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An addendum has been appended to this report following exhibit 4 on page 47.

Th12a

Date Filed:	April 10, 2008
49th Day:	May 29, 2008
180th Day:	October 7, 2008
Staff:	Tom Luster-SF
Staff Report:	April 17, 2008
Hearing Date:	May 8, 2008

STAFF REPORT
COASTAL DEVELOPMENT PERMIT APPLICATION

APPLICATION FILE NO.:	E-08-001
APPLICANT:	Southern California Edison Co.
PROJECT LOCATION:	On Camp Pendleton Marine Corps Base, near the City of San Clemente, San Diego County.
PROJECT DESCRIPTION:	Transport and installation of replacement steam generators for San Onofre Nuclear Generating Station (SONGS) Units 2 & 3.
SUBSTANTIVE FILE DOCUMENTS:	See Appendix A
STAFF RECOMMENDATION:	Approval with conditions.
EXHIBIT 1:	Location Map
EXHIBIT 2:	SONGS Site Layout
EXHIBIT 3:	Del Mar Boat Basin
EXHIBIT 4:	Route Map

SUMMARY

PROJECT DESCRIPTION

Southern California Edison (SCE) has proposed replacing the existing steam generators in two electrical generating units at the San Onofre Nuclear Generating Station (SONGS). The existing generators would be removed and stored at the SONGS site for future disposal, and replacement steam generators (RSGs) would be built in Japan and shipped to Long Beach, then barged to the Del Mar Boat Basin at Camp Pendleton, in northern San Diego County. From there, the RSGs would be transported by heavy equipment along the beach for several miles, then routed inland along existing military roads, a short segment of Interstate 5, and several miles of Old Highway 101 to the SONGS facility to be installed.

KEY COASTAL ACT ISSUES & MITIGATION MEASURES

The main issues for Coastal Act conformity relate to marine biological resources, dredging and filling of coastal waters, and effects on terrestrial native vegetation.

- **Marine Biological Resources:** The proposed project would result in a loss of about 1000 square feet of eelgrass within Camp Pendleton's Del Mar Boat Basin. SCE has proposed to mitigate for this loss using protocols established through the National Marine Fisheries Service *Southern California Eelgrass Mitigation Policy* (initially adopted July 31, 1991, modified February 27, 2008). The proposed project also has the potential to adversely affect marine mammals, sea turtles, and coastal bird species.
- **Dredging and Filling of Coastal Waters:** The proposed project would require dredging about 4,800 cubic yards of material from Camp Pendleton's Del Mar Boat Basin. It may also include placing mats across several coastal watercourses if they are open to the ocean during RSG transport.
- **Effects on Native Terrestrial Vegetation:** The project would occur in and adjacent to several types of native vegetation; however, the Commission's staff biologist has concluded areas potentially affected by the project are not environmentally sensitive habitat areas (ESHAs). Still, SCE will be mitigating for any loss of native vegetation caused by project-related activities.

STAFF RECOMMENDATION

For each Coastal Act issue evaluated in these Findings, staff believes that mitigation measures proposed by SCE, required by the U. S. Fish and Wildlife Service and the Marine Corps Base Camp Pendleton, or imposed through the recommended Special Conditions herein, will allow the project to conform to applicable Coastal Act provisions. Commission staff believes the proposed project, as conditioned, will be implemented in a manner consistent with the Chapter 3 policies of the Coastal Act. Staff therefore recommends the Commission **approve** coastal development permit application E-08-001, as conditioned.

Note: Federal law pre-empts the state from imposing requirements related to nuclear safety or radiation hazards. This report therefore evaluates only those issues necessary to determine conformity to policies of Chapter 3 of the Coastal Act and does not address the issues pre-empted by federal law.

STAFF NOTE

This proposed project is similar to one the Commission approved in February 2003 allowing SCE to transport the SONGS Unit 1 reactor vessel to the Del Mar Boat Basin. For Coastal Act purposes, the main differences between the currently proposed project and the previous project are that this project would move equipment in the opposite direction – i.e., from the Boat Basin to SONGS – and that SCE is proposing to use a transporter capable of moving along the beach at a faster rate than the one proposed to be used in the earlier project. By reducing the travel time along the beach, this faster transporter will reduce potential biological and hazard-related impacts that might result from the transporter making overnight stops along the beach above the high tide line. One additional difference not related to Coastal Act conformity is that the previous project involved transporting equipment that had low levels of radioactivity, while this current project would involve transport of new generators with no radioactive component.

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1.0 RECOMMENDED MOTION AND RESOLUTION

Staff recommends the Commission approve Coastal Development Permit No. E-08-001 subject to the conditions in Sections 2.0 and 3.0 below.

MOTION

I move that the Commission approve Coastal Development Permit No. E-08-001 subject to conditions set forth in the staff recommendation.

Staff recommends a **YES** vote. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution and findings. The motion passes only by an affirmative vote by the majority of the Commissioners present.

RESOLUTION

The Commission hereby approves the coastal development permit for the proposed development and adopts the findings set forth below on the grounds that the development as conditioned will be in conformity to the policies of the certified LCP and the public access and recreation policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

2.0 STANDARD CONDITIONS

1) **Notice of Receipt and Acknowledgment:** This permit is not valid until a copy of the permit is signed by the Permittee or authorized agent, acknowledging receipt of the permit and the acceptance of the terms and conditions, and is returned to the Commission office.

2) **Expiration:** Construction activities for the proposed project must be initiated within two years of issuance of this permit. This permit will expire two years from the date on which the Commission approved the proposed project if development has not begun. Construction of the development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made at least six months prior to the expiration date.

3) **Interpretation:** Any questions of intent or interpretation of any condition will be resolved by the Executive Director of the Commission (hereinafter, "Executive Director") or the Commission.

4) **Assignment:** The permit may be assigned to any qualified person, provided the assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5) Terms and Conditions Run with the Land: These terms and conditions shall be perpetual, and it is the intention of the Commission and the Permittee to bind all future owners and possessors of the subject property to the terms and conditions.

3.0 SPECIAL CONDITIONS

1. **Liability for Costs and Attorneys Fees:** The Permittee shall reimburse the Coastal Commission in full for all Coastal Commission costs and attorneys fees -- including (1) those charged by the Office of the Attorney General, and (2) any court costs and attorneys fees that the Coastal Commission may be required by a court to pay – that the Coastal Commission incurs in connection with the defense of any action brought by a party other than the applicant against the Coastal Commission, its officers, employees, agents, successors and assigns challenging the approval or issuance of this permit., the interpretation and/or enforcement of permit conditions, or any other matter related to this permit. The Coastal Commission retains complete authority to conduct and direct the defense of any such action against the Coastal Commission.

2. **Other Permits and Approvals:** ***Prior to transporting the Replacement Steam Generators (RSGs) from Long Beach to the Del Mar Boat Basin***, the Permittee shall submit the following permits and approvals:

   - Final Real Estate License from the Department of the Navy/U.S. Marine Corps.
   - California Department of Transportation permits and approvals needed for transport on roads and highways – e.g., encroachment permits, highway crossing permits, wide load permits, etc.

3. **Eelgrass:** ***At least 60 days prior to dredging***, the Permittee shall mitigate impacts to eelgrass as specified in the National Marine Fisheries Service *Southern California Eelgrass Mitigation Policy* (initially adopted July 31, 1991, modified February 27, 2008) and as described in SCE's *Eelgrass –Transplantation Plan for the SONGS Steam Generator Replacement Project on Marine Corps Base Camp Pendleton* (December 27, 2007). Additionally, ***prior to dredging***, the Permittee shall submit to the Executive Director documentation that the affected eelgrass has been transplanted as described in the above-referenced plan.

4. **Dredging:** ***At least 60 days prior to dredging***, the Permittee shall submit for Executive Director review and approval results of the sediment characterization sampling and analysis plan to be conducted as described in SCE's *Proposed Dredging and Disposal Plan, Del Mar Boat Basin – San Onofre Nuclear Generating Station (SONGS) Replacement Steam Generator Project, San Diego County, California* (December 20, 2007). If results show sediment contaminant concentrations that requiring special handling (e.g., as hazardous waste, not suitable for landfill disposal, etc.), the Permittee shall submit an application for a permit amendment to allow alternative dredging and disposal methods. If results show the dredged material is suitable for unconfined aquatic disposal (i.e., no contaminants at toxic levels) and consists of at least 80% sand, the Permittee shall submit an application for a permit amendment to use the material for beach nourishment.

5. **Biological Monitors:** The Permittee shall employ at least two qualified biologists approved by the Executive Director in consultation with the U.S. Fish and Wildlife Service during all staging and transport activities. The monitors shall monitor the staging and transport activities to prevent or minimize impacts to sensitive biological resources. Monitors shall have the authority to order cessation of all project operations if he or she determines that any impacts to sensitive biological resources cannot be safely avoided. The Permittee shall comply with this order as soon as it safe to do so and for as long as the order remains in effect. The monitors shall also ensure that all identified mitigation measures are implemented and all biological-related conditions of this permit are met.

6. **Personnel Training:** ***Prior to transporting the RSGs along the beach***, and as needed for new personnel, the biological monitors approved in **Special Condition 5** shall conduct a training session for all personnel and contractors involved in transport activities. Training shall include a description of all sensitive species and habitats potentially occurring on or near the sites, the protective measures to be implemented for each species, a description of the role of the biological monitors, and the responsibilities of those on site to protect biological resources. Upon completion of the training, the Permittee shall obtain from each trainee a signed statement stating that they have completed and understand the training. The Permittee shall make these statements available upon the Executive Director's request.

7. **Project Route and Impact Plan:** ***At least 60 days prior to transporting the RSGs from Long Beach to the Del Mar Boat Basin***, the Permittee shall submit for Executive Director review and approval a *Project Route and Impact Plan* as described in the March 31, 2008 U.S. Fish and Wildlife Informal Section 7 Consultation letter. Any layover locations for the RSG transporter and associated equipment and vehicles shall be limited to unvegetated areas along the beach. At no time shall the project-related equipment or vehicles use as a layover location any coastal dune habitat or areas that provide habitat for sensitive plant species, including Brand's phacelia (*Phacelia stellaris*), and beach morning glory (*Calystegia soldanella*).

   Additionally, ***within five days of transporting each RSG along the route between the Del Mar Boat Basin and SONGS***, the Permittee shall inspect the transport route and submit evidence to the Executive Director that: (a) a licensed civil engineer has inspected the transport route and concluded that the physical conditions of the proposed route lie within acceptable tolerances and capabilities of the transport equipment, and (b) conditions of the approved *Project Route and Impact Plan* have been met.

8. **Spill Prevention and Response:** At least 60 days prior to dredging, the Permittee shall submit for Executive Director review and approval a *Spill Prevention and Response Plan* that includes spill prevention and response measures to be implemented during all project-related activities with a potential to cause spills into state waters. The plan shall conform to requirements of the U.S. Coast Guard and the California Department of Fish and Game Office of Spill Prevention and Response (OSPR). The plan shall also include the *Equipment and Fueling Plan* required by the U.S. Fish and Wildlife Service and the Marine Corps as described in the May 31, 2008 U.S. Fish and Wildlife Service Informal Section 7 Consultation letter.

9. **Marine Mammal Monitoring and Protection Plan:** Within 30 days of completing the transport of each RSG, the Permittee shall submit documentation to the Executive Director of observations made of all interactions between project-related transport activities and marine mammals and sea turtles, all avoidance and mitigation measures taken, and any adverse effects on marine mammals or sea turtles, as described in the Permittee's *Marine Mammal Monitoring and Protection Plan* (December 2007).

10. **Impact Avoidance to Terrestrial Species:** Project activities on or near the beach and foredunes shall occur only outside the breeding and nesting season of the western snowy plover, California least tern, and California coastal gnatcatcher (from March 1 to September 15). The Permittee shall additionally avoid and reduce the potential impacts of night lighting by: (a) minimizing its duration, (b) minimizing its intensity, (c) using shielding, and (d) directing it away from the beach and sensitive wildlife habitat.

11. **Mitigation for Impacts to Native Terrestrial Vegetation:** No less than 60 days after each RSG delivery (i.e., 60 days after delivery of the Unit 2 RSGs and of the Unit 3 RSGs), the Permittee shall submit for Executive Director review and approval a habitat mitigation and restoration plan for impacts to native terrestrial vegetation along the transport route. The plan shall provide for no less than 1:1 mitigation for all impacts to native vegetation affected during project-related activities, including, but not limited to, coastal sage scrub, dune scrub, and native grassland. The plan shall identify the amount of each habitat type affected, and shall describe mitigation to be implemented for these effects, including location, planting plans, quantitative performance standards, mitigation time lines, monitoring requirements, and funding to be provided for implementation. The submitted plan shall first be approved by the U.S. Fish and Wildlife Service.

12. **Public Access Closure Notices:** At least one week before starting transport activities, the Permittee shall post and maintain notices advising the public that access to the southern segment of the San Onofre State Beach (Bluffs Campground area) will be temporarily (approximately 2-4 hours) restricted or controlled while the transporter transits the area. Notices shall be posted at the Bluffs Campground and at the State Park entry points. The notices shall include the dates, times, and locations of transit and a description of the expected duration of the access restrictions. Prior to posting, the Permittee shall submit for Executive Director review and approval the proposed content and locations of the postings, and shall also provide documentation showing that the proposed content and locations have been reviewed and approved by the California State Parks Department.

13. **Geologic Stability:** Prior to transporting the RSGs or transporters along any roads, the Permittee shall implement measures identified in its *Geological and Structural Assessment Report – Steam Generator Replacement Project Transportation Route Interstate 5 / Old 101 Alignments, San Diego County, California* (January 14, 2008) meant to ensure structural stability and to reduce the risk of damage to those roads. These measures include placing steel plates, shoring systems, and other similar materials over culverts, drain pipes, and other areas where the weight of the RSG and transporter may cause road damage.

14. Road Repairs: Within 30 days of completing transport of the steam generators, the Permittee shall submit documentation to the Executive Director showing that it has provided any financial compensation determined by the State Parks Department as necessary to repair any damage caused by the transporter or other project-related vehicles to Old Highway 101 or other San Onofre State Beach roads or infrastructure. At the discretion of the State Parks Department, the Permittee may make all necessary repairs in lieu of financial compensation.

4.0 FINDINGS AND DECLARATIONS

4.1 PROJECT PURPOSE, BACKGROUND, AND DESCRIPTION

Project Purpose: The primary purpose of the project is to replace the existing steam generators at the San Onofre Nuclear Generating Station (SONGS) Units 2 and 3 to allow them to continue generating electricity until the end of the facility's currently licensed operations in 2022.

Project Background: SONGS is located adjacent to the shoreline of the Pacific Ocean on an approximately 84-acre site leased from the Camp Pendleton Marine Corps Base, about four miles south of the City of San Clemente (see Exhibit 1 – Location Map and Exhibit 2 – Site Layout). Southern California Edison (SCE) is the facility's majority owner.[1] SONGS has two nuclear generating units that together produce up to about 2300 megawatts of electricity. In 1974, the Coastal Commission approved a coastal development permit for construction and operation of SONGS Units 2 & 3 for the duration of its existing federal operating license. Unit 2 started operating in 1983 and Unit 3 in 1984.[2] Both units are licensed by the federal Nuclear Regulatory Commission (NRC) to operate until 2022.

The two SONGS generating units are pressurized water reactors using two separate closed-loop water systems to generate electricity. The primary loop moves high-pressure and heated water between the nuclear reactor and the steam generators. The steam generators, which are about 65 feet tall, 22 feet diameter, and which weigh about 620 tons, contain two sets of thousands of small tubes – one set circulating water from the primary loop and a separate set circulating water from the secondary loop. Heat transferred between the two loops is converted to steam, which then turns a turbine that creates electricity. The steam in the secondary loop then cycles past a third separate water system, a once-through cooling water structure that pulls in seawater to condense the steam back to water.

Several years ago, SCE determined that the steam tubes in the facility's original steam generators were deteriorating at a faster than expected rate. Each steam generator contains over 100 miles of tubes, which are expected to deteriorate to some degree over time due to pitting, stress, and corrosion. NRC regulations allow facilities to operate with a relatively small amount of tube deterioration. However, SCE monitoring of the tubes showed that the original steam generator tubes would reach the allowable level of deterioration in just a few years and about a decade before the facility's 2022 license expiration date.[3] This same problem has been identified a

[1] SCE owns 75.05% of SONGS Units 2 & 3, San Diego Gas & Electric owns 20%, the City of Anaheim owns 3.16%, and the City of Riverside owns 1.79%. The project requires the approval of all four entities.

[2] Unit 1 at SONGS was operated from 1968 until 1992. In 1992, SCE removed fuel from Unit 1 and started the decommissioning process, which is ongoing.

[3] The rate of degradation and the remaining expected operating life of the original steam generators is expressed as a probability. As described in the project's Environmental Impact Report, there is a 25% probability that Unit 2 would have to shut down by about 2009, increasing to a 100% probability by 2016. Unit 1 has a 15% probability that it would have to shut down by 2009, increasing to 75% by 2016.

number of similar facilities around the country and is believed to be caused by a type of alloy used in the tubes. Most of the 57 facilities in the U.S. with steam generators similar to SONGS either have replaced their generators or are in the process of replacing them.

In 2004, SCE filed an application with the California Public Utilities Commission (CPUC) to replace the original steam generators and establish ratemaking to recover its costs. The CPUC served as the lead CEQA agency for the proposed project. It conducted environmental review that culminated in certification of a Final Environmental Impact Report in September 2005.

Project Description: The main project activities consist of removing the four original steam generators (OSGs),[4] storing them onsite, and transporting and installing replacement steam generators (RSGs).

- **OSG Removal and On-Site Storage:** To remove the original steam generators, SCE will create an opening in the containment building housing each of the generating units, decontaminate and treat the Original steam generators to remove or encapsulate any remaining radioactive material within, and transport them to a temporary enclosure within the high security area at SONGS.[5] Once the original steam generators are decontaminated and treated, SCE would handle them as low-level radioactive waste, pursuant to NRC requirements for such materials. They would be removed from the containment buildings and stored until they have eventually disposed of offsite.[6]

- **RSG Transport to SONGS:** The RSGs would be manufactured and shipped from Japan to Long Beach. Each RSG is about 65 feet long, 22 feet in diameter, and weighs over 600 tons. At Long Beach, they would be placed onto a Goldhofer transport vehicle and loaded onto a barge. The Goldhofer is a self-propelled, six-axled, rubber-wheeled vehicle used to transport heavy loads. Each axle can produce up to about 16 metric tons of traction. Transporting a RSG of more than 600 tons would require several Goldhofer units be connected for a total size of about 75 feet long and 25 feet wide.

  The barge would deliver to RSGs to the Camp Pendleton Del Mar Boat Basin, about 14 miles south of SONGS (see Exhibit 3 – Del Mar Boat Basin). The Marine Corps uses the Boat Basin primarily for transport of various types of military equipment. SCE expects to transport two RSGs per barge – one set for Unit 2 and another for Unit 3. The barges would

[4] Each of the two nuclear generating units includes two steam generators.

[5] Steam generator replacement at SONGS will involve significant challenges not at issue at other facilities. For example, because the equipment doors in the two containment buildings are too small for the RSGs, SCE will need to create an opening in the buildings. This will require the containment wall inner support be "de-tensioned", which has not been attempted at other operating nuclear facilities. Additionally, the RSGs will be among the largest ever installed in a facility and will need to be installed in a relatively confined area. However, because these challenges and their resolution are issues related to radiological safety, they are under the exclusive purview of the NRC. See also Section 4.2. below.

[6] The eventual disposal offsite is not a part of this review, as SCE has not yet prepared a disposal plan or identified an offsite destination for the Original steam generators.

be moored to an existing bulkhead at the boat basin for up to about 18 days per RSG delivery. Docking the barge at the Boat Basin would require dredging of up to about 4,800 cubic yards of material to a depth of about -12 feet mean lower low water (MLLW). SCE's proposed dredging activities are more thoroughly described in Section 4.4.2 of these Findings and in SCE's *Proposed Dredging and Disposal Plan: Del Mar Boat Basin, San Onofre Nuclear Generating Station (SONGS Replacement Steam Generator Project, San Diego County* (December 20, 2007).

Once offloaded at the Boat Basin, SCE would transport one RSG at a time along a route that would include several miles of beach, Camp Pendleton roads, Interstate 5, and Old Highway 101 (see Exhibit 4 – Route Map). At the Boat Basin, the RSGs would be driven off the delivery barge along about 1500 feet of existing roads within Camp Pendleton to a staging area, where they would be loaded onto a tracked transporter. This transporter would consist of two self-propelled "crawlers", which are tracked vehicles about thirty feet long and twenty-six feet wide. Two crawlers would be attached front-to-back and fitted with supports and turntables needed to support the weight of an RSG. The tracked transporter would allow much quicker transit along the beach area than would the Goldhofer.

The RSGs would then be transported below the high tide line along the beach for about eight miles. The beach route could include crossing the mouth of the Santa Margarita Estuary and the mouths of several small creeks, if they are open to the sea. During much of the year, these waterbodies do not have a direct surface connection to the ocean; however, as described in Section 4.4.2 of these Findings, SCE has developed procedures for crossing these areas both when they may have flowing water and when they do not.

At Red Beach within Camp Pendleton, the RSGs would be driven inland up a military road running between the beach and Camp Pendleton's Las Pulgas Road Gate. At a staging area near the gate, they would be transferred using cranes to the Goldhofer, which would have taken roads within Camp Pendleton from the Boat Basin area to this staging area. The Goldhofer would then be used to transport the RSGs for the remainder of the route.

The Goldhofer would travel on military roads parallel to Interstate 5 (I-5) for about 1000 feet and then transition to the southbound lanes of I-5 through a temporary opening in the boundary fence. They would travel along I-5 for about 1300 feet and then return through another temporary fence opening to a military road. Although SCE's use of I-5 would require the southbound lanes be closed for up to several hours per trip, this would allow the RSGs to avoid crossing the weight-limited Skull Canyon Bridge on Old Highway 101. SCE would coordinate its use of I-5 with CalTrans and the California Highway Patrol, and to reduce traffic impacts would use this portion of the transport route between midnight and 6 A.M. SCE is additionally requesting that the RSGs be able to travel along an additional stretch of I-5 – from the Las Pulgas exit ramp to the exit point described above. This would increase the distance traveled along I-5 by about one-half mile, but would reduce potential impacts to terrestrial habitat along a portion of the Camp Pendleton military road and would result in the project needing just one, rather than two, temporary openings between I-5 and the adjacent military road.

After returning to the military road, the Goldhofer would transport the RSGs for about one mile before reaching Old Highway 101. It would then continue along Old Highway 101 for about 5.5 miles to SONGS. After delivery, both the Goldhofer and the tracked transporter would return unloaded along their same routes to the Boat Basin. Each transport trip to and from the Boat Basin to SONGS is expected to take as little as one or two days each way. During inclement weather or high water, transporters may be held at either end to wait for necessary travel conditions.

Note: SCE and the CPUC evaluated several alternative routes and transport methods, including transport from Long Beach by rail or road and delivery at different locations along the shoreline, all of which would be infeasible or would cause overall greater adverse impacts to coastal resources. These are described in more detail in Section 4.5.2 of these Findings.

The recommended Findings herein describe just the impacts expected from SCE's preferred route described above and the recommended Standard and Special Conditions are those needed for activities along this route to conform to Coastal Act policies. Any proposed changes from the route or transport methods described herein may require SEC to submit an application for an amended coastal development permit for further Commission review and approval.

- **RSG Installation:** Once at SONGS, the RSGs would be placed within a temporary RSG staging and preparation area to be constructed within the SONGS high security area. Staging and preparation will require office space, areas for fabrication and welding, a warehouse, and other similar areas and uses. All facilities would be on previously developed areas at SONGS. Preparation will also include construction of containment access facilities, decontamination areas, and personnel processing facilities adjacent to the containment buildings. Once prepared, the RSGs would be moved into the containment buildings and installed, and the containment buildings would be resealed.

- **Project Personnel and Equipment:** The project is expected to require up to about 1,000 personnel in addition to the facility's usual workforce of approximately 1,000 personnel. SCE expects to use the transporters described above along with a number of support vessels and vehicles, including a tugboat, chase vessel, bulldozers, trucks, and other similar equipment.

- **Anticipated Project Schedule:** The steam generator removal and replacement would take place during two of the regularly scheduled refueling and maintenance outages at SONGS. Unit 2 is next scheduled to be refueled starting in October 2009 and Unit 3 in October 2010. Each outage with steam generator replacement is expected to last up to about 115 days. SCE plans to conduct dredging activities in Fall 2008. It expects to transport the Unit 2 RSGs in January 2009 and the Unit 3 RSGs in November-December 2009.

4.2 SONGS-RELATED ISSUES NOT REVIEWED FOR COASTAL ACT CONFORMITY

The following ongoing or potential activities at SONGS are not part of this review:

- **Radiological Hazards and Safety:** The NRC has exclusive jurisdiction over radiological aspects of the proposed project. The state is preempted by federal law from imposing upon operators of nuclear facilities any regulatory requirements concerning radiation hazards and nuclear safety. The state may, however, impose requirements related to other issues. The U.S. Supreme Court, in *Pacific Gas and Electric Company v. State Energy Commission, 461 U.S. 190, 103 S.Ct. 1713 (1983)*, held that the federal government has preempted the entire field of "radiological safety aspects involved in the construction and operation of a nuclear plant, but that the states retain their traditional responsibility in the field of regulating electrical utilities for determining questions of need, reliability, costs, and other related state concerns." The Coastal Commission findings herein address only those state concerns related to conformity to applicable policies of the Coastal Act, and do not evaluate or condition the proposed project with respect to nuclear safety or radiological issues.

- **Storage of the Original Steam Generators:** SCE will store the OSGs at SONGS pending identification of an acceptable offsite disposal or storage location. During this project, the OSGs would be moved from the containment buildings to a site east of Interstate 5 within the SONGS high security area. The OSGs are considered low-level radioactive waste and subject to NRC requirements for safe handling and storage.

- **Ongoing Operations of Units 2 & 3:** As noted above, the Coastal Commission in 1974 approved a coastal development permit authorizing construction and operation of Units 2 and 3 for the duration of its existing NRC operating licenses. Additionally, the Commission in 2001 approved CDP E-00-014 for an Interim Spent Fuel Storage Installation (ISFSI) that would be used to store spent fuel generated during the remaining licensed operating life of the facility. The recommended Findings in this staff report do not address ongoing operations that would result from the currently proposed project, as the Commission has already authorized the facility to operate until 2022.

- **Potential Extension of the SONGS Operating License:** This review does not evaluate any potential extension of the existing SONGS operating licenses from the NRC. Although the RSGs have an expected operating life of about 30-40 years, which would be well past the 2022 end date of those licenses, any such request by SCE for a license extension or renewal would be subject to additional CEQA and NEPA review and would require SCE to submit a new coastal development permit application to the Coastal Commission.

  SCE is considering requesting new or extended licenses from the NRC that would allow the power plant to operate beyond 2022; however, its decision will be based in part of a pending feasibility study that will help determine the condition of other SONGS components and will provide information about whether continued operations past 2022 would be viable and cost-effective. Additionally, the PUC's approval of the rate increase needed to pay for this RSG

project was premised on the facility operating until the end of the existing license periods. Based on the above, it is not yet reasonably certain that SONGS would operate beyond 2022.

- **SONGS Decommissioning:** SONGS will be decommissioned after the end of its operating life; however, that process will involve separate environmental review and will require submittal by SCE of a new CDP application to the Commission. Therefore, decommissioning is not being reviewed as part of this project or these findings.

- **Nuclear Power Plant Assessment Pursuant to AB 1632:** In 2006, California adopted Assembly Bill 1632, which directed the California Energy Commission to compile and assess scientific studies for determining potential vulnerabilities at both SONGS and the Diablo Canyon Power Plant that may be caused by seismic events or plant aging. This information is meant to inform the state's policymakers for energy planning purposes.

  The Energy Commission has scheduled for later this year publication of a draft report, a public comment period, and possible adoption of a final report. Development that may be needed at SONGS as a result of this report may require SCE to submit a separate application for a coastal development permit.

4.2 COASTAL COMMISSION JURISDICTION AND STANDARD OF REVIEW

The proposed project would occur on the Marine Corps Base Camp Pendleton, a federally owned and operated military facility used by the United States Marine Corps and located in an unincorporated area of the County of San Diego. SCE leases an approximately 84-acre site on Camp Pendleton for the SONGS facility. Because there is no certified LCP for this area, the standard of review for this development is Chapter 3 of the Coastal Act.

4.3 OTHER PERMITS AND APPROVALS

The proposed project is subject to the following permits and approvals:

FEDERAL

Department of the Navy / U.S. Marine Corps: The project will require a Real Estate License from the Department of the Navy for use of the Del Mar Boat Basin and RSG transport across Camp Pendleton lands. In August 2007, the Marine Corps Base Camp Pendleton (MCBCP) prepared a Final Biological Assessment of the proposed project pursuant to the federal Endangered Species Act.

Nuclear Regulatory Commission: As noted above, SONGS operations are authorized pursuant to licenses issued by the NRC. This proposed removal and storage of the OSGs will be subject to NRC regulations related to low-level radioactive waste.

Corps of Engineers: The project may require a Clean Water Act Section 404 permit and a Rivers and Harbors Act Section 10 permit from the Corps for transporting the RSG across watercourses.

U.S. Fish and Wildlife Service: On March 31, 2008, the U.S. Fish and Wildlife Service (USFWS) provided to the Marine Corps its informal consultation on the project's potential effects on federally-listed sensitive species pursuant to Section 7 of the Endangered Species Act. The USFWS concluded that the project, with mitigation, is not likely to adversely affect a number of sensitive species, including the federally endangered California least tern (*Sternula antillarum browni*), tidewater goby (*Eucyclogobius newberryi*), San Diego fairy shrimp (*Branchinecta sandiegonensis*), Riverside fairy shrimp (*Streptocephalus woottoni*), and the federally threatened coastal California gnatcatcher (*Polioptila californica californica*) and western snowy plover (*Charadrius alexandruinus nivosus*). Mitigation measures identified in this informal consultation are further described herein.

STATE AND LOCAL

California Environmental Quality Act: In September 2005, the California Public Utilities Commission (CPUC) certified a Final Environmental Impact Report (EIR) for the proposed project.

California Department of Transportation (CalTrans): Transporting the RSGs on state highways may require an encroachment permit, highway crossing permit, wide load permit, and a dual lane bonus purple permit.

San Diego Regional Water Quality Control Board (Regional Board): The SONGS facility is subject to conditions of National Pollutant Discharge Elimination System (NPDES) permits issued by the Regional Board. The proposed project may require revisions to the requirements of those permits. The proposed project will additionally be subject to a Storm Water Pollution Prevention Plan to be approved by the Regional Board.

San Diego County Air Pollution Control District: The project would require a permit for emissions generated by some of the mobile equipment used during project activities.

San Diego County Department of Environmental Health: The existing health permit for SONGS would be revised to address various project activities, such as those related to removal of lead paint and asbestos, glass bead blasting, and others.

4.4 CONFORMITY TO APPLICABLE COASTAL ACT POLICIES

4.4.1 Marine Resources and Water Quality

Coastal Act Section 30230 states:

> *Marine resources shall be maintained, enhanced, and, where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Coastal Act Section 30231 states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

The proposed project has the potential to adversely affect several types of marine biological resources, as described below.

EFFECTS ON EELGRASS DUE TO DREDGING

Delivering the RSGs via barge will require dredging about 4,800 cubic yards of sediment from the Del Mar Boat Basin in an area adjacent to the Boat Basin's existing berthing bulkhead. These proposed dredging activities, described in more detail in Section 4.4.2 (Dredging and Filling Coastal Waters) of these Findings, would result in a loss of just under about 1000 square feet (or about 0.02 acres) of eelgrass within the dredging footprint. Because of the location of the berthing bulkhead and the location of this eelgrass bed in the center of the dredging footprint, this adverse impact cannot be avoided.

To address this impact, SCE is proposing, prior to dredging, to transplant the eelgrass from this area to two other areas within the Boat Basin that are known to provide suitable eelgrass habitat (see *Eelgrass Transplantation Plan for the SONGS Steam Generator Replacement Project on Marine Corps Base Camp Pendleton*, December 27, 2007). The two areas – at the northeast and the southeast corners of the Boat Basin – currently have some eelgrass, but do not have 100% eelgrass cover. SCE proposes to transplant and monitor the eelgrass consistent with the National Marine Fisheries Service *Southern California Eelgrass Mitigation Policy* (adopted July 31, 1991, modified February 27, 2008), which the Commission and other agencies have used as the basis for eelgrass mitigation plans for other projects along the Southern California coast.

SCE would use divers to harvest and transplant bundles of eelgrass turions within three months before dredging starts. Before harvesting, SCE would determine eelgrass density within the impact site to allow future comparison with the density developed at the mitigation sites. Once the eelgrass is transplanted, SCE will monitor planting success for up to five years. Performance standards would be based on both the amount of coverage (area) and the density of the plants (turions per square meter). Criteria used to determine success include:

- After one year, the mitigation sites shall achieve a minimum of 70% coverage and 30% density as compared to the impact site.
- After two years, the mitigation sites shall achieve a minimum of 85% coverage and 70% density as compared to the impact site.
- During the third, fourth, and fifth years, the mitigation sites shall achieve a minimum of 100% coverage and 85% density as compared to the impact site.
- If these criteria are not met, SCE would develop a Supplementary Transplant Area pursuant to the success criteria identified in the above-referenced eelgrass policy.

To ensure that this adverse impact to eelgrass is adequately mitigated, **Special Condition 3** would require SCE to adhere to measures in the above-referenced policy. It would also require SCE to submit results of its eelgrass survey to the Executive Director prior to dredging.

POTENTIAL WATER QUALITY EFFECTS DUE TO DREDGING

SCE has developed a sediment characterization sampling and analysis plan to ensure the sediments that would be dredged do not contain contaminant concentrations at levels that would affect marine life. Before dredging, SCE would conduct sediment sampling and analysis in the area to determine whether there are contaminants present in the material to be dredged. Based on at least one previous sediment characterization from within the Boat Basin, it is believed that the sediments will be suitable for SCE's proposed landfill disposal.[7] However, to ensure implementation of the plan is protective of marine resources, **Special Condition 4** would require SCE to submit results of its sampling analysis for Executive Director review and approval prior to dredging. Should the analysis show contaminants at levels requiring special treatment, handling, or disposal, SCE would be required to submit an application for a permit amendment to modify its dredging proposal to ensure adequate protective measures are implemented. Should the analysis show that the material is suitable for unconfined aquatic disposal and consists of at least 80% sand, SCE would be required to submit an application for a permit amendment to allow the material to be used for beach nourishment.

POTENTIAL EFFECTS ON SENSITIVE SPECIES

SCE's proposed project activities along and within coastal waters create a potential for adverse effects on a number of species. The project would involve moving heavy equipment for several miles along the beach below the mean high tide line. In addition to the potential spill-related

[7] In a previous project within the Boat Basin, the Commission in January 1998 concurred with a Negative Determination (ND-162-97) for dredging about 5,000 cubic yards from the southwest corner of the Basin. Final results of sampling and analysis at that time showed that contaminant concentrations in the tested sediments were within the criteria established to allow for disposal in ocean waters.

concerns discussed in Section 4.4.3 of these Findings, these activities have the potential to harm several listed sensitive species, including the California least tern (*Sternula antillarum browni*), tidewater goby (*Eucyclogobius newberryi*), San Diego fairy shrimp (*Branchinecta sandiegonensis*), Riverside fairy shrimp (*Streptocephalus woottoni*), coastal California gnatcatcher (*Polioptila californica californica*), and western snowy plover (*Charadrius alexandruinus nivosus*). To avoid or minimize these potential effects, SCE has included in its proposed project a number of mitigation measures, and the MCBCP and USFWS have identified mitigation measures needed to ensure project activities do not cause adverse effects to these species. These include the following:

- SCE will employ biological monitors to train project personnel, to provide pre-transport biological surveys along the transport route, and to accompany the RSGs during transport to ensure potential adverse biological effects are avoided or minimized. **Special Conditions 5-7** would ensure these measures are implemented.
- Fueling of vehicles and equipment will not be allowed within 100 feet of waterbodies or drainages. At least 30 days before starting project activities, SCE will provide an *Equipment and Fueling Plan* for approval by the USFWS and Marine Corps that identifies locations and methods for fueling project-related equipment and vehicles. **Special Condition 8** would require SCE to submit a Spill Prevention and Response Plan for Executive Director review and approval to ensure that the fueling plan conforms to Coastal Act provisions related to spill prevention and response.
- SCE will minimize potential erosion and sedimentation through use of Best Management Practices throughout the project footprint and will implement a Soil Stabilization Plan subject to approval by the USFWS and the MCBCP.
- SCE will remove and properly dispose of all trash, litter, solid waste, and other materials associated with the proposed project.

Section 4.4.4 of these Findings identifies additional measures meant to avoid or minimize impacts to terrestrial biological resources, many of which will also result in avoidance or minimization of adverse water quality effects.

POTENTIAL EFFECTS ON MARINE MAMMALS AND SEA TURTLES

The proposed project's location on and adjacent to coastal waters creates a potential for project activities to adversely affect marine mammals. Any adverse effects would most likely be caused during barging or during RSG transport along the beach. Coastal waters near the project area may be used by up to about 30 species of marine mammals, including whales, dolphins, porpoises, seals, and sea lions; however, of those species, only about four are likely to be in the project vicinity. These include the Pacific harbor seal (*Phoca vitulina richardsi*), California sea lion (*Zalophus californianus*), Blue whale (*Balaenoptera musculus*), and Gray whale (*Eschrictius robustus*).

To avoid or minimize potential impacts, SCE has included with its proposed project a *Marine Mammal Monitoring and Protection Plan* (December 2007). The Plan also includes measures to avoid adverse effects to sea turtles, which are protected under the federal Endangered Species Act. It is likely that any of three sea turtle species may be in the area – Loggerhead (*Caretta caretta*), Green (*Chelonia mydas*), and Leatherback (*Dermochelys coriancea*).

The Plan identifies a number of mitigation measures SCE will incorporate into the project activities, including:

- The delivery barges would travel at speeds of about 8-9 knots. Most healthy marine mammals would be able to avoid contact at this speed.
- Delivery would occur outside of the June – August period each year when blue whales are most likely to be found in the area.
- SCE will employ National Marine Fisheries Service-approved marine mammal monitors on the tugboat towing the barge and on the chase vessel accompanying the barge. Monitors will be in direct communication with vessel operators.
- Vessel operators will follow guidelines to maintain at least a 1,000-foot distance between sighted animals, to not cross directly in the path of the animals, to not separate whale calves from their mothers, and other similar measures.
- Before transporting the RSGs, the transport crew will be trained on the role of the marine mammal monitors, on the regulatory requirements for protecting marine mammals and sea turtles, on proper vessel operation and communication needs to prevent impacts, and on reporting requirements.
- During RSG transport along the beach, at least one biological monitor will accompany the transport. The biological monitors will survey ahead of transport equipment to detect whether marine mammals are hauled out on the beach and will adjust the route or timing of the transport, if possible. Any attempt to move an animal would be subject to approval by the National Marine Fisheries Service.
- The monitors will document all observances of marine mammals and sea turtles. Documentation will include identifying the species, the physical characteristics of the animals, its position in relation to the vessels, any actions taken to ensure avoidance, and other types of information.
- After each transport, SCE will provide the above information to the National Marine Fisheries Service and to the California Department of Fish and Game.

To provide assurance that these activities have adequately avoided or minimized potential adverse impacts, **Special Condition 9** would require SCE to submit the above-documentation for Executive Director review and approval.

CONCLUSION

Based on the above, the Commission finds that the project, as conditioned, conforms to the provisions of Coastal Act Sections 30230 and 30231.

4.4.2 Dredging and Filling in Coastal Waters

Coastal Act Section 30233(a) states:

> *The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*
> *(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.*
> *(2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.*
> *(3) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.*
> *(4) Incidental public service purposes, including, but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*
> *(5) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.*
> *(6) Restoration purposes.*
> *(7) Nature study, aquaculture, or similar resource-dependent activities.*

Coastal Act Section 30233(b) states:

> *Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for these purposes to appropriate beaches or into suitable longshore current systems.*

The proposed project would require dredging within the Del Mar Boat Basin and may also result in temporary fill within coastal waters in the form of mats being placed across the mouth of the Santa Margarita River when the transporter moves along the beach. These activities are subject to Coastal Act Sections 30233(a) and (b), and are separately described below.

DREDGING

Delivery of the RSGs by barge to the Del Mar Boat Basin will require SCE to dredge about 4,800 cubic yards of sediment[8] to a depth of -12 feet Mean Lower Low Water (MLLW). SCE would dredge in the northwest corner of the Boat Basin near a bulkhead to be used by the RSG delivery barges. The dredging footprint would be about 130 feet wide by about 200 feet long.

[8] Note: The in-situ volume is estimated at 4,800 cubic yards. In recognition that the material will likely expand during handling, SCE applied a bulking factor of 40%, which results in an estimated disposal volume of about 6,700 cubic yards.

The Boat Basin is currently used by Camp Pendleton for military vessels, equipment delivery and recreational use by military personnel. It was originally created in the 1940s after Camp Pendleton was established. The Marine Corps has dredged a portion of the Boat Basin at least once since then (see the Commission's concurrence with Negative Declaration #ND-162-97, approved January 1998).

Analysis of Proposed Dredging for Conformity to Coastal Act Section 30233(a): Section 30233(a) imposes a three-part "test" for proposed dredging activities:

1) *Is the activity an allowable use?:* Section 30233(a) includes seven categories of allowable uses. Development activities in the form of dredging or filling coastal waters must fall within at least one of these categories. The proposed dredging and filling associated with this proposed project represent an "incidental public service" and are therefore an allowable use pursuant to Section 30233(a)(4). These activities are "incidental"[9] in that they are a relatively minor consequence of a much larger project needed for SONGS to continue providing its public service. They represent a "public service" in that SONGS operates as a regulated public utility providing public service in the form of electricity serving a substantial proportion of the California population. Further, these activities align with previous Commission decisions that have interpreted dredging and fill activities for "incidental public services" as being temporary rather than permanent.[10] The proposed activities are expected to affect coastal biological resources for only a short time – the dredging would result in a temporary disturbance to benthic infauna within an area naturally subject to ongoing sand movement, the eelgrass that would be lost due to dredging will be transplanted prior to dredging as described in Section 4.4.1 of these Findings, and the dredged area is expected to be suitable for recolonization by eelgrass. Based on the above, the Commission finds the proposed dredging activities meet the first test of Section 30233(a).

2) *Are there no feasible, less environmentally damaging alternatives?:* As noted above, both SCE and the CPUC evaluated a number of RSG delivery options that would not require dredging in the Boat Basin. However, the other options were either infeasible or would result in greater adverse environmental impacts. They include the following:
   - *Beach landing:* SCE evaluated the potential for constructing a barge landing facility on a beach just to the south of SONGS. This option was eliminated as a feasible alternative because it would have required construction of a pier more than 1,200 feet long and/or extensive dredging within the nearshore environment. Additionally, this beach landing would have occurred within view of public access and recreation areas along San Onofre State Park. This option would have resulted in more substantial adverse effects than those caused by dredging within the Boat Basin.

[9] In *Davis v. Pine Mountain Lumber Company* (272 Cal.App.2d 218), the court defined "incidental" as meaning "depending upon or appertaining to something else as primary; something necessary, appertaining to, or depending on another which is termed the principal, something incidental to the main purpose."

[10] See, for example, the Court of Appeals' endorsement of the Commission's interpretation in *Bolsa Chica Land Trust v. Superior Court of San Diego County* (1999) 71 Cal.App.4th 493.

- *Transport by rail:* SCE considered two options – constructing a rail spur from the Boat Basin to join the existing rail line along the coast, or transporting the RSGs from Long Beach via rail. These options would have created interferences with existing rail infrastructure, primarily due to bridge crossings and overpasses being too narrow. Transporting the RSGs by rail would require significant modifications to tracks, bridges, and overpasses, many of which could result in substantial adverse impacts due to erosion, effects on ESHA or other vegetation, additional air quality impacts, interruption in rail service, and others.
- *Transport by road:* SCE considered transporting the RSGs from Long Beach to SONGS along about fifty miles of existing highways and roads. The various routes assessed involved insufficient width, vertical clearances, or weight limits and would have required substantial road modifications and resulted in extensive impacts due to air quality, erosion, potential ESHA or vegetation impacts, and others.
- *Offloading in Oceanside Harbor:* SCE considered barging the RSGs to Oceanside Harbor and then transporting them by road to SONGS. For several reasons, however, this alternative would have resulted in more substantial impacts. There was just one location within the Harbor deemed suitable for delivery; however, the Oceanside Harbor District expressed concern about potential damage that the barge and the relatively heavy RSGs could cause to harbor infrastructure. Other concerns resulting in this option being infeasible include a steep road gradient from the Harbor, tight turning radii along the road, and the need to remove overhead obstacles along part of the route. Additionally, use of part of the Harbor for RSG staging, offloading, and storage would have resulted in temporary loss of public recreational uses within portions of the Harbor.

Based on the above, the Commission finds there are no feasible or less environmentally damaging alternatives to the Boat Basin dredging, and that the project's dredging component as proposed and conditioned therefore meets the second of the three Section 30233(a) tests.

3) *Have feasible mitigation measures been provided to minimize adverse environmental effects?:* As noted above in Section 4.5.1 (Marine Biological Resources), the proposed dredging would result in the loss of about 0.02 acres (about 900 square feet) of eelgrass. SCE has proposed 1:1 mitigation for this adverse effect by transplanting the affected eelgrass to two other areas within the boat basin that currently support, or have the potential to support, eelgrass beds. As stated previously, SCE's eelgrass mitigation plan includes monitoring measures, success criteria, and other standard elements of acceptable mitigation plans; however, to ensure the mitigation plan results in full conformity to applicable Coastal Act policies, the Commission is requiring additional measures through the imposition of **Special Condition 3**. Additionally, **Special Conditions 4-9**, which would require review and approval of SCE's sediment sampling and analysis results, submittal of a Spill Prevention and Response Plan, and others, will ensure that the project's adverse effects to water quality, eelgrass, and other marine resources will be adequately mitigated. Therefore, the Commission finds the project's dredging component as proposed and conditioned meets the third of the three tests of Section 30233(a).

For the reasons above, the Commission finds that the proposed dredging, as conditioned, is an allowable use, has no feasible less environmentally damaging alternatives, and includes feasible mitigation measures, and is therefore consistent with Coastal Act Section 30233(a).

PLACING MATS AND MOVING SAND AS FILL IN COASTAL WATERS

The transporter route along the beach includes crossing areas where the Santa Margarita River and several small creeks may flow to the ocean. The mouths of these waterbodies are generally closed to direct surface flow to the ocean due to seasonal sand buildup along the beach; however, they may open due to rain events or during very high tides or sand movement along the beach. Although SCE will attempt to schedule the beach transport during times when the waterbodies are not open to the ocean, project timing constraints may require transport during times when there is flowing water across the beach. If that occurs, SCE may need to move sand and place mats across the river mouth to support the weight of the transporter.

The transporter is able to cross water of up to about two feet in depth. If that is necessary, SCE has proposing placing modular, interlocking mats during any transporter water crossings. Each mat is about 10 feet wide and about 15 feet long. Configuration of the mats would vary based on channel characteristics, but would likely include about three rows of interlocked mats placed perpendicular to the water flow. Mats may be stacked to provide the necessary height and spaces would be left between the base mats to allow water to flow through them. If the channel is deeper than about two feet, SCE may delay the crossing until water depths decrease or may use a bulldozer to move sand within the channel to reduce depths. SCE would only move sand within the wetted area of the channel and below the mean high tide line.

Analysis of Placement of Mats and Fill for Conformity to Coastal Act Section 30233(a): Placing mats and moving sand would be considered placing fill in coastal waters and would therefore be subject to the Section 30233(a) three-part test to determine conformity to this Coastal Act provision:

1) *Is the activity an allowable use?:* Similar to the discussion above, potential fill in the form of mats placed in coastal waters and movement of sand would represent an "incidental public service" use, as the fill would be incidental to the overall project and would be temporary. The Commission therefore finds the activity would fall within one of the allowable use categories and meets the first of the three Section 30233(a) tests.

2) *Are there no feasible, less environmentally damaging alternatives?:* Again similar to the above discussion, the alternative routes evaluated through the CEQA process or through SCE's efforts have been shown to be infeasible or more environmentally damaging. Routes between the Boat Basin and SONGS that avoid the beach would cause more substantial impacts to ESHA and other coastal vegetation areas or would be infeasible due to steep grades, narrow roads, or low underpasses that would require substantial modifications to allow passage for the transporters. The Commission therefore finds there are no feasible, less environmentally damaging alternatives and the project therefore meets this second test.

3) *Have feasible mitigation measures been provided to minimize adverse environmental effects?:* SCE has included in its proposed project a number of measures to minimize potential adverse environmental effects that may be caused by mat or fill placement. If possible, SCE would transport the RSGs when the river mouth is closed, thereby avoiding the need to place fill in coastal waters. If the Santa Margarita River or other waterbodies are flowing, the RSGs would cross the mouth at low ebb flow to minimize the wetted area being crossed. If mats are necessary, SCE will put them in place immediately before the river crossing and will remove them immediately after the crossing. Using the tracked transporter instead of the Goldhofer along the beach will allow the RSGs to be transported much more quickly and will reduce the time the mats are in place. Additionally, as described in other sections of these Findings, the Commission is imposing through a number of **Special Conditions** measures that will eliminate or reduce potential impacts to coastal biological resources that could be caused by use of this route to transport the RSGs. For example, **Special Condition 10** would prohibit transport-related activities during the breeding and nesting season of sensitive bird species and **Special Condition 11** would require SCE to mitigate for any impacts to coastal vegetation. The Commission therefore finds that the project, as conditioned, would meet the third of the three tests of Section 30233(a).

For the reasons above, the Commission finds that the proposed placement of fill, as conditioned, is an allowable use, has no feasible less environmentally damaging alternatives, and includes feasible mitigation measures, and is therefore consistent with Coastal Act Section 30233(a).

Analysis of Conformity to Coastal Act Section 30233(b): Coastal Act Section 30233(b) requires that dredging and spoils disposal be done in a manner that avoids significant disruption to marine and wildlife habitats and to water circulation. It also provides that, when suitable, dredge spoils should be used for beach replenishment. For this proposed project, SCE would dredge about 4800 cubic yards of material from the Del Mar Boat Basin and proposes to dispose of it in a landfill. However, pursuant to **Special Condition 4**, if the sediment sampling shows that the material would be suitable for beach nourishment, SCE would then submit an application for a permit amendment proposing its use for beach nourishment.

Based on the above, the project as proposed would be implemented in a manner that avoids significant disruption to marine and wildlife habitat and to water circulation, and would therefore conform to Coastal Act Section 30233(b).

CONCLUSION

Based on the above, the Commission finds that the project, as conditioned, conforms to the applicable provisions of Coastal Act Sections 30233(a) and (b).

4.4.3 Spill Prevention and Response

Coastal Act Section 30232 states:

> *Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.*

The Coastal Act requires generally that spills be prevented and that effective containment and cleanup be provided for spills that do occur. The project includes the potential for oil and fuel spills due to its use of motor vehicles in and adjacent to coastal waters and other sensitive areas.

SCE has included with its proposed project a number of measures that reduce the potential for spills. The vessels used to transport the RSGs from Long Beach to the Boat Basin will be subject to vessel-specific spill prevention and response requirements. The use of the tracked transporter along the beach would significantly reduce the amount of time project activities would occur near coastal waters. Additionally, the USFWS has required SCE to conduct all fueling activities at least 100 feet from any watercourses. In addition to these measures, **Special Condition 8** would require SCE to submit prior to transporting the RSGs from Long Beach a *Spill Prevention and Response Plan* for Executive Director review and approval. The Plan is to include all feasible measures SCE will use to avoid spills and to respond to any spills that may occur. These measures include regularly inspecting equipment for leaks, maintaining an on-site spill response team, having spill response equipment (e.g., absorbent booms, sorbent pads, shovels, containers, etc.) on hand to respond to spills, implementing identified spill response procedures, including notifying appropriate agencies, and others.

CONCLUSION

Based on the above, the Commission finds that the project, as conditioned, conforms to the spill prevention and response provisions of Coastal Act Section 30232.

4.4.4 Protection of Native Terrestrial Vegetation

Coastal Act Section 30250(a) states, in relevant part:

> *New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources...*

Section 30250(a) requires, in part, that development not cause significant adverse effects to coastal resources. The proposed project's transport of heavy equipment in or adjacent to areas of coastal habitat could result in adverse impacts to those habitat areas due to crushing or trimming native vegetation to allow passage of the transporters and RSGs.

POTENTIAL IMPACTS TO NATIVE TERRESTRIAL VEGETATION

The proposed project is likely to adversely affect several types of native vegetation along the transport route. Some stretches of the existing roads to be used during the transport are not wide enough to allow passage of the transporters and RSGs, and adjacent vegetation will need to be trimmed or temporarily covered with mats. In some areas, the 10- to 16-foot road width will be increased with matting to about 25 to 30 feet. Additionally, in each of the two transition areas between Camp Pendleton roads and Interstate 5, SCE would place mats over a 60 X 100-foot area to allow the transporter to move between the two roadways. SCE has provided a "worst-case" estimate of the potential impacts, in which SCE assumes impacts to vegetation would extend about 50 to 60 feet from the road rather than the expected 25 to 30 feet. The "worst-case" estimates are:

- Coastal Sage Scrub: 2.13 acres
- Dune Scrub: 0.14 acres
- Native Grassland: 0.03 acres
- Other – including developed, ruderal, disturbed, exotics, and non-native grassland: 20.48 acres

The Commission staff biologist, through review of project-related documents and during an April 7, 2008 site visit along the proposed transportation route, has determined the areas of native vegetation that the project may affect are not environmentally sensitive habitat areas (ESHAs) as defined in Coastal Act Section 30107.5[11] and as regulated pursuant to Coastal Act Section 30240. Although these areas include some habitat types commonly determined to be ESHA elsewhere along the coast, the areas that could be affected by this project are sufficiently degraded or altered so as not to provide the level of habitat values associated with ESHA. For example, the project is expected to affect coastal sage scrub habitat, which the Commission has determined to be ESHA at other coastal locations. However, this coastal sage scrub habitat,

[11] Coastal Act Section 30107.5 states: "'Environmentally sensitive area' means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments."

which is located adjacent to existing roads within Camp Pendleton and along I-5, is degraded and does not appear to support sensitive species such as the California gnatcatcher. Nevertheless, as described below, SCE has proposed a number of measures to avoid and minimize impacts to terrestrial vegetation, the USFWS and MCBCP have required additional mitigation measures.

IMPACT AVOIDANCE AND MITIGATION

To address potential impacts to these areas, SCE has included with its proposed project several mitigation measures. A Biological Assessment prepared by MCBCP also included a number mitigation measures to be implemented as part of the proposed project. Additionally, the U.S. Fish and Wildlife Service, in its March 31, 2008 Informal Section 7 Consultation letter addressing potential impacts to listed sensitive species, found that with mitigation, the proposed project was not likely to adversely affect seven species that have the potential to exist in the area.[12] Key mitigation measures included by SCE or required by the MCBCP or USFWS are described below, along with recommended **Special Conditions** needed to ensure Coastal Act conformity:

- **Transporter Selection:** To reduce potential impacts to coastal dune habitat, SCE would use a tracked transporter instead of the Goldhofer along the beach portion of the transport route. The tracked transporter can travel the route in about one day, while the Goldhofer would take up to two to three weeks to travel between the Boat Basin and SONGS. Use of the tracked transporter will reduce the need for overnight layovers above the high tide line in areas that may be in or adjacent to terrestrial vegetation. If any layovers are needed (e.g., due to high water at the Santa Margarita River mouth), **Special Condition 7** would allow SCE to use only those areas that have been previously disturbed and are outside of coastal dune habitat.

- **Staging Area Selection:** SCE will use two staging areas, one near the Boat Basin and one near the Las Pulgas Gate, to store equipment and to transfer the RSGs from one transporter to another. Both staging areas will be within previously disturbed areas within Camp Pendleton.

- **Potential Avoidance:** SCE is continuing to work with CalTrans to obtain permission to use the Las Pulgas exit ramp from I-5 as part of the transport route. If the route includes the ramp, SCE will need just one, rather than two, transition points between Camp Pendleton and I-5, which would eliminate a 60 X 100-foot impact area, as well as impacts to vegetation along an approximate one-half mile stretch of road within Camp Pendleton.

- **Timing:** All transport-related activities will occur outside the breeding and nesting season of the California least tern, western snowy plover, and California gnatcatcher, which may use habitat near the transport route. **Special Condition 10** would ensure that project activities, such as vegetation clearing, site preparation, and transport, not occur between March 1 and August 31 of any year.

[12] As noted in Section 4.4.1 of these Findings, the seven species are California least tern (*Sternula antillarum browni*), tidewater goby (*Eucyclogobius newberryi*), San Diego fairy shrimp (*Branchinecta sandiegonensis*), Riverside fairy shrimp (*Streptocephalus woottoni*), coastal California gnatcatcher (*Polioptila californica californica*), and western snowy plover (*Charadrius alexandruinus nivosus*).

- **Biological Monitors:** SCE will hire biological monitors approved by the USFWS. Two monitors will be present at all times during transport and related activities. The monitors will conduct pre-transport surveys, provide training to project personnel, and will accompany the transporters to direct operations as necessary to avoid or minimize potential impacts. **Special Conditions 5-7** would ensure these measures are properly implemented. The monitors will also submit, at least 60 days prior to delivery of each RSG to the Boat Basin, a detailed *Project Route and Impact Plan* identifying the final transport routes, any overnight layover sites, any areas to be used for staging, equipment storage, laydown, grading, parking, etc., and will describe how these project-related activities will avoid any sensitive plant species known to exist near the transport route. **Special Condition 7** would require SCE to submit this Plan for Executive Director review and approval.

- **Compensatory Mitigation:** The biological monitors will also conduct post-transport surveys (one after transport of the first two RSGs for SONGS Unit 2 and another after transport of the two RSGs for SONGS Unit 3) to determine how much and what type of native habitat was affected. Based on those surveys, SCE will develop a compensatory mitigation plan that will provide no less than 1:1 replacement habitat for the affected areas. The mitigation plan is to identify mitigation sites, performance standards, mitigation timing, and funding from SCE to implement the plan. **Special Condition 11** would require SCE to submit this Plan for Executive Director review and approval.

CONCLUSION

With the avoidance and mitigation measures proposed by SCE and required through the USFWS, and with the **Special Conditions** noted above, the proposed project is not expected to cause significant adverse impacts to coastal resources associated with native vegetation. Therefore, based on the above, the Commission finds that the project, as conditioned, conforms to the applicable provisions of Coastal Act Section 30250(a).

4.4.5 Public Access

Coastal Act Section 30211 states:

> *Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.*

Coastal Act Section 30220 states:

> *Coastal areas suited for water-oriented recreational activities that cannot be readily provided at inland water areas shall be protected for such uses.*

The Coastal Act's access policies require in general that the public be provided with maximum feasible access to the shoreline and that development not interfere with access. Many of the proposed project activities would occur in and near the shoreline or along roads used in part for shoreline access. Old Highway 101, which would be used as part of the RSG transport route, is no longer an active highway, but is used for access to the Bluffs Campground at San Onofre State Beach and for access to SONGS. There is also a publicly-accessible bicycle path along a portion of this route. Portions of the transport route along the beach are within Camp Pendleton, which is generally restricted for military use only, so this part of the proposed project is not expected to cause adverse access impacts.

The proposed project may adversely affect public access to the shoreline in several ways:

- **Temporary traffic controls and reductions on Interstate 5:** Use of the proposed transport route would require temporary closure of the I-5 southbound lanes. Use of I-5 is necessary to allow the Goldhofer to avoid crossing a weight-restricted bridge on Old Highway 101. To minimize access-related impacts on I-5, RSG transport would occur between midnight and 6 A.M. To gain access to I-5, SCE would temporarily remove a section of fencing at two locations along I-5 and build temporary transitions between a Camp Pendleton road and I-5. SCE has requested permission from CalTrans to use an I-5 exit ramp near this proposed location, which would increase the distance the RSGs would travel on I-5, but would eliminate the need for one of the two transition points. SCE will also provide its traffic control plan to CalTrans and to the California Highway Patrol, which will provide for unimpaired emergency vehicle response during temporary closures or traffic disruptions.

- **Temporary traffic delays on the access road to San Onofre State Park campground:** The last segment of the transport route would be along about 5.5 miles of Old Highway 101 adjacent to I-5. This section of the highway serves as the access road to the Bluffs Campground at San Onofre State Park. Access would be limited during the time the Goldhofer is on Old Highway 101 because its width would prevent vehicles from passing. To reduce access impacts along this stretch of road, SCE is proposing as part of its project to use the road between December 1 and March 31 when the campground is available for day use only. Delays resulting from the transporter's use of this route are expected to be minimal – up to a few hours – and are not expected to cause major disruptions for public access.

To help ensure any access impacts resulting from use of this route are minimal, **Special Condition 12** would require SCE to post notices before starting transport activities. The notices are to describe the expected dates, times, location, and duration of transport that may affect public access. These notices would be subject to approval by both the Executive Director and the California State Parks Department. Additionally, to reduce the potential loss or reduction of access due to road damage that may be caused during transport, **Special Condition 13** would require SCE to reinforce culverts and drainpipes along the road to prevent their damage, and **Special Condition 14** would require SCE either to provide financial compensation to the State Parks Department or to repair any damage.

- **Increased worker traffic at SONGS during the SGR project:** SCE expects up to about 1,000 additional personnel at the SONGS site during various parts of the SGR project. To reduce the number of vehicles associated with this increase, SCE plans to stagger the work shifts so that the combined SONGS general workforce and the project-specific workforce have two work shifts per day staggered over three periods. Based on an expected vehicle occupancy rate of 1-2 workers per vehicle, SCE anticipates that each of the six shift changes will result in an increase of about 200 vehicles entering or exiting I-5 and the SONGS parking area. This would represent a relatively minor increase in the existing traffic along I-5. Anticipated peak hour traffic flows along I-5 and nearby affected roads range from about 12,000 vehicles per hour to more than 18,000 vehicles per hour. During all hours, Levels of Service along affected roads are expected to range from B to E.[13] The additional 200 vehicles per shift change would represent a small percentage of those traffic rates and are not expected to change the Levels of Service. With SCE's traffic control plan described above and the staggered work shifts, project-related traffic is not expected to result in substantial changes to traffic or to public access to the shoreline.

CONCLUSION

Based on the above, the Commission finds that the project, as conditioned, conforms to the public access provisions of the Coastal Act.

[13] The project FEIR provided an analysis of the traffic flow rates anticipated during the 2009-2010 project period based on consultation with County and CalTrans representatives. CalTrans uses a "Level of Service" (LOS) classification system to describe traffic capacity at different times along a given stretch of road. An LOS of A corresponds to relatively free-flowing traffic and an LOS of F corresponds to very low traffic speeds, high rates of delay, and similar traffic problems. Level E is considered the maximum design capacity.

4.4.6 Geological Resources

Coastal Act Section 30253 states, in relevant part:

> *New development shall:*
> *(1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.*
> *(2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.*

The SONGS site and transport route lies in the Peninsular Ranges geomorphic province of southern California. Bedrock at the site is the San Mateo Formation, a dense well-lithified sandstone of Pliocene to Pleistocene age, and, south of the Cristianitos Fault, the Monterey Formation, consisting of shale susceptible to landslides. These bedrock units are overlain by a series of marine and nonmarine terrace deposits approximately 50 feet thick, which have been dated by correlation with similar deposits containing mollusk fossils that are well dated at 80,000 to 180,000 years old (Fugro, 1975a, b).

The following geologic issues must be considered to find that the proposed development will minimize risk to life and property, and to assure stability and structural integrity at the site: seismic safety (including ground shaking, fault rupture, and liquefaction), bearing capacity of the transport route, and stability of slopes adjacent to the transport route. SCE addressed a number of these concerns through its *Geological and Structural Assessment Report – Steam Generator Replacement Project Transportation Route Interstate 5 / Old 101 Alignments, San Diego County, California* (January 14, 2008), and other reports, as described below.

SEISMIC HAZARDS

Like most of coastal California, the SONGS site and the transport route lies in an area subject to earthquakes. The area is approximately 8 km from the Newport-Inglewood-Rose Canyon fault system, 38 km from the Elsinore Fault, 73 km from the San Jacinto Fault, and 93 km from the San Andreas Fault, all of which have been designated "active" (evidence of movement in the past 11,000 years) by the California Geological Survey (Jennings, 1994). Several relatively nearby offshore faults, including the Coronado Bank Fault Zone, the San Diego Trough Fault Zone, the Thirty-Mile Bank Fault, and the Oceanside Thrust also may be active faults by this definition. Nevertheless, seismicity here has historically been relatively quiet compared to much of the rest of southern California, probably because of the relatively great distance of the San Andreas fault, which accommodates most of the plate motion in the area, and the relatively low slip rates of the closer faults (Peterson et al., 1996). A magnitude (M_L) 5.4 earthquake, associated with an unusually large swarm of aftershocks, occurred near the offshore San Diego Trough Fault Zone in 1986, but no other moderate or large ($> M_w$ 5.0) earthquake has occurred within 50 km in historic time.

The seismic shaking hazard map of California (Peterson et al., 1999) portrays the San Onofre area as a region of "low" seismic shaking potential, with a 10% chance of exceeding approximately 0.3 g in 50 years. For comparison, the Big Sur coast is the only other part of coastal California having a comparably low ground shaking potential according to this assessment. The U.S. Geologic Survey's latitude-longitude earthquake ground motion hazard look-up page (http://geohazards.cr.usgs.gov/eqint/html/lookup.shtml) similarly reports an expected peak ground acceleration of 0.32 g (10% chance of exceedance in 50 years). The probabilistic peak ground accelerations and spectral accelerations for the San Onofre area, assuming firm bedrock conditions, are as follows (determined from the USGS lookup page):

	10% in 50 yr	**5% in 50 yr**	**2% in 50 yr**
PGA	0.32 g	0.47 g	0.67 g
0.2 sec SA	0.74	1.12	1.50
0.3 sec SA	0.64	1.06	1.36
1.0 sec SA	0.28	0.38	0.54

This assessment, however, is based only on current understanding of the likelihood of earthquakes of varying intensities on nearby faults. A deterministic study undertaken at the time of the licensing permit application for SONGS Units 2 and 3 (U.S. Nuclear Regulatory Commission, 1981) identified an earthquake on the Newport-Inglewood-Rose Canyon fault system, centered on the portion of the fault nearest to the SONGS site, to be the seismic event with the greatest potential ground shaking for the SONGS site. Other faults, such as the San Andreas Fault, although capable of producing larger earthquakes than the Newport-Inglewood-Rose Canyon fault system, are so far distant from the site that ground shaking would be less than an earthquake on the Newport-Inglewood-Rose Canyon fault system.

At the time of the licensing of SONGS 2 and 3 in the 1970s and 1980s, the applicant combined empirical data from recent earthquakes (especially the 1979 Imperial Valley earthquake) and theoretical models to estimate the ground shaking expected at the SONGS site as a result of the design basis earthquake (M_S = 7.0 at 8 km from the site). The theoretical estimate was arrived at by 1) characterizing the nature of the fault slip in terms of fault type, rupture velocity, dynamic stress release, and duration of slip; 2) propagating the energy released in (1) through the earth structure between the fault and the site; and 3) calculating actual ground motion by mathematically combining (1) and (2). The NRC and its consultants reviewed this procedure, and required some modifications to the model. The applicants responded with a model that assumes a rupture distance of 40 km, maximally focused at the site, with a fault offset of 130 cm and a rupture velocity equal to 90% of the shear wave velocity. The mean spectra peak has a peak acceleration of 0.31 g. After comparison with empirical models, and in order to build in conservatism for inaccuracies in the model, the NRC approved the calculated spectra multiplied by a factor of about 2. The NRC approved spectra thus is pegged at a high-frequency peak acceleration of 0.67 g (U.S. Nuclear Regulatory Commission, 1981).

As a result of research undertaken since the licensing of SONGS 2 and 3, new information is available on the geologic environment offshore of the SONGS site that indicate that the design basis earthquake (MS = 7.0 at 8 km, with high-frequency ground accelerations pegged at 0.67 g) may underestimate the seismic risk at the site.

During the permitting process for the Independent Spent Fuel Storage Installation at the SONGS site, Dr. Mark Legg expressed concerns related to the seismic environment at the site. As quoted in the staff report:

> *Newer attenuation relations based upon recent large earthquake activity including the 1989 Loma Prieta, California; 1992 Landers, California; 1999 Chi-Chi, Taiwan; 1999 Izmit, Turkey; and 1995 Kobe, Japan, and moderate earthquakes including the 1994 Northridge, California; 1987 Whittier Narrows, California; 1983 Coalinga, California; and 1984 Morgan Hill, California are more accurate in estimating ground motions than the relationships used for the Safety Evaluation conducted in the late 1970s (Abrahamson and Silva, 1997; Boore et al., 1997; Campbell, 1997; Sadigh et al., 1997).*

This statement is borne out by similar data from even smaller earthquakes such as the 2000 Napa earthquake. However, the SONGS design spectra exceeds the spectral accelerations expected at the site from the de-sign-basis earthquake according to the attenuation models cited by Dr. Legg.

Dr. Legg also pointed out that:

> *…it is now recognized that major detachment fault systems in the region are reactivated as thrust faults, some blind (not reaching the surface). The major Oceanside detachment/thrust system underlies the San Onofre Nuclear Generating Station (SONGS). Consequently, large thrust or oblique-reverse earthquakes on this system may generate shaking levels in excess of the design level of SONGS units 2 and 3 (Bohannon et al., 1990; Bohannon and Geist, 1998; Crouch and Suppe, 1993; Grant et al., 1999; Legg et al., 1992; Nicholson et al., 1993; Rivero et al., 2000).*

He goes on to indicate:

> *…the reverse fault character of microearthquakes recorded along the Cristianitos fault trend in the mid-1970s and reactivation of minor faulting uncovered during site excavations is consistent with overall reactivation of ancient normal fault structures by a new stress regime involving northeast-directed shortening or transpression. This assertion has now been confirmed by recent geologic studies in the neighboring offshore region…*

and that, because of the dipping nature of these thrust faults, in an earthquake involving them:

> *… the SONGS site would not be 5-7 km from the epicentral zone, but instead directly above the potential fault rupture plane. Estimation of strong motion should use an epicentral distance of zero (0).*

The studies cited by Dr. Legg, as well as other studies, do suggest that a complex system of low-angle faults, which appear to be old normal faults (related to crustal extension) reactivated as thrust faults (related to crustal shortening) lie offshore of the SONGS site. The thrust character of these faults may be related to the bend in the Newport-Inglewood-Rose Canyon fault system offshore of Carlsbad. In this area Kuhn and others (Kuhn et al., 2000; Shlemon, 2000) have documented complex fault features that appear to be related to thrusting. It is probably significant that the 1986 Oceanside earthquake (ML) 5.4, which was centered on one of these low-angle faults, showed a thrust fault mechanism.

Thus, there appears to be credible evidence that, in addition to the strike-slip faulting recognized at the time of the SONGS licensing review, thrust faults exist in the area offshore of the SONGS site that might interact with the Newport-Inglewood-Rose Canyon fault system in a complex way during an earthquake. If these faults are active or potentially active, the increase in potential fault rupture area has, at a minimum, the potential to increase the magnitude of an earthquake on the integrated fault system. Geologists' understanding of this area is rapidly evolving, and there are few constraints on the parameters needed to assess the increase in earthquake risk (such as slip rate on each of the potentially active faults, segmentation of the faults, and potential for cascading failure between fault segments). One of the few published estimates is that of Shaw and his students (Rivero et al., 2000), who hypothesize that the combined system may be capable of an earthquake ranging from MW 7.1 to 7.6, depending on which sets of faults are involved in the earthquake. Shaw's tectonic model for the area is, however, quite controversial (Jones, USGS, pers. comm., 2001). Commission staff consulted with seismologists and geologists at the U.S. Geological Survey, California Division of Mines and Geology, California Seismic Safety Commission, within academia, and at private consulting firms. Although there was near unanimous recognition that there is an increased earthquake risk given our emerging understanding of the complexities of the region relative to a simple strike-slip model used in the SONGS seismic hazard assessments, no one could assess the potential ground shaking that might be expected at the SONGS site.

The Commission thus finds that there is credible reason to believe that the design basis earthquake approved by the NRC at the time of the licensing of SONGS 2 and 3—a magnitude 7.0 earthquake on the Newport-Inglewood-Rose Canyon fault system 8 km from the site, resulting in ground shaking with a high frequency component peaking at 0.67 g—may underestimate the seismic risk at the site. This does not mean that the facility is unsafe—although the design basis earthquake may have been undersized, the plant was engineered with very large margins of safety, and would very likely be able to attain a safe shutdown even given the larger ground accelerations that might occur during a much larger earthquake. Assessing the safety of the SONGS facility is not under consideration with this application.

The applicant provided a geotechnical report dated May 18, 2006 that briefly addresses seismic hazards in the project area. In addition to ground shaking, discussed above, the report noted that there are no known active faults crossing the transport route. Accordingly, the potential for surface rupture is negligible. In addition, due to both the dense nature of the marine terrace deposits along the route and the low ground water table, the potential for liquefaction during an earthquake is negligible. The Commission's staff geologist concurs with these conclusions. If an earthquake of significant magnitude occurs during transport, workers will have been trained on how to protect themselves, and areas of concern along the transport path will be re-evaluated prior to resuming transport.

SLOPE STABILITY

Several coalescing large active landslides affect the coastal bluff (Kuhn, 2000; Kuhn and McArthur, 2000) west of the transport route. The headscarps of these landslides are several hundred feet from the transport route, however, and, as concluded in the May 18, 2006 geotechnical report, pose little hazard to the transport route.

Fill slopes along the transport route also present the possibility of slope instability. These were evaluated by quantitative slope stability analyses of two locations (Horno Canyon and Comfort Station 7) in SCE's January 14, 2008 geotechnical report. Direct shear test performed on remolded fill material collected at the site provided shear strength parameters, which were incorporated into the slope stability analyses. If the transporter is kept 35 feet from the slope at Comfort Station 7 (i.e., the current road alignment), a factor of safety of greater than 1.5 is maintained even when the slopes are loaded by the weight of the transporter and RSG. A pseudo-seismic slope stability analysis demonstrated that even when loaded during an earthquake, the factor of safety exceed the industry standard of 1.1.

BEARING CAPACITY OF THE TRANSPORT ROUTE

A preliminary inspection of the road conditions along San Onofre State Beach was reported on in a May 15, 2006 report by Dale Hinkle. A more thorough study, which included subsurface investigations at a number of locations, is contained in SCE's January 14, 2008 report. Both reports indicate the need for reinforcing some culvert crossings. In addition, the January 2008 report indicated that a 300-foot section of roadway near one of the borings will require the use of steel plates or additional aggregate overlay. Design criteria for shoring systems for the culvert crossings are presented in the report. To ensure the necessary level of structural stability, **Special Condition 13** would require SCE to install the various steel plates and shoring systems as described in its January 2008 report.

When crossing streams or estuaries, the transporter will travel on the HDPE mats. In waters greater than two inches, the mats will be placed on additional mats. The combined weight of the RSG and transporter would be well over 600 tons. The applicants have submitted information showing that the bearing capacity of wet sand is between 4,000 and 6,000 psf.[14] The weight of the equipment would be distributed over an area of mats so that the weight per square foot of

[14] Per New York State Building Construction Code (1977), the Uniform Building Code (1964), and the National Board of Underwriters (1967).

sand would be within the expected bearing capacity and is therefore expected to provide a stable base for the transport.

CONCLUSION

The Commission finds that as proposed and conditioned, the project will assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability and is therefore can be carried out consistent with Coastal Act Section 30253(2).

5.0 CALIFORNIA ENVIRONMENTAL QUALITY ACT

In September 2005, the California Public Utilities Commission certified an Environmental Impact Report for the proposed project. In addition, Section 13096 of the Commission's administrative regulations requires Commission approval of CDP applications to be supported by a finding showing the application, as modified by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Public Resources Code Section 21080.5(d)(2)(A) prohibits approval of a proposed development if there are feasible alternatives or feasible mitigation measures available that would substantially lessen any significant impacts that the activity may have on the environment.

As discussed above, the proposed project is consistent with the policies of the Coastal Act. Pursuant to the review conducted by the California Public Utilities Commission, the project includes all available and feasible measures to avoid or minimize significant adverse environmental impacts. There are no feasible alternatives or feasible mitigation measures available that would substantially lessen any significant adverse impact that the activity would have on the environment. Therefore, the Commission finds that the proposed project, as conditioned, is consistent with the requirements of CEQA.

APPENDIX A: SUBSTANTIVE FILE DOCUMENTS

California Coastal Commission. *E-00-001-A1, Final Adopted Findings for Southern California Edison transport of SONGS Unit 1 Reactor Vessel*, February 7, 2003.

California Energy Commission. *AB 1632 Nuclear Power Plant Assessment Study Plan*, January 30, 2008.

California Public Utilities Commission. *Final Environmental Impact Report – San Onofre Nuclear Generating Station (SCH #2004101008)*, September 2005.

Fugro, I. *Geomorphic analysis of terraces in San Juan and Bell Canyons, Orange County, California*, p. 11, Fugro, Inc., Long Beach, California, 1975.

Fugro, I. *Summary of geomorphic and age data for the first emergent terrace (QT_1) at the San Onofre Nuclear Generating Station*, p. 30, Fugro, Inc., Long Beach, California, 1975.

Hawkins, H.G. *Geologic feasibility study, replacement steam generator, transportation route segments H & I, San Onofre Nuclear Generating Station, County of San Diego, California: San Diego, California*, p. 6, Southern California Edison Company, Engineering and Technical Services, Civil/Structural/Geotechnical Group, May 18, 2006.

Hinkle (GE 402), D. Heavy *haul south of plant, Crossing of canyon fill south of Comfort Station 7, Unit 1 decommissioning--San Onofre Nuclear Generating Station*, p. 2, Dale Hinkle, P.E. Inc, Irvine, California, 2003.

Hinkle (GE 402), D. *Review of SONGS 2 and 3 heavy haul transport route, Segment I -- SONGS south gate to south edge of San Onofre State Beach*, page 3, Dale Hinkle, P.E. Inc, Irvine, California, May 15, 2006.

Jennings, C.W. *Fault activity map of California and adjacent areas: Geologic Data Map No. 6*, p. 1, California Division of Mines and Geology, Sacramento, California, 1994.

Kuhn, G.G. *Sea cliff, canyon, and coastal terrace erosion between 1887 and 2000: San Onofre State Beach, Camp Pendleton Marine Corps Base, San Diego County, California*, in Legg, M.R., Kuhn, G.G., and Shlemon, R.J., eds., *Neotectonics and Coastal Instability: Orange and Northern San Diego Counties, California, Volume 1*, p. 31-87, AAPG-Pacific Section and SPE-Western Section, Long Beach, California, 2000.

Kuhn, G.G., and McArthur, D.S. *Beaches and sea cliffs of central and northern San Diego County*, in Legg, M.R., Kuhn, G.G., and Shlemon, R.J., eds., *Neotectonics and coastal instability: Orange and northern San Diego Counties, California, Volume 1*, p. 104-122, AAPG-Pacific Section and SPE-Western Section, Long Beach, California, 2000.

Marine Corps Base Camp Pendleton, *Final Biological Assessment*, August 2007.

Peterson, M., Beeby, D., Bryant, W., Cao, C., Cramer, C., Davis, J., Reichle, M., Saucedo, G., Tan, S., Taylor, G., Toppozada, T., Treiman, J., and Wills, C. *Seismic shaking hazard maps of California, Map Sheet 48*, California Division of Mines and Geology, Sacramento, California, 1999.

Peterson, M.D., Byrant, W.A., Cramer, C.H., Cao, T., Reichle, M.S., Frankel, A.D., Leinkaemper, J.J., McCrory, P.A., and Schwarta, D.P. *Probabilistic seismic hazard assessment for the state of California*, p. 33, California Division of Mines and Geology, Sacramento, California, 1996.

Southern California Edison. *Coastal Development Permit Application – San Onofre Nuclear Generating Station (SONGS) Replacement Steam Generator Project*, with Appendices, January 2008.

Southern California Edison. *Geological and structural assessment report, steam generator replacement project, transportation report, Interstate 5/Old 101 alignments, San Diego County, California*, p. 104, Southern California Edison Company, Power Production Department, Engineering and Technical Services, San Diego, California, 2008.

U. S. Fish and Wildlife Service. *Informal Section 7 Consultation on Replacement Steam Generator Transport through Marine Corps Base Camp Pendleton, San Diego County, by Southern California Edison*, March 31, 2008.

U.S. Nuclear Regulatory Commission, *Safety evaluation report related to the operation of San Onofre Nuclear Generating Station, Units 2 and 3, Docket numbers 50-361 and 50-362, Southern California Edison Company, et al.*, U.S. Nuclear Regulatory Commission, Office of Nuclear Reactor Regulation, Washington, D.C., 1981.

EXHIBIT No. 1
Application No.
E-08-001
Location Map

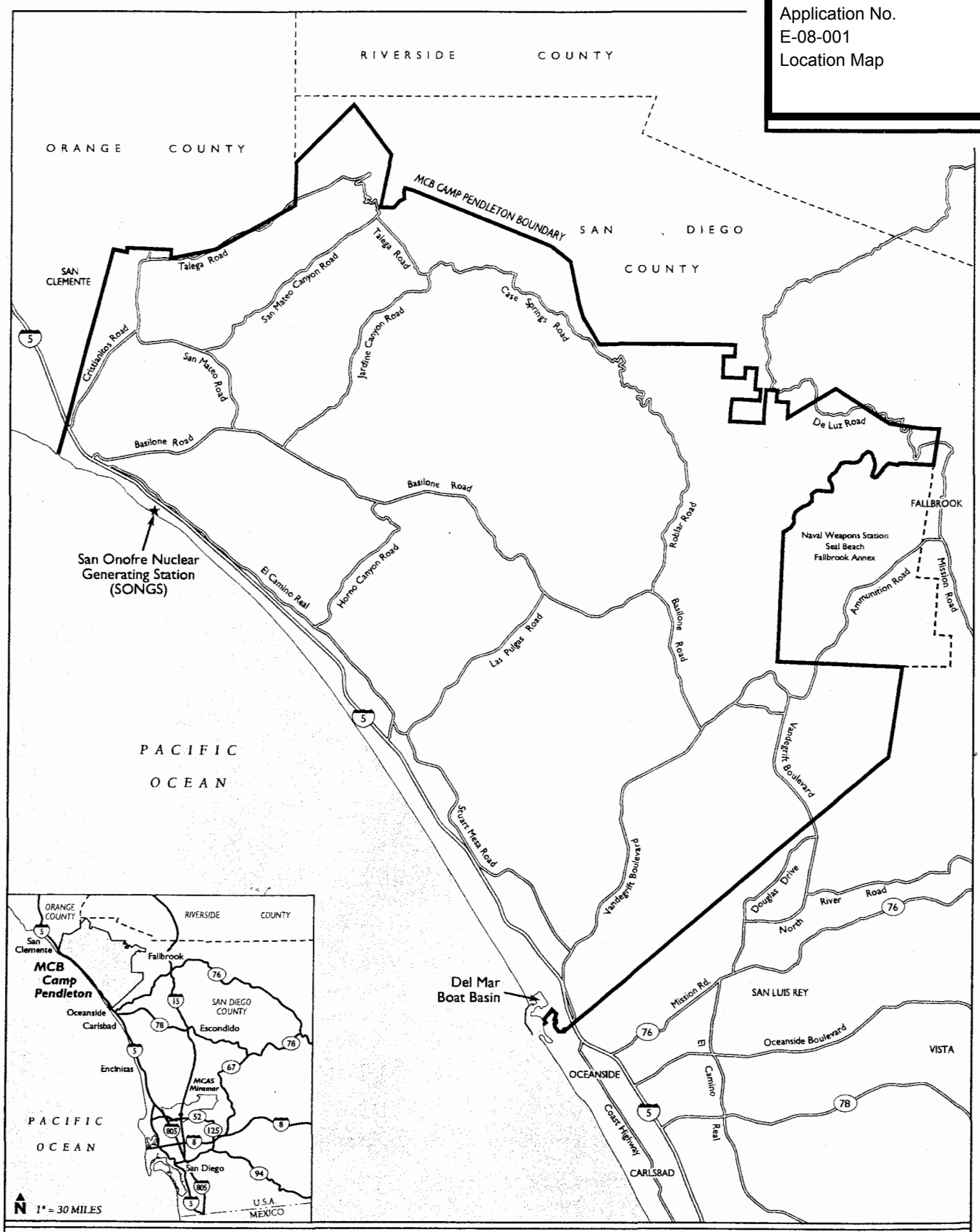

Figure 1-1
Regional Location of SONGS and MCBCP

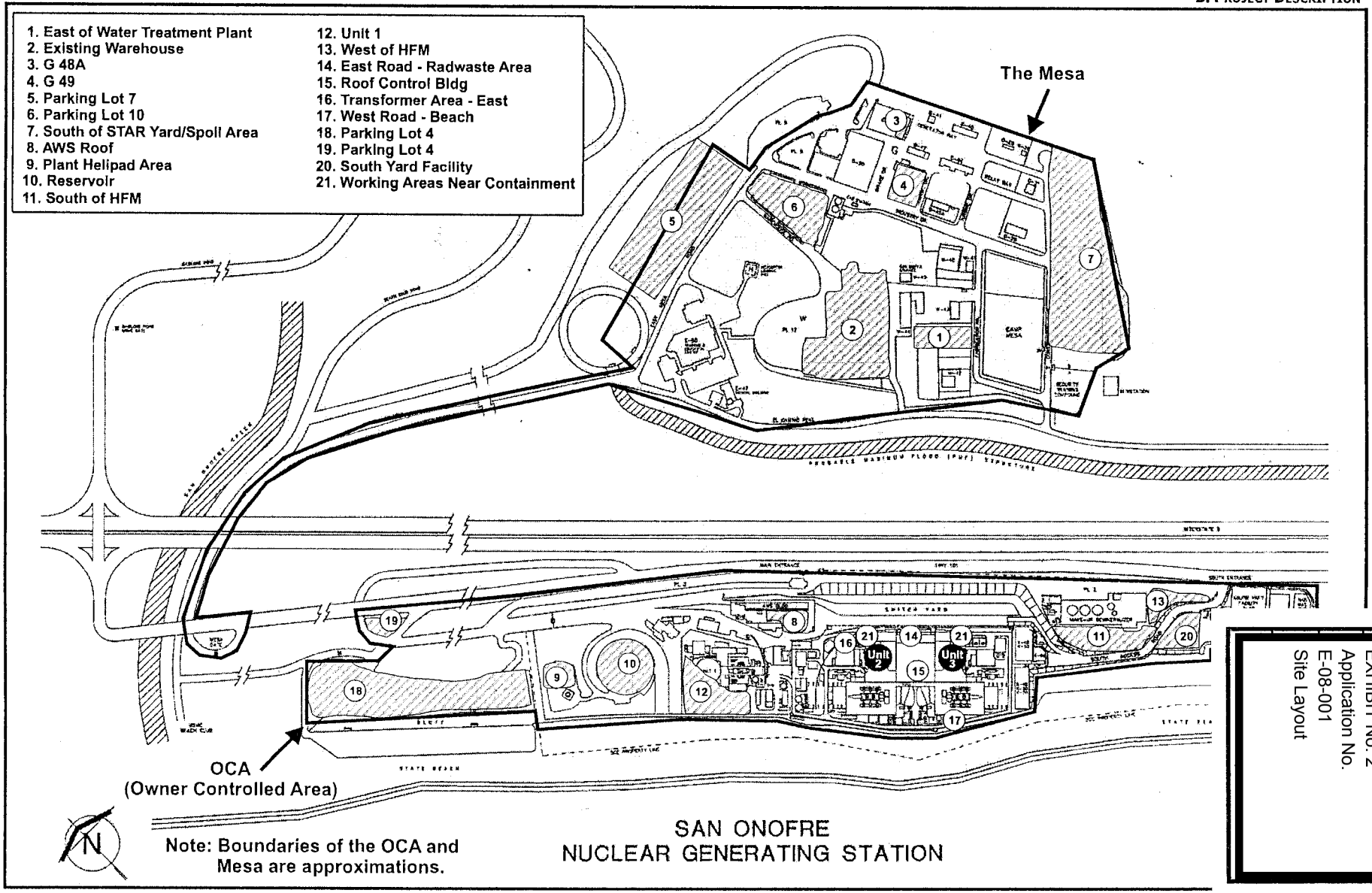

EXHIBIT No. 2
Application No.
E-08-001
Site Layout

Aspen Environmental Group	SONGS Site Plan	SONGS Steam Generator Replacement Figure B-2

EXHIBIT No. 3
Application No.
E-08-001
Boat Basin

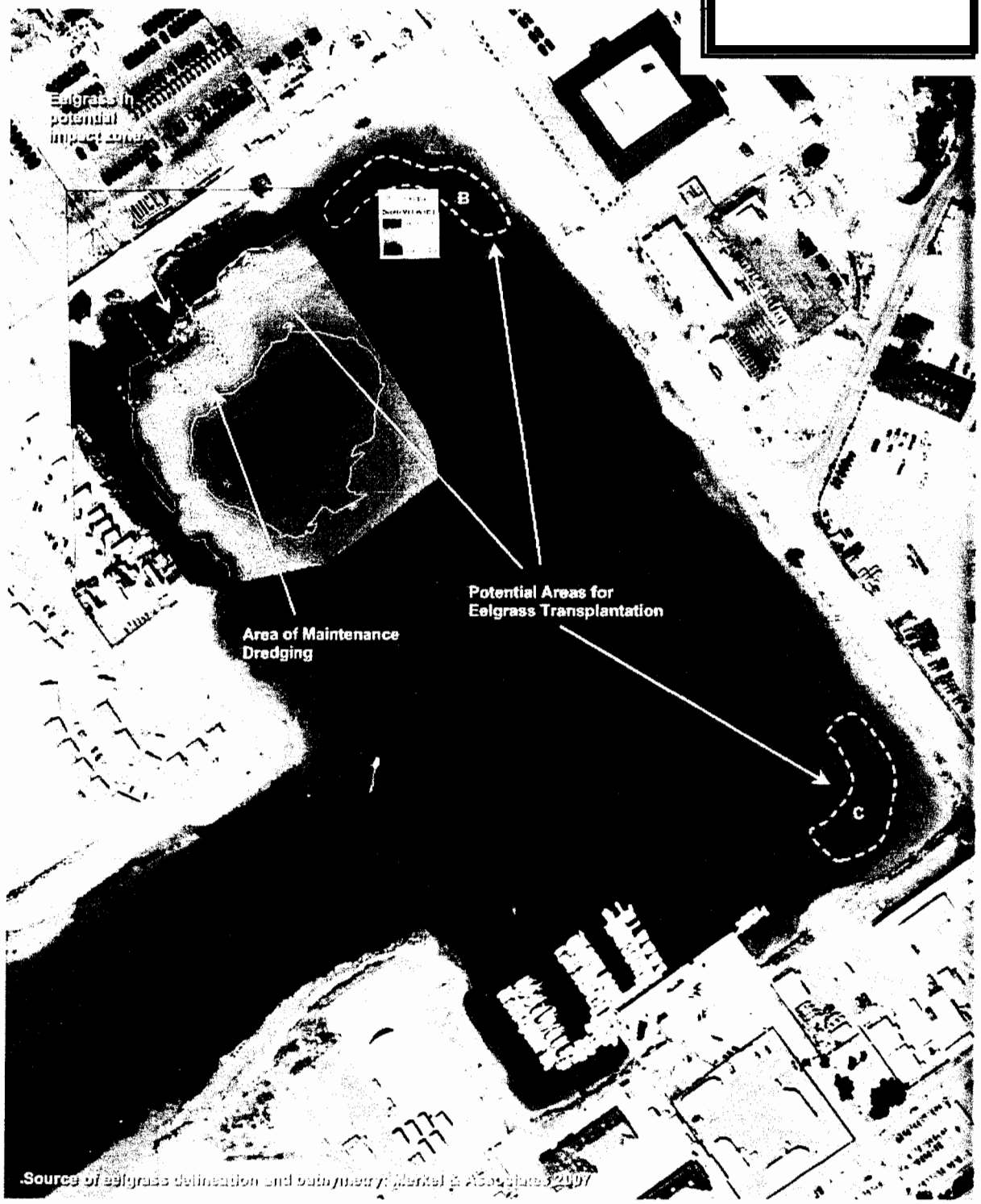

Figure 1
Dredging Area and Eelgrass Impact and Mitigation Areas

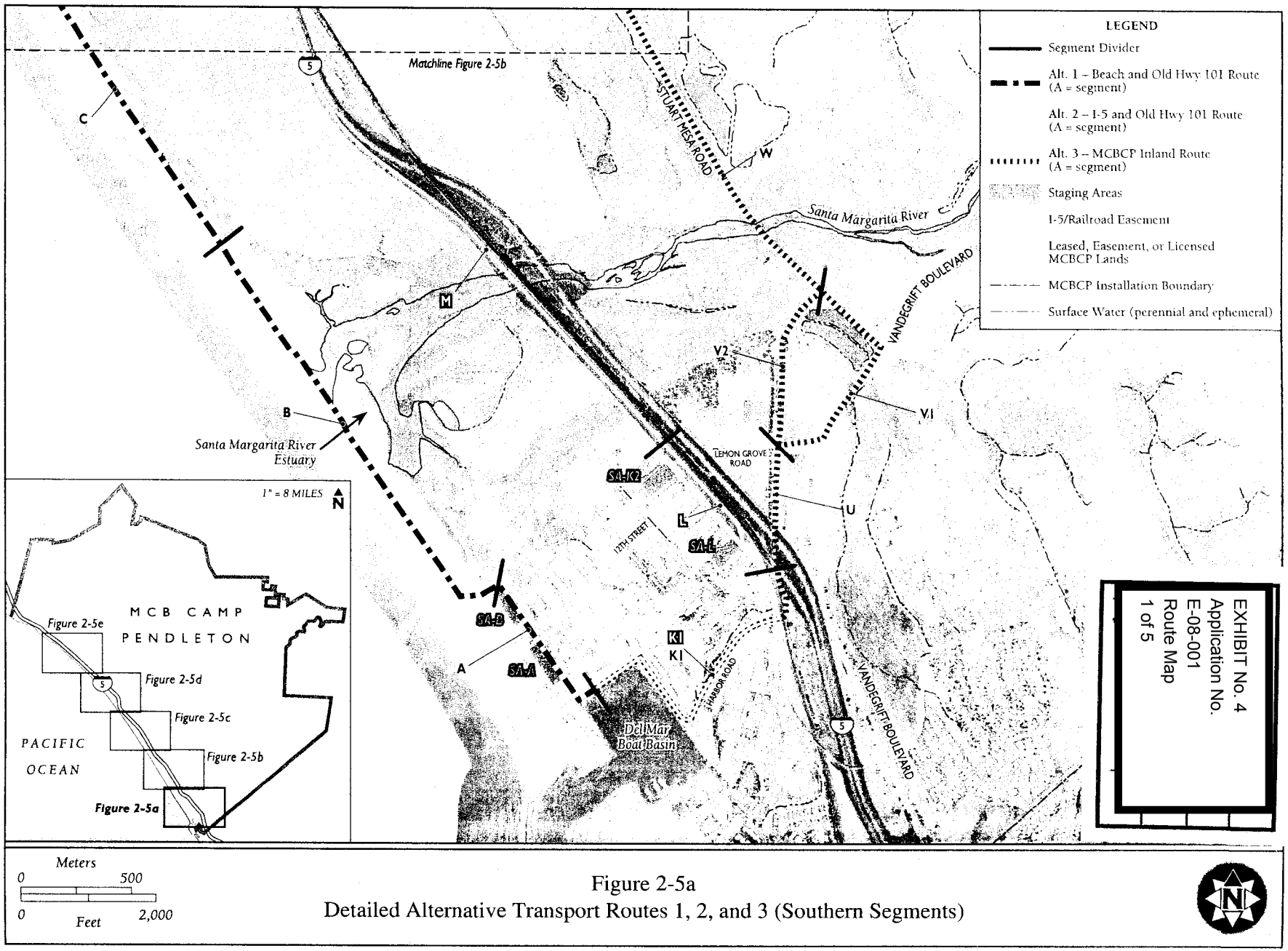

Figure 2-5a
Detailed Alternative Transport Routes 1, 2, and 3 (Southern Segments)

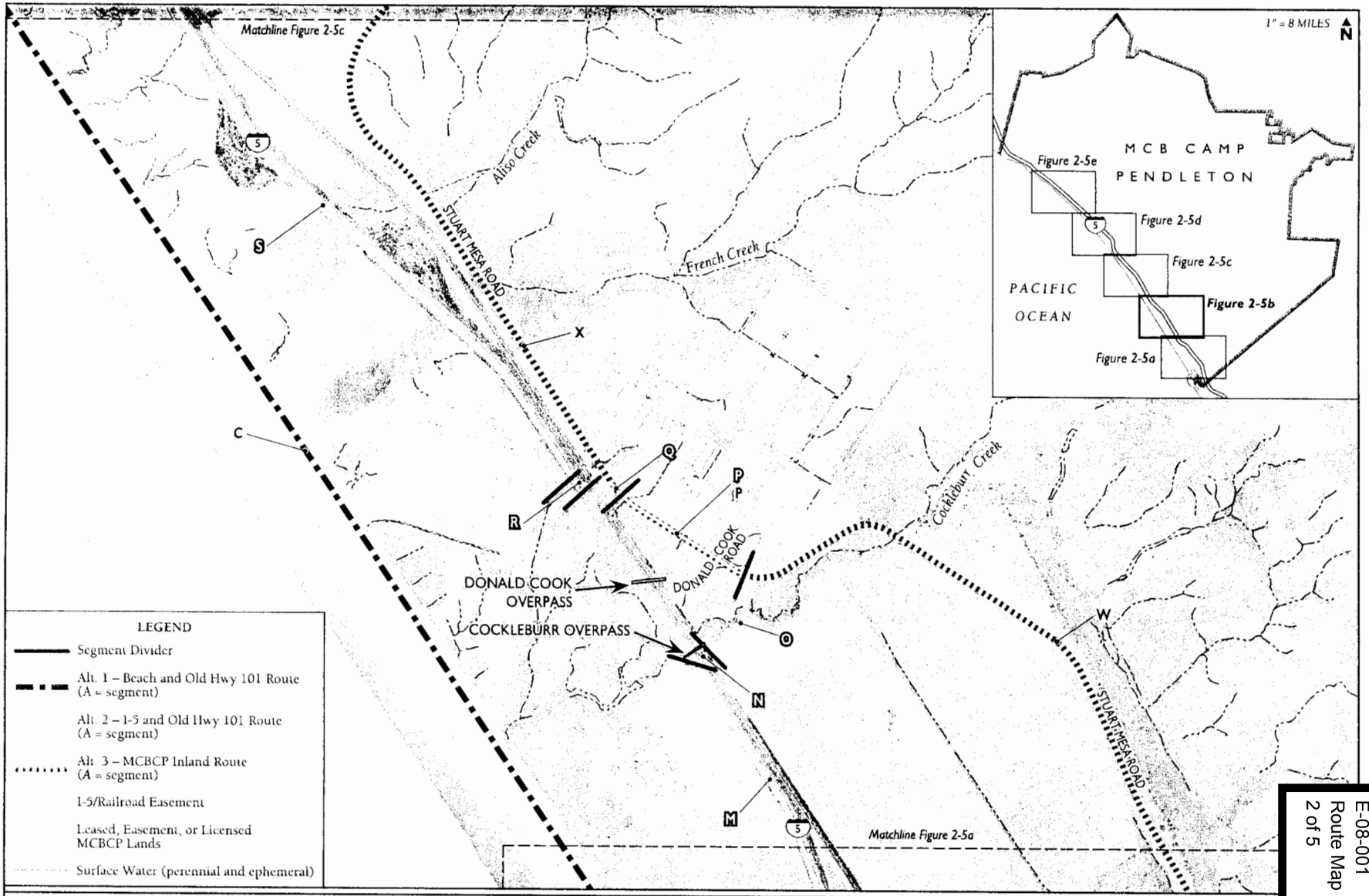

Figure 2-5b
Detailed Alternative Transport Routes 1, 2, and 3 (Southern-Central Segments)

EXHIBIT No. 4
Application No.
E-08-001
Route Map
2 of 5

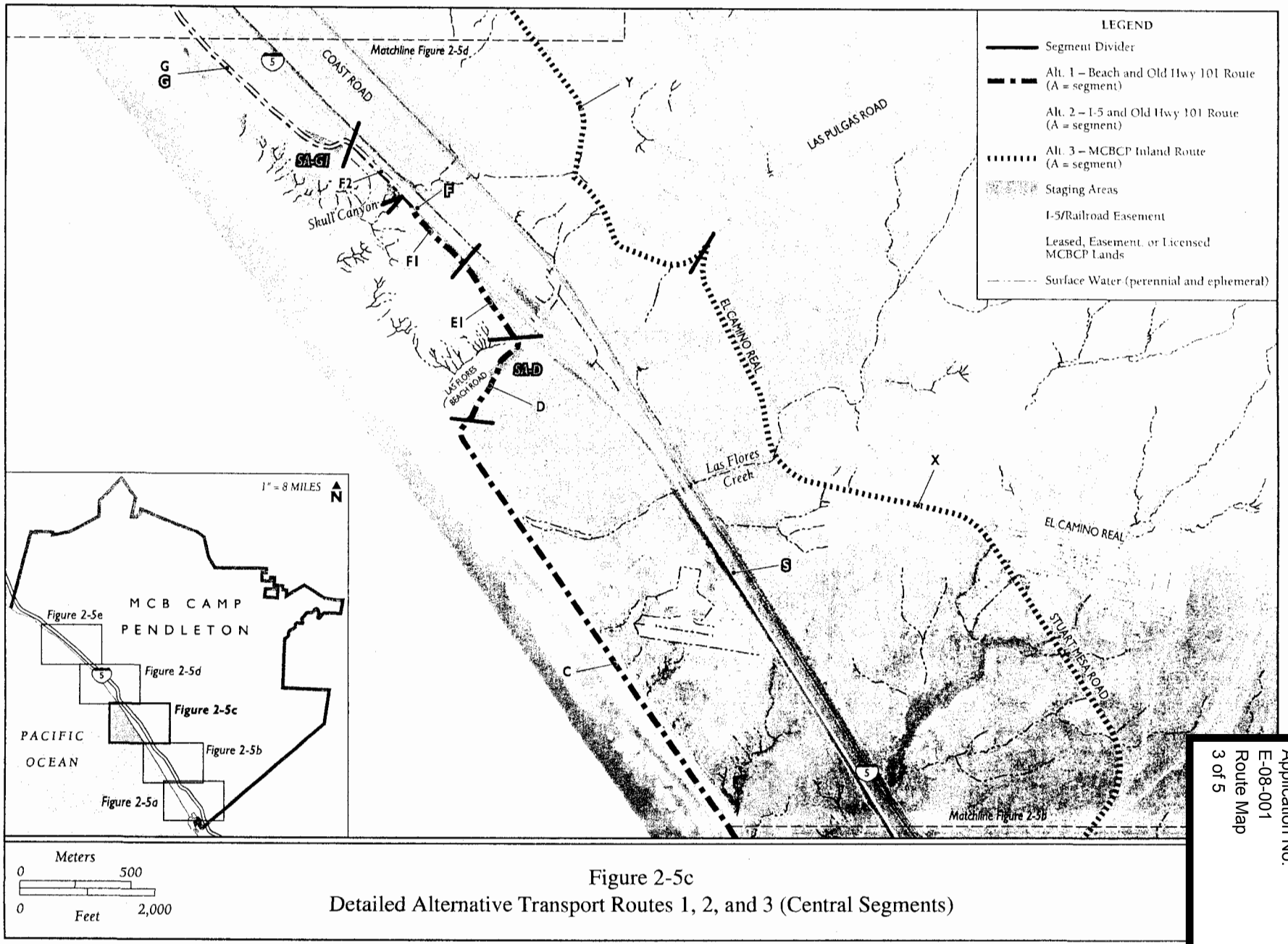

Figure 2-5c
Detailed Alternative Transport Routes 1, 2, and 3 (Central Segments)

EXHIBIT No. 4
Application No.
E-08-001
Route Map
3 of 5

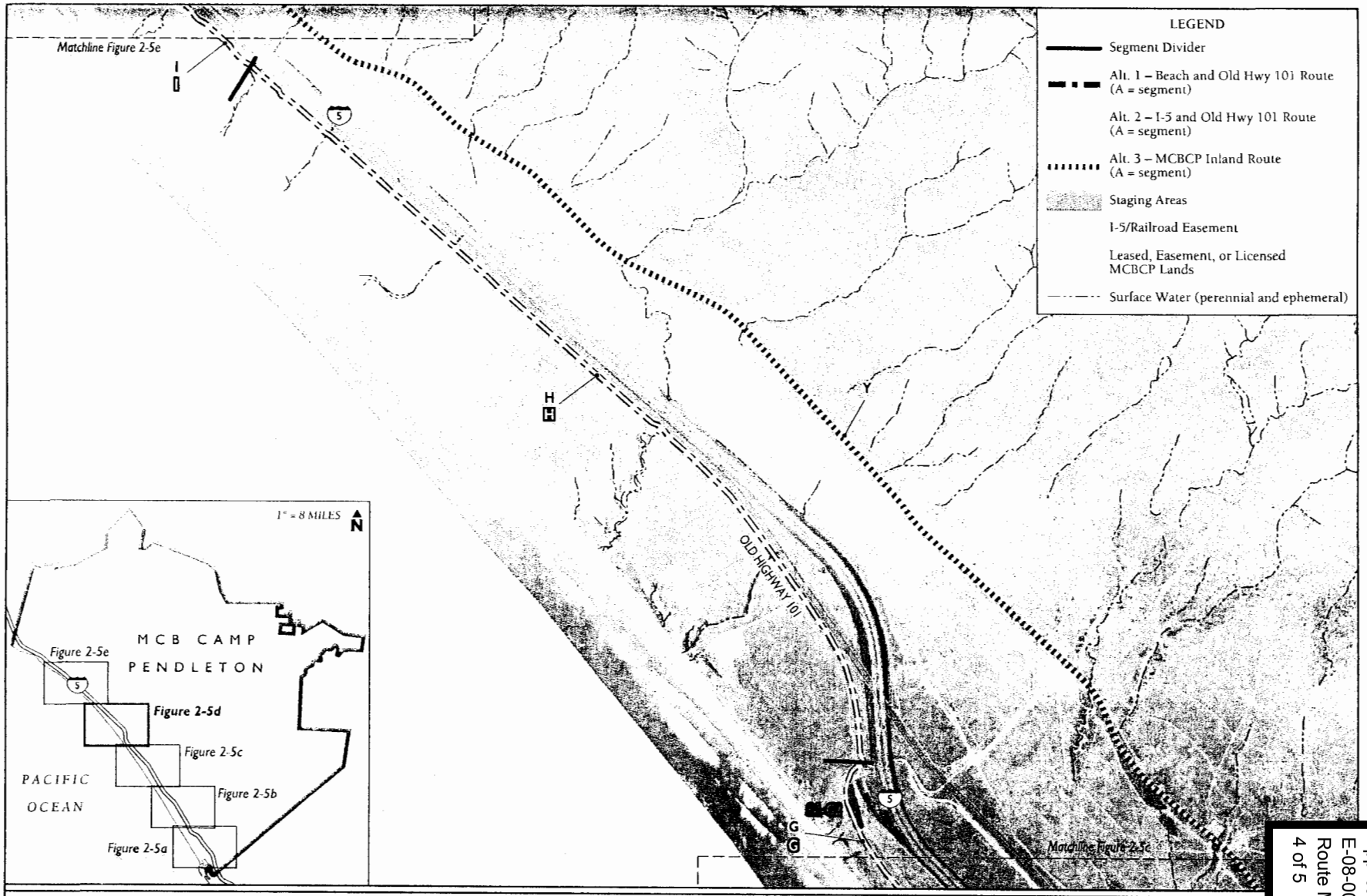

Figure 2-5d
Detailed Alternative Transport Routes 1, 2, and 3 (Northern-Central Segments)

EXHIBIT No. 4
Application No.
E-08-001
Route Map
4 of 5

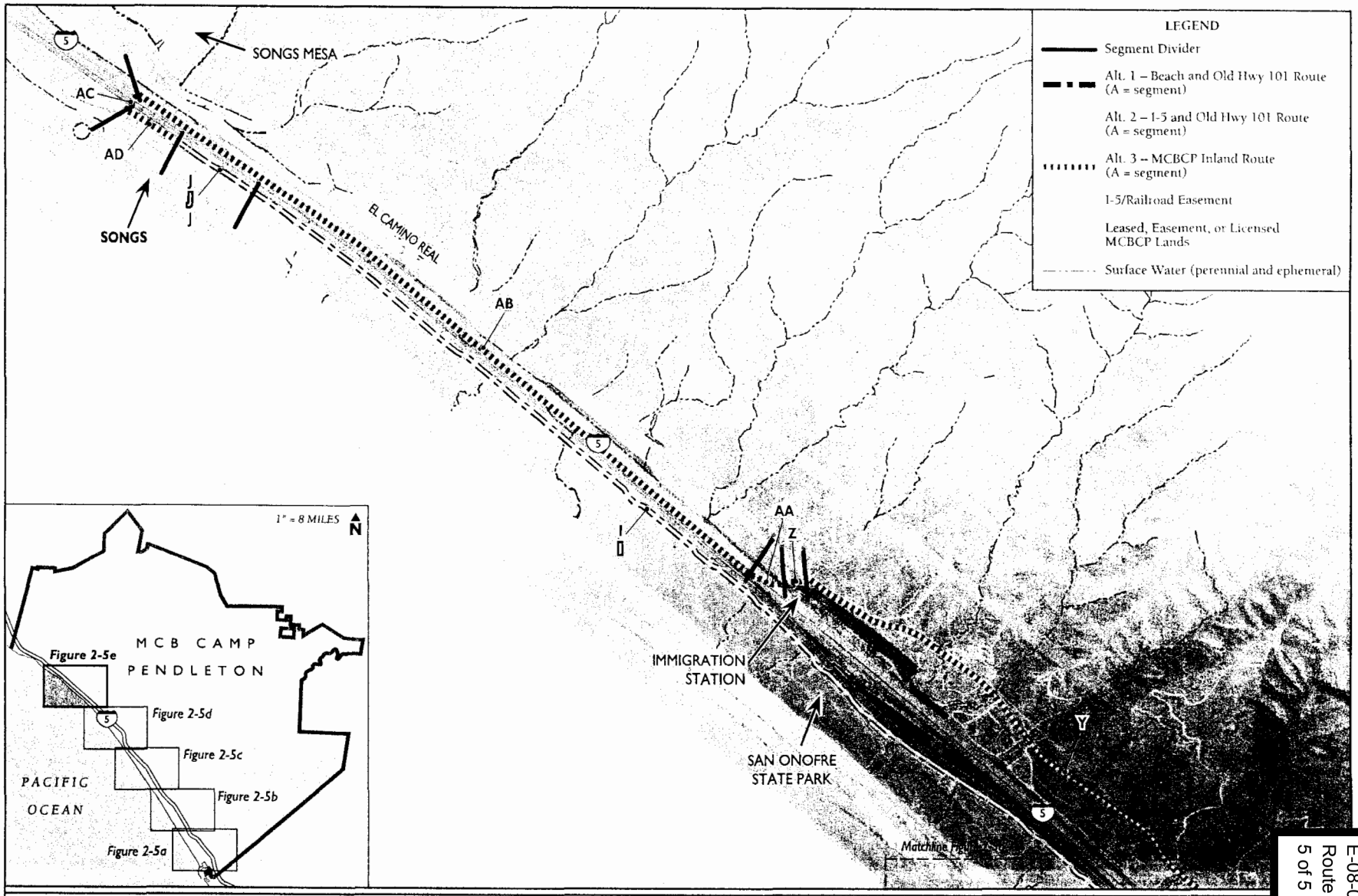

Figure 2-5e
Detailed Alternative Transport Routes 1, 2, and 3 (Northern Segments)

EXHIBIT No. 4
Application No.
E-08-001
Route Map
5 of 5

Th 12a

ADDENDUM TO COMMISSION PACKET

FOR

ENERGY, OCEAN RESOURCES and

FEDERAL CONSISTENCY

For Thursday, May 8, 2008

Item No. Th 12a

E-08-001
Southern California Edison Co.

- Staff Modifications
- Ex Parte Communications
- Correspondence

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Th12a

May 7, 2008

TO: Coastal Commissioners and Interested Parties

FROM: Alison J. Dettmer, Deputy Director, Energy, Ocean Resources, and Federal Consistency Division
Tom Luster, Environmental Scientist, Energy, Ocean Resources, and Federal Consistency Division

SUBJECT: Addendum to E-08-001 – Southern California Edison, San Onofre Nuclear Generating Station (SONGS) Steam Generator Replacement

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This addendum includes several recommended modifications to the Revised Findings, correspondence received pursuant to those Findings, and Commissioner *ex parte* forms. The modifications are based largely on changes requested in the attached April 29, 2008 letter from Southern California Edison (SCE).

RECOMMENDED CHANGES TO SPECIAL CONDITIONS – staff's recommended changes are shown below in ~~strikeout~~ and **bold underline**:

Page 5, **Special Condition 3**:

> **"Eelgrass:** ***~~At least 60 days p~~Prior to dredging***, the Permittee shall mitigate impacts to eelgrass as specified in the National Marine Fisheries Service *Southern California Eelgrass Mitigation Policy* (initially adopted July 31, 1991, modified February 27, 2008) and as described in SCE's *Eelgrass –Transplantation Plan for the SONGS Steam Generator Replacement Project on Marine Corps Base Camp Pendleton* (December 27, 2007). Additionally, ***prior to dredging***, the Permittee shall submit to the Executive Director documentation that the affected eelgrass has been transplanted as described in the above-referenced plan."

Page 6, **Special Condition 7**:

> **"Project Route and Impact Plan:** ***At least 60 days prior to transporting the RSGs from Long Beach to the Del Mar Boat Basin***, the Permittee shall submit for Executive Director review and approval a *Project Route and Impact Plan* as described in the March 31, 2008 U.S. Fish and Wildlife Informal Section 7 Consultation letter. Any layover locations for the RSG transporter and associated equipment and vehicles shall be limited to ~~unvegetated~~ **sparsely vegetated** areas along the beach **(i.e., less than 5% vegetative cover)**. At no time shall the project-related equipment or vehicles use as a layover location any coastal dune habitat or areas that provide habitat for sensitive plant species, including Brand's phacelia (*Phacelia stellaris*), and beach morning glory (*Calystegia soldanella*)."

Page 7, **Special Condition 11**:

> **"Mitigation for Impacts to Native Terrestrial Vegetation:** No less than 60 days after each RSG delivery (i.e., 60 days after delivery of the Unit 2 RSGs and of the Unit 3 RSGs), the Permittee shall submit for Executive Director review and approval a habitat mitigation and restoration plan for impacts to native terrestrial vegetation along the transport route**, as described in the December 2007 Preliminary Final Environmental Assessment and in Condition BR-15 on page 2-53 of that document**. The plan shall provide for no less than 1:1 mitigation for all impacts to native vegetation affected during project-related activities, including, but not limited to, coastal sage scrub, dune scrub, and native grassland. The plan shall identify the amount of each habitat type affected, and shall describe mitigation to be implemented for these effects, including location, planting plans, quantitative performance standards, mitigation time lines, monitoring requirements, and funding to be provided for implementation. The submitted plan shall ~~first be approved by~~ **be submitted concurrently to** the U.S. Fish and Wildlife Service."

Page 8, **Special Condition 14**:

> **"Road Repairs:** Within ~~30~~ **60** days of completing transport of the steam generators, the Permittee shall submit documentation to the Executive Director showing that it has provided any financial compensation determined by the State Parks Department as necessary to repair any damage…"

RECOMMENDED CHANGES TO STAFF'S PROPOSED FINDINGS – staff's recommended changes are shown below in ~~strikeout~~ and **bold underline**:

Page 2, *Summary*, 1st paragraph, 2nd sentence:

> "The existing generators would be removed and **temporarily** stored…"

Page 2, *Summary*, first bullet:

> **"Marine Biological Resources:** The proposed project would result in a loss of about ~~1000~~ **900** square feet of eelgrass within Camp Pendleton's Del Mar Boat Basin."

Page 9, *Project Background*, second paragraph:

> "The two SONGS generating units are pressurized water reactors using two separate closed-loop water systems to generate electricity. The primary loop moves high-pressure and heated water between the nuclear reactor and the steam generators. The steam generators, which are about 65 feet tall, **up to** 22 feet **in** diameter, and which weigh about 620 tons, **each** contain ~~two sets of~~ thousands of small tubes – ~~one set circulating~~ water from the primary loop **passes through the inside of the tubes** and ~~a separate set circulating~~ water from the secondary loop **circulates across the outside of the tubes**. Heat transferred between the two loops ~~is converted to~~ **creates** steam, which then turns a turbine that creates electricity. The steam in the secondary loop then cycles past a third separate water system, a once-through cooling water structure that pulls in seawater to condense the steam back to water."

Page 9, last paragraph, last sentence:

"This problem has been identified **at** a number of similar facilities…"

Page 9, Footnote 1:

"SCE owns ~~75.05~~ **78.21**% of SONGS Units 2 & 3, San Diego Gas & Electric owns 20%, ~~the City of Anaheim owns 3.16%,~~ and the City of Riverside owns 1.79%. The project requires the approval of all ~~four~~ **three** entities."

Page 9, Footnote 3, last sentence:

"Unit ~~1~~ **3** has a 15% probability that it would have to shut down by 2009…"

Page 10, second paragraph, first sentence:

"The main project activities consist of removing the four original steam generators (OSGs),[4] **temporarily** storing them onsite…"

Page 10, first bullet:

"OSG Removal and On-Site Storage: To remove the original steam generators, SCE will create an opening in the containment building housing each of the generating units, decontaminate and treat the Original steam generators to remove or encapsulate any remaining radioactive material within, and transport them to a temporary ~~enclosure within the high security~~ **staging** area at SONGS **within the secured Owner Controlled Area**.[5]"

Page 10, second bullet:

"RSG Transport to SONGS: The RSGs would be manufactured and shipped from Japan to Long Beach. Each RSG is about 65 feet long, 22 feet in diameter, and weighs over 600 tons. At Long Beach, they would be ~~placed onto a Goldhofer transport vehicle and~~ loaded onto a barge. ~~The Goldhofer is a self-propelled, six-axled, rubber-wheeled vehicle used to transport heavy loads. Each axle can produce up to about 16 metric tons of traction. Transporting a RSG of more than 600 tons would require several Goldhofer units be connected for a total size of about 75 feet long and 25 feet wide.~~"

Page 11, add the following footnote after the first full sentence on page 11, which starts, "Docking the barge at the Boat Basin…":

"**Note: The in-situ volume is estimated at 4,800 cubic yards. In recognition that the material will likely expand during handling, SCE applied a bulking factor of 40%, which results in an estimated disposal volume of about 6,700 cubic yards.**"

Page 11, first full paragraph:

> "Once ~~offloaded~~ at the Boat Basin, **the RSGs would be placed on a set of Goldhofer vehicles. The Goldhofer is a self-propelled, six-axled, rubber-wheeled vehicle used to transport heavy loads. Each axle can produce up to about 16 metric tons of traction. Transporting an RSG of more than 600 tons would require several Goldhofer units be connected for a total size of about 75 feet long and 25 feet wide.** SCE would transport one RSG at a time along a route that would include several miles of beach, Camp Pendleton roads, Interstate 5, and Old Highway 101 (see Exhibit 4 – Route Map). At the Boat Basin, the RSGs would be driven off the delivery barge along about 1500 feet of existing roads within Camp Pendleton to a staging area, where they would be loaded onto a tracked transporter. This transporter would consist of two self-propelled "crawlers", which are tracked vehicles about thirty feet long and twenty-six feet wide. Two crawlers would be attached front-to-back and fitted with supports and turntables needed to support the weight of an RSG. The tracked transporter would allow much quicker transit along the beach area than would the Goldhofer **and would avoid the need for plastic mats along the entire beach route**."

Page 10, Footnote 5, third sentence:

> "Steam generator replacement at SONGS will involve significant challenges not at issue at other facilities. For example, because the equipment doors in the two containment buildings are too small for the RSGs, SCE will need to create an opening in the buildings. This will require the containment wall inner support be "de-tensioned", which ~~has not been attempted at other operating nuclear facilities~~ **is technically challenging but has been completed successfully at the Turkey Point Nuclear Facility in Florida**. Additionally, the RSGs will be among the largest ever installed in a facility and will need to be installed in a relatively confined area. However, because these challenges and their resolution are issues related to radiological safety, they are under the exclusive purview of the NRC. See also Section 4.2. below."

Page 10, Footnote 6:

> "The eventual disposal offsite is not a part of this review, as SCE has not yet prepared a disposal plan or**, until recently,** identified an offsite destination for the ~~O~~original steam generators. **SCE recently contracted with EnergySolutions to dispose of the OSGs at a facility in Utah.**"

Page 11, first partial paragraph:

> "Docking the barge at the Boat Basin would require dredging of up to about 4,800 cubic yards of material to a depth of about -12 feet mean lower low water (MLLW). SCE's proposed dredging activities are more thoroughly described in Section 4.4.2 of these Findings and in SCE's *Proposed Dredging and Disposal Plan: Del Mar Boat Basin, San Onofre Nuclear Generating Station (SONGS Replacement Steam Generator Project, San Diego County* (December 20, 2007). **Dredged material will be placed in a temporary dewatering area adjacent to the Boat Basin. If sediment analysis shows the material is**

suitable for beach nourishment, SCE would apply for an amendment to its coastal development permit to allow the material to be used to nourish nearby beaches. If the sediment is not suitable, SCE would dispose of the material in a landfill."

Page 11, 2nd paragraph, last sentence:

"The tracked transporter would allow much quicker transit along the beach area than would the Goldhofer **and would avoid the need for plastic mats along the entire beach route.**"

Page 11, 3rd and 4th paragraph:

"At Red Beach within Camp Pendleton, the RSGs would be driven inland up a military road running between the beach and Camp Pendleton's Las Pulgas Road Gate. At a staging area near the gate, they would be transferred using cranes to the Goldhofer, which would have taken **Interstate 5 and** roads within Camp Pendleton from the Boat Basin area to this staging area. The Goldhofer would then be used to transport the RSGs for the remainder of the route.

The Goldhofer would travel on military roads parallel to Interstate 5 (I-5) for about 1000 feet and then transition to the southbound lanes of I-5 through a temporary opening in the boundary fence. They would travel along I-5 for about 1300 feet and then return through another temporary fence opening to a military road. Although SCE's use of I-5 would require the southbound lanes be closed for up to several hours per trip, this would allow the RSGs to ~~avoid crossing the weight limited~~ **bypass** Skull Canyon ~~Bridge~~ on Old Highway 101. **Use of the Skull Canyon segment would require substantial grading and widening due to the existing steep grades and road conditions.**"

Page 12, 1st paragraph, 4th sentence:

"Each transport trip to and from the Boat Basin to SONGS is expected to take ~~as little as one or two days~~ **up to about one to two weeks** each way**, with the beach portion taking about one to two days.**"

Page 12, 2nd indented paragraph, 2nd sentence:

"Any proposed changes from the route or transport methods described herein may require ~~SEC~~ **SCE** to submit an application for an amended coastal development permit for further Commission review and approval."

Page 12, first bullet:

"RSG Installation: Once at SONGS, the RSGs would be placed within a temporary RSG staging and preparation area to be constructed within the SONGS ~~high security area~~ **secured Owner Controlled Area**. Staging and preparation will require office space, areas for fabrication and welding, a warehouse, and other similar areas and uses. All facilities would be on previously developed areas at SONGS. Preparation will also include ~~construction~~ modification of containment access facilities, decontamination areas, and personnel processing facilities adjacent to the containment buildings..."

Page 12, last bullet:

> **"Anticipated Project Schedule:** The steam generator removal and replacement would take place during two of the regularly scheduled refueling and maintenance outages at SONGS. Unit 2 is next scheduled ~~to be refueled starting~~ **for the Steam Generator Replacement Outage** in October 2009 and Unit 3 in October 2010. Each outage with steam generator replacement is expected to last up to about 115 days. SCE plans to conduct dredging activities in **Summer/**Fall 2008. It expects to transport the Unit 2 RSGs in **December 2008 –** January 2009 and the Unit 3 RSGs in November-December 2009."

Page 13, 2nd bullet:

> **"Storage of the Original Steam Generators:** SCE will store the OSGs at SONGS ~~pending identification of an acceptable offsite disposal or storage location~~ **until they are transported offsite to a facility in Utah**. ~~During this project, the OSGs would be moved from the containment buildings to a site east of Interstate 5 within the SONGS high security area.~~ The OSGs are considered low-level radioactive waste and subject to NRC requirements for safe handling and storage."

Page 14, last paragraph:

> **"Corps of Engineers:** The project may require a Clean Water Act Section 404 permit and a Rivers and Harbors Act Section 10 permit from the Corps for transporting the RSG across watercourses **and for dredging activity**."

Page 15, 4th paragraph:

> **"San Diego Regional Water Quality Control Board (Regional Board):** The SONGS facility is subject to conditions of National Pollutant Discharge Elimination System (NPDES) permits issued by the Regional Board. ~~The proposed project may require revisions to the requirements of those permits.~~ The proposed project will additionally be subject to a Storm Water Pollution Prevention Plan to be approved by the Regional Board."

Page 18, add an additional bullet to the end of the bullet list and an additional paragraph, as shown:

- **"The transporter will cross the Santa Margarita River, which provides habitat for the tidewater goby. However, the transporter crossing will be below the high tide line and is not expected to adversely affect the goby, since it occupies the relatively calm, pooled areas further inland in the estuary.**

The transport route will also pass near several vernal pools, which are occupied by listed species of fairy shrimp – San Diego (*Branchinecta sandiegonensis*), and Riverside (*Streptocephalus woottoni*). However, the route completely avoids these pool areas, so the project is not expected to cause adverse effects to these listed species. Sections of the roads to be used for the transport route will likely include

several ruts and depressions that may be filled with water. However, SCE's 2007 biological survey included sampling and identification of the fairy shrimp and found no listed fairy shrimp species within these areas."

Page 20, Footnote 8: This footnote has been moved to Page 11, as shown above, and should be deleted from this location.

Page 26, Section Heading:

"4.4.4 Protection of Native Terrestrial Vegetation **and Sensitive Species**"

Page 26, last sentence, continuing through end of paragraph on page 27:

"However, this coastal sage scrub habitat, which is located adjacent to existing roads within Camp Pendleton and along I-5, is degraded and does not appear to support sensitive species such as the California gnatcatcher. **Additionally, some areas along the transport route are expected to provide habitat to other listed bird species, including the Western snowy plover (*Charadrius alexandruinus nivosus*) and the California least tern (*Sternula antillarum browni*).** ~~Nevertheless, a~~**A**s described below, SCE has proposed a number of measures to avoid and minimize impacts to terrestrial vegetation **and to these species, and** the USFWS and MCBCP have required additional mitigation measures."

Page 27, first bullet, Transporter Selection, modifications to last sentence, and adding a sentence:

"If any layovers are needed (e.g., due to high water at the Santa Margarita River mouth), **Special Condition 7** would allow SCE to use only those areas that ~~have been previously disturbed~~ **are sparsely vegetated, have no listed species present,** and are outside of coastal dune habitat. **Additionally, because the selected transporter will travel below the high tide line and will stay outside of coastal dune habitat areas, it will avoid potential impacts to Western snowy plovers that may use those areas.**"

Page 28, second bullet:

"Compensatory Mitigation: The biological monitors will also conduct post-transport surveys (one after transport of the first two RSGs for SONGS Unit 2 and another after transport of the two RSGs for SONGS Unit 3) to determine how much and what type of native habitat was affected. Based on those surveys, SCE will develop a compensatory mitigation plan **as described in the project's December 2007 Preliminary Final Environmental Assessment** that will provide no less than 1:1 replacement habitat for the affected areas. The mitigation plan is to identify mitigation sites, performance standards, mitigation timing, and funding from SCE to implement the plan. **Special Condition 11** would require SCE to submit this Plan for Executive Director review and approval."

Page 29, first bullet:

> **"Temporary traffic controls and reductions on Interstate 5:** Use of the proposed transport route would require temporary closure of the I-5 southbound lanes. Use of I-5 is necessary to allow the Goldhofer to avoid ~~crossing a weight-restricted bridge on~~ **a section of** Old Highway 101 **through Skull Canyon with steep grades and narrow widths**. To minimize access-related impacts on I-5, RSG transport would occur between midnight and 6 A.M. To gain access to I-5, SCE would temporarily remove a section of fencing at two locations along I-5 and build temporary transitions between a Camp Pendleton road and I-5. SCE has requested permission from CalTrans to use an I-5 exit ramp near this proposed location, which would increase the distance the RSGs would travel on I-5, but would eliminate the need for one of the two transition points. SCE will also provide its traffic control plan to CalTrans and to the California Highway Patrol, which will provide for unimpaired emergency vehicle response during temporary closures or traffic disruptions."

Page 35, last paragraph:

> "When crossing streams or estuaries, the transporter ~~will~~ **may** travel on the HDPE mats. In waters greater than two ~~inches~~ **feet**, the mats will be placed on additional mats…"

Page 38, *Substantive File Documents*: add italics to first word of document title, as below:

> "Hinkle (GE 402), D. ***Heavy*** *haul south of plant, Crossing of canyon fill south of Comfort Station 7, Unit 1 decommissioning--San Onofre Nuclear Generating Station*, p. 2, Dale Hinkle, P.E. Inc, Irvine, California, 2003."

Item Th12a

Coastal Development Permit No. E-08-001
Southern California Edison

EX PARTE COMMUNICATIONS

RECEIVED
MAY 05 2008
CALIFORNIA
COASTAL COMMISSION

DISCLOSURE OF EX PARTE COMMUNICATIONS

Name or description of project:
Southern California Edison San Onofre Steam Generator Replacement (CDP# E-08-001)

Date and time of receipt of communication:
Monday, May 05, 2008 @ 10:00 AM

Location of communication:
Phone call

Type of communication:
Phone call

Person(s) in attendance at time of communication:
David Kay, Rick Zbur, Susan McCabe

Person(s) receiving communication:
Bonnie Neely

Detailed substantive description of the content of communication:
(Attach a copy of the complete text of any written material received.)

The applicants explained the project which is to replace the aging steam generators at San Onofre Nuclear Generating Station. They are in agreement with the staff recommendation. They covered the material in the briefing materials previously provided to the Commission staff.

Date: 5-5-08

Signature of Commissioner: Bonnie Neely

WED. ITEM 12A

DISCLOSURE OF EX PARTE COMMUNICATIONS

Name or description of project:
Southern California Edison San Onofre Steam Generator Replacement (CDP# E-08-001)

Date and time of receipt of communication:
Saturday, May 3, 2008 @ 3:00 PM

Location of communication:
Santa Barbara

Type of communication:
Meeting

Person(s) in attendance at time of communication:
Susan McCabe
David Kay, Rick Zbur (by phone)
Person(s) receiving communication:
Dan Secord

Detailed substantive description of the content of communication:
(Attach a copy of the complete text of any written material received.)

The applicants explained the project which is to replace the aging steam generators at San Onofre Nuclear Generating Station. They are in agreement with the staff recommendation. They covered the material in the briefing materials previously provided to the Commission staff.

Date:

Signature of Commissioner: Dan Secord

Chairman Kruer

FORM FOR DISCLOSURE OF EX PARTE COMMUNICATIONS

Name or description of project , LPC, etc: Southern California Edison San Onofre Nuclear Generating Station CDP E-08-001 Agenda Item Th12a

Date and time of receipt of communication: April 29, 2008; 9:30 a.m.

Location of communication: La Jolla, CA

Type of communication (letter, facsimile, etc.): face-to-face meeting; Commissioner Pat Kruer was present

Person(s) initiating communication: David Kaye, SCE, Applicants
Susan McCabe, McCabe & Company
Rick Zbur, Latham & Watkins

Detailed substantive description of content of communication:
(Attach a copy of the complete text of any written material received.)

Applicant gave me an overview of the project indicating they support the staff recommendation. They covered the information in the briefing materials previously provided to the Coastal Commission staff.

4/29/08
Date

Chairman Pat Kruer

Item Th12a

Coastal Development Permit No. E-08-001
Southern California Edison

CORRESPONDENCE

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL Company

April 29, 2008

Mr. Tom Luster
California Coastal Commission
45 Fremont, Suite 2000
San Francisco, CA 94105-2219

Re: Southern California Edison Comments on Staff Report - Coastal Development Permit Application for Proposed Steam Generator Replacement at San Onofre Nuclear Generating Station (SONGS), San Clemente, CA (E-08-001)

Mr. Luster,

Southern California Edison (SCE) has reviewed the Staff Report for the SONGS Steam Generator Replacement Project, dated April 10, 2008 and supports the staff's recommendations and requests the Commission to adopt the proposed resolution. Per our discussion on April 28, 2008, SCE offers the following comments to clarify certain facts in the report:

1) Page 2, 1st Paragraph, 3rd line – The existing generators will be removed and will only be temporarily stored at the SONGS site. SCE has secured a contract with EnergySolutions to dispose of the old steam generators (OSG) in Utah. This company purchased Envirocare, the company that was referenced in the Environmental Impact Report (EIR) for the project. SCE suggests the insertion of the word "temporarily" in front of the words "stored at SONGS".

2) Page 5, Eelgrass transplanting – The condition required that eelgrass be transplanted 60 days prior to dredging. Because of marine base activities, SCE will not be able to transplant the eelgrass until immediately before dredging. A more realistic timeframe would be 7-10 days prior. Based on the size of the patch, marine biologists experienced in transplantations feel that 1-2 two days of field work would suffice.

3) Page 5, Beach nourishment requirement – The condition requires that sand suitable for unconfined aquatic disposal (non-toxic and greater than 80% sand) will be used for beach nourishment. The Nationwide Permit 35 requires that the sand be disposed upland. However, if the sand is determined suitable for beach nourishment, SCE could store the sand on our property and request an amendment to dispose of it at a later date at an agreed upon site in San Diego County.

4) Page 6, Condition 7 – Layover locations are limited to unvegetated areas. SCE will attempt to find unvegetated areas to layover. However, based on logistics and other environmental issues, SCE would like to maintain the ability to layover in sparsely vegetated areas. Any impacted vegetation will be noted in the After Action Report submitted to USFWS.

5) Page 7, Condition 11 – Last sentence. The special conditions require that a habitat restoration and mitigation plan shall be submitted to the Executive Director (ED) within 60 days of completion of transport. However, the last statement of the condition requires prior USFWS approval. Conditions in the USFWS consultation require an After Action Report to be submitted within 30 days of transport. SCE's concern is that the USFWS may not have enough time to review and approve the plan within the 30 day period. Therefore, SCE suggests the plan be submitted to the ED 90 days after the completion of the project, allowing USFWS 60 days to review the document.

6) Page 8, Condition 14 – The condition requires road repairs be completed within 30 days of completing transport. SCE has concerns that this may be too short of a time frame and suggests 60 days. Any damage that presents a potential safety hazard to the public will be repaired as soon as possible.

7) Page 9, Section 4.1, 3rd paragraph, sentences 3 and 4 – SCE believes the following text more accurately describes the plant process and could replace the existing text:

The steam generators, which are about 65 feet tall, up to 22 feet in diameter, and which weigh about 620 tons, each contain thousands of small tubes – water from the primary loop passes through the inside of the tubes, and water from the secondary loop circulates across the outside of the tubes. Heat transferred between the two loops creates steam, which then turns a turbine that creates electricity.

8) Page 9, last paragraph, last sentence – insert the word "at" after the word "identified"

9) Page 9, footnote #3 – The last sentence starts with Unit 1. It should read "Unit 3"

10) Page 10, Project description, after footnote 4 – Sentence should read "… temporarily storing them onsite prior to disposal…"

11) Page 10, Section 4.1, 1st Bullet, 4th line – SCE believes the sentence should read "… and transport them to a temporary staging area at SONGS within the secured Owner Controlled Area".

12) Page 10, Section 4.1, 2nd bullet – Suggested language for first paragraph

RSG Transport to SONGS: The RSGs would be manufactured and shipped from Japan to Long Beach. Each RSG is about 65 feet long, up to 22 feet in diameter, and weighs over 600 tons. At Long Beach, the RSGs would be loaded directly onto a barge from the ship.

13) Page 10, Section 4.1, 2nd bullet, 2nd paragraph, 1st and 2nd sentence - SCE suggests the following language:

The barge would deliver the RSGs to the Camp Pendleton Del Mar Boat Basin, about 14 miles south of SONGS (see Exhibit 3 – Del Mar Boat Basin). The Marine Corps uses the Boat Basin primarily for training on various types of military amphibious equipment. SCE expects to transport . . .

14) Page 10, Footnote # 5 – Containment wall inner support "de-tensioning" has been done before. SCE recommends the footnote read:

This will require the containment wall inner support to be "de-tensioned". This process was successfully completed at the Turkey Point Nuclear Facility in Florida.

15) Page 10 Footnote # 6 – This footnote should read:

SCE has contracted with EnergySolutions to dispose of the original steam generators as a facility in Utah.

16) Page 11, 1st Paragraph – The document mentions the 4800 cubic yards number for the first time on this page. Footnote 8 on Page 20(discussing how that number was determined) should be moved to here.

17) Page 11, 2nd paragraph – SCE believes the following text should be inserted onto the beginning of this paragraph:

Upon arrival at the designated mooring point in the Boat Basin, the RSGs will each be offloaded from the barge using a Goldhofer self-propelled modular trailer. The Goldhofer is a multi-axle rubber-tire vehicle used to transport heavy loads. Each drive axle can produce up to 16 metric tones of traction. Transporting a single RSG would require a Goldhofer of about 75 feet in length and 25 feet in width. Once offloaded at the Boat Basin, . . .

18) Page 11, 2nd paragraph, last sentence – SCE requests that "*and avoid the need for plastic mats*" be inserted at the end of the paragraph, after the word "Goldhofer."

19) Page 11, 4th paragraph, 2nd sentence – The Goldhofer will travel on roads within Camp Pendleton and on Interstate 5 during it's transit from the Del Mar Boast Basin to the staging area.

20) Page 11, last paragraph, 3rd and 4th sentence – Skull Canyon does not have a bridge. If Skull Canyon were to be used, substantial grading and widening of roads would have to occur within the canyon. SCE believes the sentences should read:

Although SCE's use of I-5 would require the southbound lanes to be closed for up to several hours per trip, this would allow the RSGs to bypass Skull Canyon, which is not a

technically passable thoroughfare for this transport. SCE would coordinate its use of I-5 with CalTrans and the California Highway Patrol, and to reduce traffic impacts, it is expected to perform this portion of the transport route between midnight and 6 a.m.

21) Page 12, 1st paragraph – The Goldhofer will travel the same routes it took to the staging area and the crawler will travel along the beach. The sentence may lead the reader to believe that the Goldhofer will also travel on the beach, which is not the case.

22) Page 12, 2nd paragraph – Each transport trip would likely take 1-2 weeks. The beach portion would take as little as 1-2 days, but transferring the RSGs to the Goldhofer and waiting for appropriate times to enter I-5 will increase the total transport time.

23) Page 12, 2nd indented paragraph – SCE is spelled incorrectly in the last line.

24) Page 12, 1st bullet, 2nd line – Change high security area to "secured Owner Controlled Area."

25) Page 12, 1st bullet, 4th sentence – Change construction to "modification". The facilities already exist.

26) Page 12, last bullet, 2nd Sentence – This should read:

Unit 2 is next scheduled for the Steam Generator Replacement Outage in October 2009 and Unit 3 in October 2010.

Unit 3 has a refueling outage this year.

27) Page 12, last bullet: Change Fall 2008 to "Summer/Fall 2008" and "January 2009" to "December 2008 – January 2009."

28) Page 13, 2nd Bullet: OSGs will be temporarily stored until they are transported offsite to the EnergySolutions disposal facility in Utah. Delete the second sentence because the OSGs will not be stored east of I-5.

29) Page 14, Section 4.3, Corps of Engineers: Add "and for dredging activity" after the word "watercourses."

30) Page 15, San Diego Regional Water Quality Control Board: The NPDES permit was revised in 2005 to incorporate the project, so this item has already been done.

31) Page 20, Footnote # 8 – See comment # 16

32) Page 22, Have feasible mitigation measures… - The eelgrass number in this paragraph states 900 square feet of eelgrass. Prior to this, 1000 sq feet was used.

33) Page 24, 3rd Paragraph, Special Condition 4 – See comment # 3.

34) Page 29, 1st Bullet, 1st three sentences – SCE suggests the following description: *Temporary traffic controls and reductions on Interstate 5: Use of the proposed transport route would require temporary closure of the I-5 southbound lanes. Use of I-5 is necessary to allow the Goldhofer to avoid a technically impassable section of dirt road through Skull Canyon. To minimize access-related impacts to I-5, RSG transport on I-5 is expected to be permitted only between midnight and 6 a.m. To gain access to I-5, . . .*

35) Page 35, last paragraph – The tracked transport vehicle could cross streams as deep as two feet. SCE suggests the first two lines to be change to:

When crossing streams and estuaries, the transport may travel on the HDPE mats. In waters greater than two feet, the mats may be placed on additional mats.

36) Page 38, Hinkle reference; italicize the word Heavy.

If you have any further questions, feel free to contact me at (626) 302-3066.

Sincerely,

Signature on File

Patrick Tennant
Biologist

cc: Jonna Engel, CCC
David Kay, SCE
Mark Malzahn, SCE
Brian Metz, SCE
Bob Heckler, SCE

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April 28, 2008

Chairman Kruer and Honorable Commissioners
California Coastal Commission
45 Fremont, Suite 2000
San Francisco, CA
94105-5200

Agenda Item Th12a

Re: Appeal No. E-08-001 (Southern California Edison Company, San Onofre Nuclear Generating Station Steam Generators)

Dear Chairman Kruer and Honorable Commissioners:

On behalf of Southern California Edison, enclosed please find copies of the materials that will be used to brief the Commissioners on the above referenced matter. Copies of these materials have been provided to Staff. Susan McCabe and her staff will contact you shortly to set up a briefing prior to the Commission hearing.

Best regards,

Damon Mamalakis
of LATHAM & WATKINS LLP

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Leading the Way in Electricity

San Onofre Nuclear Generating Station
Replacement Steam Generator Project

- San Onofre Nuclear Generating Station (SONGS)
  - Two-unit nuclear generating station
  - 2,254 MW of baseload generation – 2.75 million households
- Replacement Steam Generators (RSG) required for continued operation of SONGS
  - Old steam generators subject to cracking and degradation
  - RSGs will allow for SONGS to operate through license period (2022)
- RSG – Industry Trend
  - 53 pressurized reactors now operating in U.S.
  - 35 have undergone steam generator replacement and 15 are underway
- Transport of Replacement Steam Generators
  - $670 million cost to ratepayers
  - Proponents Environmental Assessment (PEA) 2004
  - CPUC certified EIR in 2005 - Approved steam generator replacement
  - Environmental Assessment - Preferred Route = Beach/Road Route
- Transport Route
  - Two RSGs per Unit delivered from Kobe, Japan to Long Beach
    - U2 RSGs: 12/01/08 – 12/31/08, U3 RSGs: 10/01/09 – 10/31/09
  - RSG's shipped on barge to Del Mar Boat Basin, Camp Pendleton
  - Transport along beach, Camp Pendleton Roads, I-5, and Old Highway 101 to SONGS
- Route Sensitivities
  - Del Mar Boast Basin Dredging
    - Eelgrass transplanted within Del Mar Boat Basin
  - 7 miles of Beach - Crawler will be used on beach to minimize impacts
  - CA least tern/western snowy plover impacts avoided
    - No breeding season transport
    - Crawler Travels below high tide line
  - Santa Margarita River will require matting
  - Existing training roads used to minimize impacts to CA Coastal Gnatcatcher
  - Biological Monitoring prior to, during, and after transportation. Monitors have the authority to stop transport if needed.
- Permitting
  - 2005 CPUC EIR – Completed
  - USFWS Informal Consultation – Completed
  - 401 Certification – Expected June 2008
  - 404 NWPs – Expected June 2008
  - Environmental Assessment –
  - USMC Real Estate License –

These materials have been provided to Coastal Commission staff

Leading the Way in Electricity℠

SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL Company

San Onofre Nuclear Generating Station
Replacement Steam Generator Project

Thursday, May 8, 2008
CDP No. E-08-001
Agenda Item 12(a)

THESE MATERIALS HAVE BEEN PROVIDED TO COASTAL COMMISSION STAFF

Background

- San Onofre Nuclear Generating Station (SONGS)
  - Two-unit nuclear generating station
  - 2,254 MW of baseload generation – 2.75 million households
- Replacement Steam Generators (RSG) required for continued operation of SONGS
  - SONGS currently licensed to 2022
  - Old steam generators made of iron-nickel alloy subject to cracking and degradation
  - RSGs will allow for SONGS to operate through license period
- RSG – Industry Trend
  - 53 pressurized reactors now operating in U.S.
  - 35 have undergone steam generator replacement (average age 17 yrs)
  - 15 are underway (average age of these is 24 yrs)
  - By 2009, SONGS U2 and U3 operating for 26 and 25 yrs, resp.

Background Continued

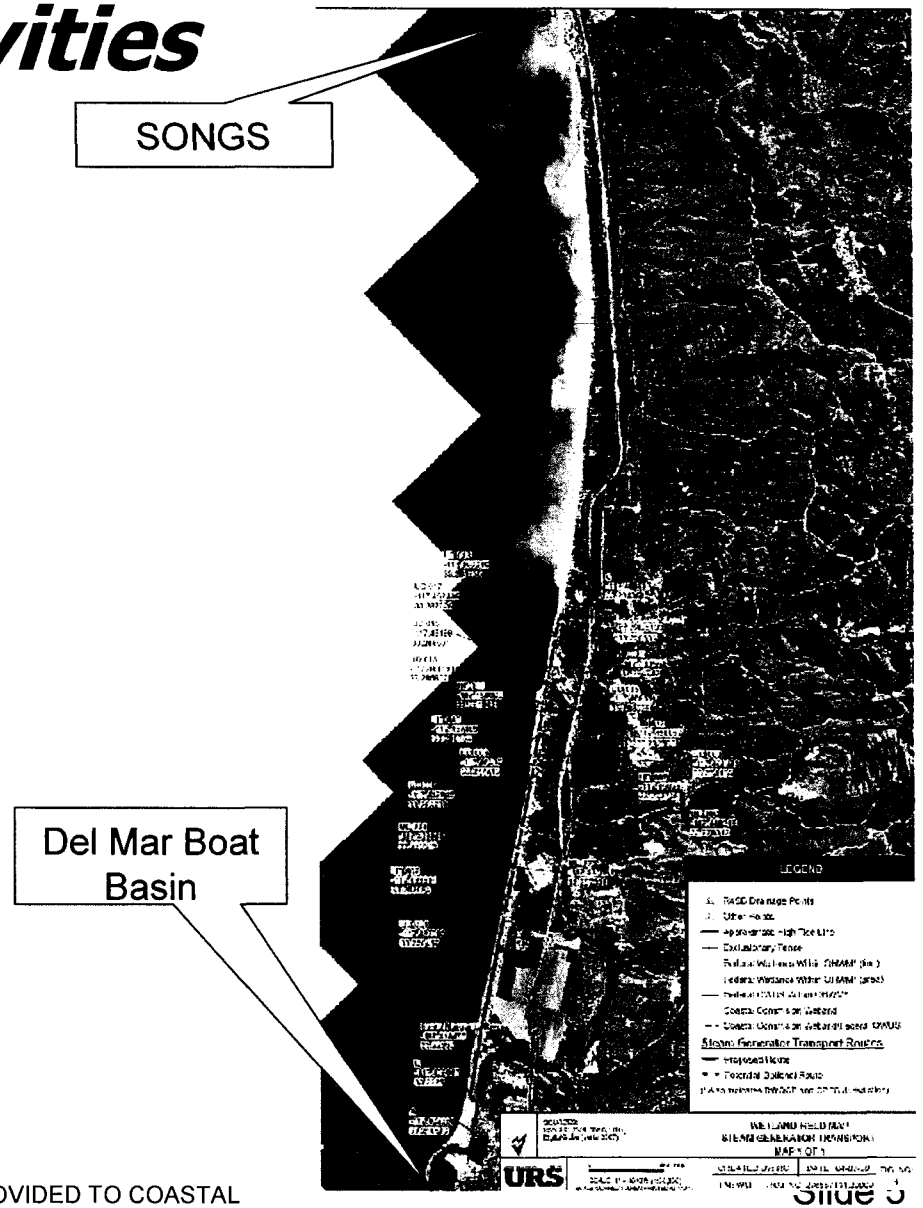
- Transport of Replacement Steam Generators
  - $670 million cost to ratepayers
  - Proponents Environmental Assessment (PEA) 2004
    - Benefit to cost ratio = 2.16-2.56 : 1 for CA ratepayers
  - CPUC certified EIR in 2005
    - Approved steam generator replacement
- Coastal Act Applicability
  - Del Mar Boat Basin Dredging
  - Santa Margarita River Crossing
  - Potential Impact to CSS Vegetation
- Analysis of Transport Routes
  - CPUC, 2005 EIR
  - Environmental Assessment
    - Preferred Route = Beach/Road Route (Previously approved RPV route in reverse)

Replacement Steam Generator Transport

- Two Generators per Unit
- RSGs delivered from Kobe, Japan to Long Beach
  - Unit 2: December 2008
  - Unit 3: October 2009
- Shipped on barge to Del Mar Boat Basin
- Transport along beach, Camp Pendleton Roads, I-5, and Old Highway 101

Transport Sensitivities

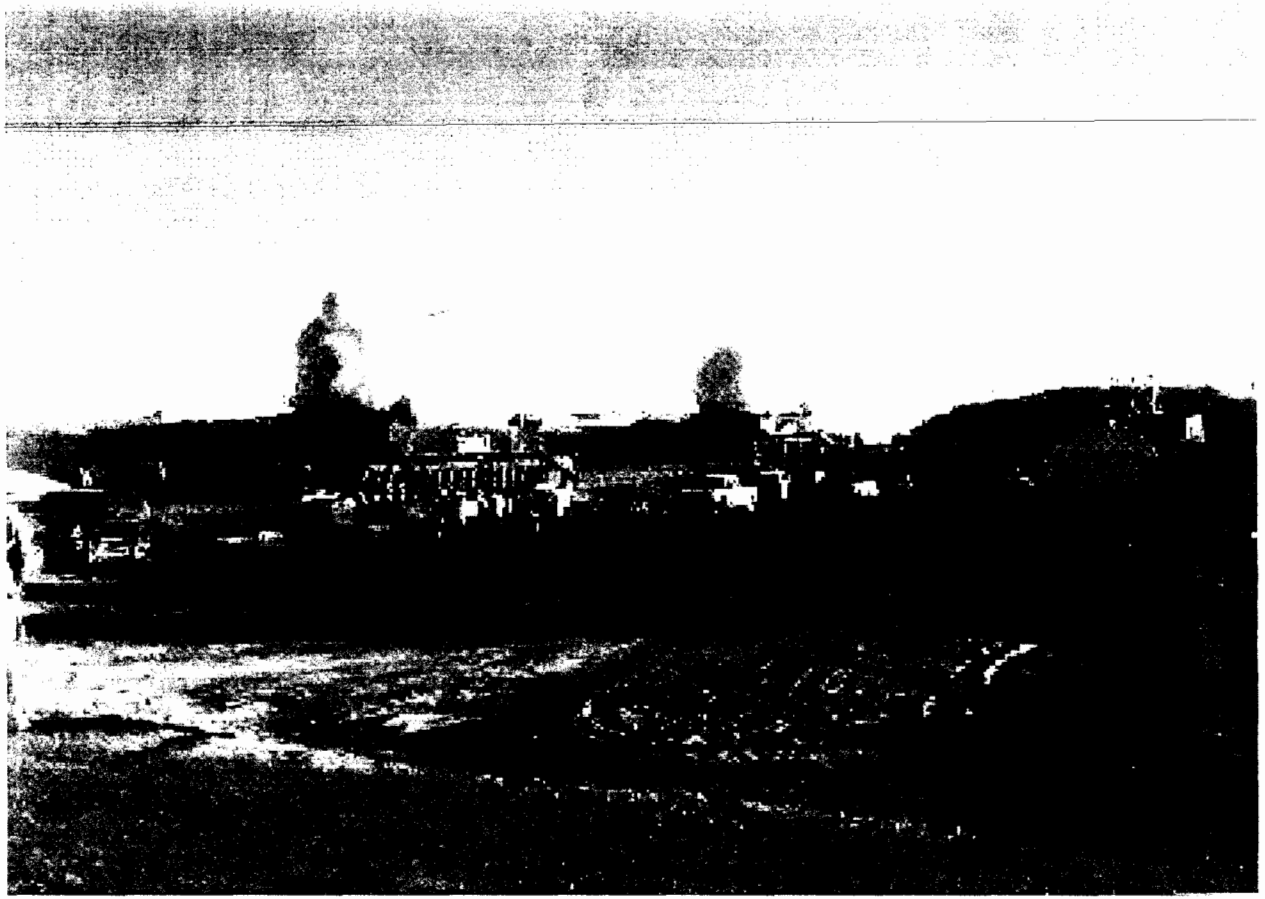
- Beach/Road Route Preferred
  - Avoids Impacts to I-5
  - Overpass/weight issues
- Del Mar Boast Basin Dredging
  - Eelgrass
- 7 miles of Beach Route
  - CA least tern/western snowy plover
  - USMC Training Areas
- Drainages
  - Santa Margarita River
- Training Roads
  - CA Coastal Gnatcatcher



Crawler will be used along beach

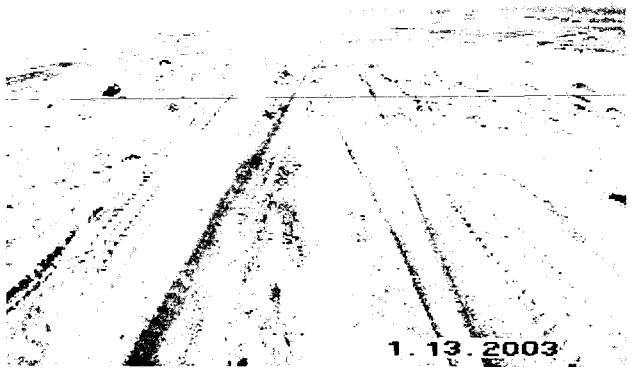
- Crawler can make trip in 1 – 2 days
- Travel below high tide line to minimize environmental impacts
- Supportive mats only required at Santa Margarita River crossing

Self Propelled Modular Trailer for dirt and paved roads



Protection Measures for Route Sensitivities

- Breeding season avoidance
- Use crawler on beach
- Use existing training roads
- Travel below high tide line
- Biological Monitoring prior to, during, and after transportation



Regulatory

- 2005 CPUC EIR - Completed
- USFWS Informal Consultation - Completed
- 401 Certification – Expected June 2008
- 404 NWPs – Expected June 2008
- USMC – NEPA and Real Estate License
- CalTrans – Road Use Permit

Subject: Coastal Commission enables a NEW quarter million pounds of High Level Radioactive Waste each year in California!

April 28th, 2008

Dear Readers,

The California Coastal Commission (CCC) has the opportunity to take the car keys away from a drunk. But they have no intention of doing it.

The drunk is San Onofre Nuclear (Waste) Generating Station, which lies to the media and to the public, which hires executives (and others) who believe they're above the law, and which wants to keep generating enormous quantities of highly radioactive waste for at least another 20 years.

The CCC could stop this, but they claim their hands are tied, and they cannot consider "safety issues" when approving or not (but never "not") each permit request from San Onofre. But each permit is a little piece of the puzzle.

And piece by piece, the reconstruction of Units II and III is now being done, to the tune of an estimated $4 to 5 billion dollars (GULP!) altogether, including $1.2 billion in the past 12 months.

The more work that's completed and the more money that's spent, the more difficult it will be to STOP throwing MORE money into the nuclear cesspool at San Onofre. A lot of the work has yet to be completed, so NOW is a great time to shut these plants down FOREVER. Tomorrow, it will be harder.

The CCC will, instead, bend over BACKWARDS not to do it, but it's all ILLEGAL. They are avoiding a responsibility they CANNOT, legally, avoid.

A valet at a fancy nightclub, who retrieves a car for an obviously-drunk patron, bears a legal responsibility if that person crashes their car and kills an innocent third party. No contract or agreement between the valet and the nightclub patron can absolve the valet of responsibility.

The CCC is trying desperately -- like the valet acting as their own attorney -- to absolve themselves of responsibility entirely, even for the old steam generators, which are irradiated. There is nowhere to put them. The steam generators are not as irradiated as the reactor pressure vessel, let alone the spent fuel, but they are not fit for recycling

and should be isolated from humanity for thousands of years. The CCC wishes, instead, to simply ignore them, letting Southern California Edison (SCE) decide how to dispose of them -- apparently letting them sit on the beach forever will be just fine with the CCC.

Instead, the CCC focuses on the new steam generators, which SCE wants to move along the beach after they arrive from Japan, so there's a lot of ink about the damage to the sand, and the mitigation requirements thereof.

But nothing about giving a drunk the keys to the car. The CCC doesn't care that by allowing delivery of the new steam generators, they are enabling the senseless production of millions of pounds of high level radioactive waste (and millions more of so-called low-level, or "diluted" radioactive waste) in California.

In a few years, SCE, the owner of the plant, will go to the various commissions and claim their plants have been rebuilt and are ready to run for another 20 years. A large portion of the plants WILL have been rebuilt, but large portions ALSO will NOT have been.

Vital structures have been irradiated and are failing sooner than expected. That's why the steam generators need replacing in the first place. They leak tritium and other radioactive isotopes into the environment.

Each steam generator has thousands of tubes, and SCE has to plug up each tube that leaks (AFTER it starts leaking, of course -- they have to wait until the next shutdown to fix these things, and they pollute the environment in the meantime).

But when the CCC is asked to rule on the replacement of the steam generators, which were supposed to last the life of the plant EVEN IF the licenses were extended, the CCC claims it cannot take "safety" into consideration!

The Nuclear Regulatory Commission has proven itself time and again to be a "lap-dog" agency which cannot and will not protect the citizens. (Just Google "Davis-Besse 2002" for one example, or recall that on 9-11, with planes flying OVER Indian Point and NEAR other reactors, the NRC did exactly NOTHING -- they were, in the words of their commissioner, "glued to their television sets, watching events unfold.")

Yet the CCC will hand the car keys to the drunk. If he crashes into somebody -- if the plant melts down -- the CCC does NOT believe they, the commissioners, will have had ANY responsibility. That's what they claim!

But let's examine that claim, because it's false. The most recent example of the claim

was made here (I've heard them say it for decades, in EVERY instance involving any nut or bolt at San Onofre or Diablo Canyon. Every single one.):

From:
http://documents.coastal.ca.gov/reports/2008/5/Th12a-5-2008.pdf

Claim: "Note: Federal law pre-empts the state from imposing requirements related to nuclear safety or radiation hazards. This report therefore evaluates only those issues necessary to determine conformity to policies of Chapter 3 of the Coastal Act and does not address the issues pre-empted by federal law."

By what maniacal twist of logic did we get from reality to this irrational and UNSUBSTANTIATED claim?

Try, just TRY to get the CCC to tell you where they got the idea that the above paragraph accurately reflects the legal situation. Probably you can't get an answer, but if you manage to get any answer at all from ANY state agency which similarly absolves itself of ALL responsibility for even UNDERSTANDING THE DANGERS OF NUCLEAR POWER, their answer might go approximately like this:

"We are an Agreement State with the Federal Government, so our hands are tied" they'll tell you. An "Agreement State" means that California (and New York, Connecticut, Georgia, and every other state with a nuclear power plant in it) has signed an agreement with the federal government which does, indeed, give SOME authority for such decisions to the Federal Government.

But NOT THAT MUCH!

Usually the original agreement was not even with the Nuclear Regulatory Commission or the Department of Energy, the two federal agencies which would handle such an agreement today. Rather it was with the Atomic Energy Commission, and hasn't even been reworded or updated to reflect the three-decades-old discrepancy of which agency it is with.

Each state's agreement is different. That's because EACH OF THESE AGREEMENTS IS SLEAZY, ILLOGICAL, AND ILLEGAL and had to be approved over the objections of people in the state legislatures who tried to use various, and different, state constitutional powers to STOP this abdication of responsibility.

But nobody fought too hard, because everybody was told it was UNAMERICAN to fight

nuclear power. It wasn't, but that's what they were told. And they also didn't fight too hard to keep their "right to pollute" controlled within the state because very few, if any, legislators knew anything about splitting atoms or the dangers of radioactivity, and if they fought the agreements, they'd have to reveal that fact.

Let's look the actual wording of California's "Agreement." Let's look specifically at the "out" clause which was included. In a legally binding agreement, there is always an "out" clause of some sort. The whole purpose of an "agreement" (as opposed to a fascist dictatorial decision) is to say that one party MUST fulfill certain obligations or the agreement is nullified. Sometimes BOTH parties MUST fulfill various obligations, and if either party fails to do their part, the agreement is nullified, or at least opened to modification - and LEGAL DAMAGES can be sought for breach of contract.

Based on a link from the NRC's own web site, the California agency which actually ceded regulatory authority to the NRC was the Radiologic Health Branch of the Food, Drug, and Radiation Safety Division of the Department of Health Services. But it has been applied to all California agencies, usually willingly on their part.

The pre-emption of state regulatory authority was made in 1962, as described in Section 115230 of the California Health And Safety Code. But Article VIII of the California Health And Safety Code, Section 115235, states the following: "The Commission, upon its own initiative after reasonable notice and opportunity for hearing to the State, or upon request of the Governor of the State, may terminate or suspend this Agreement and reassert the licensing and regulatory authority vested in it under the Act if the Commission finds that such termination or suspension is required to protect the public health and safety." ("The Commission" here referred specifically to the California Resources Agency. See Section 114985 of the Code.)

In Article IX of the same section of the California Health and Safety Code, Section 115235, it is stated that after the agreement takes effect it shall "remain in effect unless, and until such time as it is terminated pursuant to Article VIII."

That clearly says that California MUST take back responsibility for the public health and safety IF the federal agencies to whom such responsibility has been ceded prove themselves incapable of providing for that public health and safety.

How can the State be assured that the Nuclear Regulatory Commission (which took over the responsibilities ceded in 1962 to the AEC (Atomic Energy Commission)) is doing its job properly?

In other words, by what mechanism would the State know that the terms of the agreement have been fulfilled?

The answer is, of course, the state MUST provide some level of independent oversight AND, possibly, independent research -- whatever it takes to be sure the NRC, the DOE, and the nuclear industry are properly managed in California.

ANY level of oversight could, conceivably, be argued as being sufficient. But NO OVERSIGHT is unacceptable. And what has happened because of this utter lack of oversight is even more unacceptable.

By claiming safety is not their concern, the CCC is in effect saying to the drunk: "here's your car keys, get in and drive." Without new steam generators, San Onofre cannot continue to operate (with thousands of tubes plugged up, the old steam generators have become too inefficient). The CCC turns a blind eye to reliable reports of cancer clusters around numerous nuclear power facilities INCLUDING SAN ONOFRE, because, they say, they are "pre-empted by federal law."

Even if one ASSUMES the state agencies are pre-empted from ruling directly against the steam generators which will be used to produce poisons which will give our children leukemia (see new item from New Scientist, which is usually rather pro-nuclear, below), they were NEVER pre-empted from THINKING.

They could say, for example, "Because we calculate this project will leave a waste pile on our coast, possibly for hundreds of years, and that same waste pile will have to be moved eventually, at great risk, to be put somewhere where people have been forcibly removed forevermore, we, the commissioners of the CCC, cannot rule in favor of this project. We have not even addressed the "safety" issues we claim we cannot concern ourselves with, but we wish to note that these are serious liabilities for the owners of the plant, and therefore we do not believe SCE can be expected to remain solvent during the life of the radioactive waste, which is millions of years. Therefore, we completely reject this application."

They won't, of course. They'll just say their hands are tied, but they can't produce proof of that, because safety is the ONLY reason they exist. No one can preempt your right to protect yourself and your family from corporate greed. Every law has an "out" that says, basically, "if it's for the greater good, this law can be proven invalid."

For example, in war, you are NOT ALLOWED to obey illegal orders. In business, you cannot sign contracts which require anyone to do anything illegal. And in business, murder

is considered illegal, as it should be in government contracts, as well.

Radiation kills. The facts are overwhelming: We have been too lax. Tritium releases and releases of every other radioactive element are too high. The dangers are far greater than anticipated or than admitted to by the nuclear industry. The failure rates due to human error are much higher than "anyone" admitted were possible. The amount of employee sabotage at a typical nuclear power plant these days is alarming, as is the amount of napping on the job, falsifying of records, and so on. Who needs terrorists to cause a meltdown when we have embrittlement problems which are probably far more likely to do so?

But the CCC will ALWAYS SAY their hands are tied. They are preempted from thinking about any of this. They are sorry, but it's outside their jurisdiction. And thank you for your two minutes, they might add. Next speaker, please. Hiccup.

Sincerely,

Signature on File

Ace Hoffman
Carlsbad, CA

P.S. One more thing to consider: "We face a challenge in ensuring the quality of the thousands of smaller parts and materials that are manufactured in other parts of the world" -- including pumps, valves, motors, fans, pipe "and even bolts," Lyons said. "The close scrutiny that regulatory agencies can enforce on major manufacturers to assure that quality components are produced is challenging to achieve for a vastly greater number of sub-vendors that supply parts and materials to the manufacturers." -- from http://www.manufacturingnews.com/news/07/0827/art1.html
("Lyons" is the commissioner of the NRC). Fact: Quality CANNOT BE ASSURED!

The author attended over 100 public hearings on nuclear issues, mostly in California, but has ceased doing so unless they are very local and the participants will be put under oath (which never happens anymore). He has interviewed more than 1000 scientists on nuclear topics and has a collection of approximately 400 nuke-related books. At 51, he is a bladder cancer survivor. He is the webmaster of the Shut San Onofre web site, and others.

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New Scientist article: "REASONABLE DOUBT:"
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From: Rachel's #956: Bridge at the Edge of the World
From: New Scientist, Apr. 24, 2008

REASONABLE DOUBT

By Ian Fairlie

Among the many environmental concerns surrounding nuclear power plants, there is one that provokes public anxiety like no other: the fear that children living near nuclear facilities face an increased risk of cancer. Though a link has long been suspected, it has never been proven. Now that seems likely to change.

Studies in the 1980s revealed increased incidences of childhood leukaemia near nuclear installations at Windscale (now Sellafield), Burghfield and Dounreay in the UK. Later studies near German nuclear facilities found a similar effect. The official response was that the radiation doses from the nearby plants were too low to explain the increased leukaemia. The Committee on Medical Aspects of Radiation in the Environment, which is responsible for advising the UK government, finally concluded that the explanation remained unknown but was not likely to be radiation.

There the issue rested, until a recent flurry of epidemiological studies appeared. Last year, researchers at the Medical University of South Carolina in Charleston carried out a meta-analysis of 17 research papers covering 136 nuclear sites in the UK, Canada, France, the US, Germany, Japan and Spain. The incidence of leukaemia in children under 9 living close to the sites showed an increase of 14 to 21 per cent, while death rates from the disease were raised by 5 to 24 per cent, depending on their proximity to the nuclear facilities (European Journal of Cancer Care, vol 16, p 355).

This was followed by a German study which found 14 cases of leukaemia compared to an expected four cases between 1990 and 2005 in children living within 5 kilometres of the Krummel nuclear plant near Hamburg, making it the largest leukaemia cluster near a nuclear power plant

anywhere in the world (Environmental Health Perspectives, vol 115, p 941).

This was upstaged by the yet more surprising KiKK studies (a German acronym for Childhood Cancer in the Vicinity of Nuclear Power Plants), whose results were published this year in the International Journal of Cancer (vol 122, p 721) and the European Journal of Cancer (vol 44, p 275). These found higher incidences of cancers and a stronger association with nuclear installations than all previous reports. The main findings were a 60 per cent increase in solid cancers and a 117 per cent increase in leukaemia among young children living near all 16 large German nuclear facilities between 1980 and 2003. The most striking finding was that those who developed cancer lived closer to nuclear power plants than randomly selected controls. Children living within 5 kilometres of the plants were more than twice as likely to contract cancer as those living further away, a finding that has been accepted by the German government.

Though the KiKK studies received scant attention elsewhere, there was a public outcry and vocal media debate in Germany. No one is sure of the cause (or causes) of the extra cancers. Coincidence has been ruled out, as has the "Kinlen hypothesis", which theorises that childhood leukaemia is caused by an unknown infectious agent introduced as a result of an influx of new people to the area concerned. Surprisingly, the most obvious explanation for this increased risk -- radioactive discharges from the nearby nuclear installations -- was also ruled out by the KiKK researchers, who asserted that the radiation doses from such sources were too low, although the evidence they base this on is not clear.

Anyone who followed the argument in the 1980s and 1990s concerning the UK leukaemia clusters will have a sense of deja vu. A report in 2004 by the Committee Examining Radiation Risks of Internal Emitters (2 Mbyte PDF), set up by the UK government (and for which I was a member of the secretariat) points out that the models used to estimate radiation doses from sources emitted from nuclear facilities are riddled with uncertainty. For example, assumptions about how radioactive material is transported through the environment or taken up and retained by local residents may be faulty.

If radiation is indeed the cause of the cancers, how might local residents have been exposed? Most of the reactors in the KiKK study were pressurised water designs notable for their high emissions of tritium, the radioactive isotope of hydrogen. Last year, the UK government published a report on tritium which concluded that its hazard risk should be doubled. Tritium is most commonly found incorporated into water molecules, a factor not fully taken into account in the report, so this could make it even more hazardous.

As we begin to pin down the likely causes, the new evidence of an association between increased cancers and proximity to nuclear facilities raises difficult questions. Should pregnant women and young children be advised to move away from them? Should local residents eat vegetables from their gardens? And, crucially, shouldn't those governments around the world who are planning to build more reactors think again?

Ian Fairlie is a London-based consultant on radiation in the environment

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This newsletter was written by Ace Hoffman:
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