OSG Storage	None	LTS
S-5: Seismic activity could compromise the integrity of the OSG Storage Facility	Class II	OSG Storage	Mitigation Measure **G-3a** (above)	LTS
S-6: A terrorist attack could result in damage to the OSG Storage Facility with a subsequent release of radioactive material	Class III	OSG Storage	None	LTS

Table ES-6. Summary of Impacts and Mitigation for the Proposed Project

Impact	Impact Class[a]	Project Component[b]	Mitigation Measure(s)	Residual Impact[c]
Traffic and Circulation				
T-1: RSG transport may damage roadway/parking infrastructure and would temporarily increase local traffic	Class III	Transport	**T-1a**: Repair any damage to pavement from the transporter ~~None~~	LTS
T-2: Staging and preparation would temporarily increase local traffic	Class II	Staging & Prep	**T-2a:** Avoid travel during peak season on Avila Beach Drive **T-2b:** Avoid travel during peak time on Highway 101	LTS
T-3: Steam generator replacement activities would temporarily increase local traffic	Class II	OSG Storage; Installation	**T-3a:** Develop a trip reduction program ~~**T-3b:** Avoid travel during peak season on Avila Beach Drive and San Luis Bay Drive~~ Mitigation Measure **T-2a** (Installation) and **T-2b** (above)	LTS
Visual Resources				
V-1: Short-term visibility of RSGs and transporters to viewers at Harford Pier and San Luis Obispo Bay Viewpoints (KOP 1)	Class II	Transport	**V-1a:** Offloading and transport activities during off-season time periods **V-1b:** Minimize disruptive night lighting in the vicinity of Harford Pier and San Luis Harbor Mitigation Measure **N-1a** (above)	LTS
V-2: Short-term visibility of RSGs and transporters to other viewers along access route west of the Access Gate	Class III	Transport	None	LTS
V-3: Short-term visibility of steam generators and transporters to viewers at DCPP (KOP 3)	Class III	Transport; Staging & Prep; OSG Storage; Installation	None	LTS
V-4: Short-term visibility of steam generators and transporters to recreational boats (KOP 4)	Class III	Transport; Staging & Prep; OSG Storage	None	LTS

[a] Impact Classes: Class I (significant; unmitigable); Class II (less than significant with mitigation incorporated); Class III (less than significant); Class IV (beneficial)

[b] Project Component: Transport (Replacement Steam Generator Transport); Staging & Prep (Replacement Steam Generator Staging & Preparation); OSG Storage (Original Steam Generator Removal, Transport, and Storage); Installation (Replacement Steam Generator Installation)

[c] LTS: less than significant

Table ES-7. Summary of Impacts and Mitigation for Project Alternatives

Impact	Applicable Alternatives[a]	Impact Class[b]	Project Component[c]	Mitigation Measure(s)	Residual Impact[d]
Air Quality					
A-1: Replacement activities would cause emissions from transport and construction equipment	Intake Cove; All TSA Alts; All OSGSF Alts; Offsite Disposal	Class II	Transport; Staging & Prep OSG Storage	**A-1a:** Develop and implement a trip reduction program **A-1b:** Develop and implement a diesel combustion and emission control plan **A-1c:** Offset tugboat NOx emissions with an offsite mitigation program (Intake Cove~~, Offsite Disposal~~)	LTS, less than significant
A-2: Construction of the OSG Storage Facility would cause emissions from portable concrete batch sources	All OSGSF Alts	Class II	OSG Storage	**A-2a:** Use registered portable equipment	LTS
Biological Resources					
B-3: Vessel traffic would increase the likelihood of collisions with protected marine mammals	Intake Cove; Offsite Disposal	Class II	Transport; OSG Storage	**B-3a:** Marine Mammal Observer Training	LTS
B-4: Offloading activities would disturb nearshore marine habitats	Intake Cove; Offsite Disposal	Class III	Transport	None	LTS
B-5: Vehicular travel into undisturbed areas could directly impact native vegetation	Intake Cove; TSA Alt C; All OSGSF Alts	Class II (TSA Alt C, All OSGSF Alts); Class III (Intake Cove)	Transport; Staging & Prep; OSG Storage	**B-5a:** Delineation of Disturbance Limits (TSA Alt C, All OSGSF Alts)	LTS
Shutdown of DCPP would eliminate the effects of thermal plume discharge	No Project	Class IV	Shutdown or N/A	None.	Beneficial
Impingement and entrainment would cease with shutdown of DCPP	No Project	Class IV	Shutdown or N/A	None.	Beneficial
Cultural Resources					
C-1: Ground-disturbing activity may damage or destroy previously undetected cultural resources	All TSA Alts	Class II	Staging & Prep	**C-1a:** Cultural Resources Treatment Plan (CRTP) **C-1b:** Construction monitoring	LTS

Table ES-7. Summary of Impacts and Mitigation for Project Alternatives

Impact	Applicable Alternatives[a]	Impact Class[b]	Project Component[c]	Mitigation Measure(s)	Residual Impact[d]
Geology, Soils and Paleontology					
G-1: Extremely heavy loads could mobilize unstable ground along transport route	Intake Cove	Class II	Transport	**G-1a:** Prevent overloading of unstable ground along transport route	LTS
G-2: Temporary effects of earthquake shaking could endanger worker safety	Intake Cove; All TSA Alts	Class II	Transport; Staging & Prep	**G-2a:** Protect workers from temporary effects of earthquake shaking **G-2b:** Prevent casualties caused by falling rocks	LTS
G-3: Ground shaking could compromise the integrity of the OSG Storage Facility	All OSGSF Alts	Class II	OSG Storage	**G-3a:** Long-Term Seismic Program Update	LTS
G-4: Slope instability could affect design, construction, and functioning of the OSG Storage Facility	All OSGSF Alts	Class II	OSG Storage	**G-4a:** Evaluate slope stability in the vicinity of the OSG Storage Facility site	LTS
Hazardous Materials					
H-1: Heavy equipment fuel, oil, or hydraulic line leak or rupture could cause hazardous materials release	Intake Cove; All TSA Alts; All OSGSF Alts; Offsite Disposal	Class II	Transport; Staging & Prep; OSG Storage	**H-1a:** Implement DCPP spill response procedures **H-1b:** Conduct routine inspections and maintenance of transporter	LTS
H-2: Heavy equipment maintenance could cause hazardous materials release	Intake Cove; All TSA Alts; All OSGSF Alts; Offsite Disposal	Class II	Transport; Staging & Prep; OSG Storage	**H-2a:** Properly handle maintenance waste	LTS
H-3: Previously unknown contaminated soil/ groundwater could be encountered during construction	All OSGSF Alts; Offsite Disposal	Class II	OSG Storage	**H-3a:** Stop work immediately and notify appropriate project personnel and regulators	LTS
~~**H-4:** Previously unknown asbestos or lead could be encountered~~	~~All OSGSF Alts; Offsite Disposal~~	~~Class III~~	~~OSG Storage~~	~~None~~	~~LTS~~
Hydrology and Water Quality					
W-1: Offloading the generators could disturb marine sediments or accidentally introduce contaminants to the ocean water	Intake Cove; Offsite Disposal	Class II	Transport	Mitigation Measures **H-1a, H-1b** and **H-2a** (above)	LTS
W-2: Construction and use of staging and preparation areas could result in disturbance of sediment or spill of materials that would contaminate stormwater	All TSA Alts	Class II	Staging & Prep	**W-2a:** A SWPPP shall be prepared for construction activities Mitigation Measures **H-1a** and **H-2a** (above)	LTS

Table ES-7. Summary of Impacts and Mitigation for Project Alternatives

Impact	Applicable Alternatives[a]	Impact Class[b]	Project Component[c]	Mitigation Measure(s)	Residual Impact[d]
W-3: Fuel or other contaminants associated with heavy equipment used during OSG removal, transport, and storage could spill and contaminate surface waters	All OSGSF Alts	Class II	OSG Storage	Mitigation Measures **H-1a** and **H-2a** (above)	LTS
Land Use, Recreation, and Agriculture					
L-1: Transport would disrupt an established land use	Intake Cove; Offsite Disposal	Class III	Transport; OSG Storage	None	LTS
L-2: Transport would disrupt recreational activities	Offsite Disposal	Class II	OSG Storage	**L-2a:** Avoid peak recreational usage **L-2b:** Schedule Pecho Coast Trail hikes around RSG transport Mitigation Measure **N-1a** (below)	LTS
Noise and Vibration					
N-1: Offloading would temporarily increase local noise levels near sensitive receptors	Intake Cove; All TSA Alts; All OSGSF Alts; Offsite Disposal	Class II (Offsite Disposal); Class III	Transport; Staging & Prep; OSG Storage	**N-1a:** Provide advance notice of offloading and transport (Offsite Disposal) **N-1b:** Provide liaison for nuisance complaints (Offsite Disposal)	LTS
N-2: Increased traffic during the steam generator replacement project would expose sensitive receptors along Avila Beach Drive and San Luis Bay Drive to increased noise	~~Intake Cove; All TSA Alts;~~ All OSGSF Alts~~; Offsite Disposal~~	Class III	OSG Storage	None	LTS
Public Services and Utilities					
U-1: Project would disrupt utility systems	Intake Cove; All TSA Alts; All OSGSF Alts; Offsite Disposal	Class II (Offsite Disposal); Class III (Intake Cove, TSA Alts, OSGSF Alts)	Transport; Staging & Prep; OSG Storage	Mitigation Measure **G-1a** (above) (Offsite Disposal)	LTS
U-2: Project would impede emergency access	Intake Cove, All TSA Alts, All OSGSF Alts; Offsite Disposal	Class II (~~OSGSF Alts,~~ Offsite Disposal); Class III (Intake Cove, TSA Alts, OSGSF Alts)	Transport; Staging & Prep; OSG Storage	**U-2a:** Pre-position emergency responders during road blockages (~~All OSGSF Alts~~Offsite Disposal)	LTS

Table ES-7. Summary of Impacts and Mitigation for Project Alternatives

Impact	Applicable Alternatives[a]	Impact Class[b]	Project Component[c]	Mitigation Measure(s)	Residual Impact[d]
U-3: Project's utility and public service demands would exceed the capabilities of existing service providers	Intake Cove, All TSA Alts, All OSGSF Alts; Offsite Disposal	Class III	Transport; Staging & Prep; OSG Storage	None	LTS
Socioeconomics					
None	NA	NA	NA	NA	LTS
System and Transportation Safety					
S-2: RSG transport between Port San Luis and the DCPP, or OSG transport could impede emergency response vehicles	All OSGSF Alts; Offsite Disposal	Class II	OSG Storage	Mitigation Measure **U-2a** (above)	LTS
S-3: Residual contamination would be present on the OSGs with the potential for radiation exposure during removal and transport	All OSGSF Alts	Class III	OSG Storage	None	LTS
S-4: An aircraft accident could result in damage to the OSGSF with a subsequent release of radioactive material	All OSGSF Alts	Class III	OSG Storage	None	LTS
S-5: Seismic activity could compromise the integrity of the OSG Storage Facility	All OSGSF Alts	Class II	OSG Storage	Mitigation Measure **G-3a** (above)	LTS
S-6: A terrorist attack could result in damage to the OSG Storage Facility with a subsequent release of radioactive material	All OSGSF Alts	Class III	OSG Storage	None	LTS
S-7: Residual contamination would be present on the OSGs with the potential for radiation exposure during offsite transport	Offsite Disposal	Class III	OSG Storage	**S-7a:** Alternate OSG Barge Loading Site	LTS
DCPP shutdown would decrease probability of core-damaging accident associated with decreased plant operational life	No Project	Class IV	Shutdown	None	Beneficial
DCPP shutdown would reduce the risk associated with spent fuel handling	No Project	Class IV	Shutdown	None	Beneficial
DCPP shutdown would limit the number of years that DCPP would operate, and therefore also limit the probability of an accident due to steam generator tube ruptures	No Project	Class IV	Shutdown	None	Beneficial
DCPP shutdown would reduce the consequences of a terrorist attack	No Project	Class IV	Shutdown	None	Beneficial
Traffic and Circulation					

Table ES-7. Summary of Impacts and Mitigation for Project Alternatives

Impact	Applicable Alternatives[a]	Impact Class[b]	Project Component[c]	Mitigation Measure(s)	Residual Impact[d]
T-1: Steam generator transport may damage roadway/parking infrastructure and would temporarily increase local traffic	Offsite Disposal	Class III	OSG Storage	**T-1a:** Repair any damage to pavement from the transporter~~None~~	LTS
T-2: Staging and preparation would temporarily increase local traffic	All TSA Alts	Class II	Staging & Prep	**T-2a:** Avoid travel during peak season on Avila Beach Drive **T-2b:** Avoid travel during peak time on Highway 101	LTS
T-3: Steam generator replacement activities would temporarily increase local traffic	All OSGSF Alts	Class II	OSG Storage	**T-3a:** Develop a trip reduction program ~~**T-3b:** Avoid travel during peak season on Avila Beach Drive and San Luis Bay Drive~~ Mitigation Measure **T-2a** and **T-2b** (above)	LTS
Visual Resources					
V-3: Short-term visibility of steam generators and transporters to viewers at DCPP (KOP 3)	Intake Cove; All TSA Alts; All OSGSF Alts	Class III	Transport; Staging & Prep; OSG Storage	None	LTS
V-4: Short-term visibility of steam generators and transporters to recreational boats (KOP 4)	Intake Cove; All TSA Alts; All OSGSF Alts	Class III	Transport; Staging & Prep; OSG Storage	None	LTS

[a] Applicable Alternatives: Intake Cove (Replacement Steam Generator Offloading Alternative); TSA Alt (Temporary Staging Area Alternative); OSGSF Alt (Original Steam Generator Storage Facility Location Alternative); Offsite Disposal (Original Steam Generator Offsite Disposal Alternative); No Project (No Project Alternative)

[b] Impact Classes: Class I (significant; unmitigable); Class II (less than significant with mitigation incorporated); Class III (less than significant); Class IV (beneficial)

[c] Project Component (that applicable alternatives is/are part of): Transport (Replacement Steam Generator Transport); Staging and Prep (Replacement Steam Generator Staging and Preparation); OSG Storage (Original Steam Generator Removal, Transport, and Storage); Shutdown (DCPP shutdown associated with the No Project Alternative)

[d] LTS: less than significant