Comment Set CC5
California Earth Corps

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VIA EMAIL
AND U.S. MAIL

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RE: CALIFORNIA EARTH CORPS' ("Earth Corps") COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT REPORT ("EIR") FOR SOUTHERN CALIFORNIA EDISON ("SCE") SAN ONOFRE NUCLEAR GENERATING STATION ("SONGS") STEAM GENERATOR REPLACEMENT PROJECT ("SGR") AND RATEMAKING PROCEEDING (collectively "Project") for CPUC APPLICATION: A.04-02-026.

A. INTRODUCTION

SCE's stated Project objectives are:

- Replace existing Original Steam Generators ("OSG")

The EIR should discuss whether the OSG replacement would also require replacing the heavily corroded primary and secondary coolant loops and reactor head flange whose corrosion products are the cause of the plugged OSG tubes, as well as replacement of the 100+ aging valves now prone to failure, instrumentation and control cables and their cable trays located in the 28 x 28 foot hole which must be cut to remove the OSGs. CC5-1

The EIR should also discuss whether the OSG replacement will necessitate a second containment structure be placed over the repaired containment structure in order to meet NRC containment criteria, as was required for SONGS Unit #1. CC5-2

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- Extend the useful life of the steam generators

Actually, it is to extend the life of the power plant, not the life of the steam generators.

CC5-2

- Ensure the continued supply of low cost power

While the EIR acknowledges this objective of the Project, the EIR's environmental impact analysis fails to address this key component of the Project. (See sections B and D below).

B. PROJECT DESCRIPTION

An adequate Project Description is an essential component of the EIR. Public Resources Code §21065 requires that the Project be defined as "the whole of an action which has the potential for resulting in either direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment." In this EIR, the Project is described as follows: "The Proposed Project would replace the OSG's at SONGS 2 & 3." (B-1). This is inadequate, because the Project Description does not include all reasonably foreseeable consequences of the ratemaking proposal. Instead, it improperly confines the Project Description to removal, transport, staging and disposal of the steam generators only. The Project Description omits the most critical aspect of the Project, recognized in other areas of the EIR itself – that the purpose and direct impact of the Project is to extend the operating life of the plant for until 2021/2022.

CC5-3

Indeed, SCE's own application acknowledges the scope and purpose of the Project, "the SONGS 2 & 3 SGRP application presents the Commission with a question of long

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term resource planning for the state, SCE, and SDG&E." (SCE Motion for Order to Show Cause, pg. 3, April 23, 2004). CC5-3

The purpose of an EIR's Project Description, is to assist the lead agency (here, the Commission) in develop a reasonable range of alternatives to evaluate in the EIR..." CEQA Guidelines § 15124 (a)-(d).

Because this EIR's Project Description is unduly narrowed, a reasonable range of alternatives to the Project have not been developed and addressed in this EIR. (See discussion in Section C, below).

CEQA requires that an EIR consider all direct, indirect and cumulative impacts of a Project. This EIR fails to consider the direct impacts of the Project in that it fails to consider the direct impacts of extending the life of the plant's operation. Therefore, the EIR has deprived the public and the Commission of the information that it needs to determine the environmental effects of the future operations of the plant as part of its determination of whether to approve the rate making proposal (A.04-02-026). To illustrate, the EIR states that the environmental analysis for each environmental impact issue area "includes consideration of the Proposed Project described in Section B, and the alternatives described in Section C." (D.1-1). Because the Project Description is unduly narrowed by the EIR, so too is the environmental impacts analysis unduly narrowed and inadequate. (see discussion in section D below). CC5-4

The EIR should provide the public and the Commission with the full scope of environmental effects of SONGS' future operations consistent with the Commission's review of the economics of those future operations.

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With regard to the steam generators' transportation (both old and refabricated), the Port of Long Beach operations transferring the RSGs from heavy-load ships to barge for travel to the Del Mar Boat Basin are not described, reported or mitigated. Since this is a non-attainment area with a statutory "no net increase" in air emissions, whose Pier J, S and T facility expansions themselves are under challenge with DEIRs currently withdrawn, many crucial questions remain unanswered in this integral part of the RSG transport (ES-5). CC5-5

Original Steam Generator Transportation and Disposal is not described, reported or mitigated. Although "the disposal location has not been specified at this time, but one likely destination would be Envirocare of Utah, Inc. at Clive, Utah." (B.3.4.r, page B-34), "SCE prefers immediate offsite disposal". Since this is their preference, the many crucial questions that remain unanswered for the method of transport, alternative destinations, routes, and final disposition and disposal of the OSG for this integral part of the Project must be evaluated in the DEIR. Minimally, the transport to Clive and Envirocare site evaluation and the alternative of permanent on-site disposal transport must be reported (SCE, 2004i – Response 55) and, if necessary, mitigations recommended (ES-6 and B.1.3, B.3.4.5, page B-2 to 35). CC5-6

C. ALTERNATIVES ANALYSIS AND COMPARISON

1) <u>Feasible Alternatives</u>

The alternatives analysis is a core component of an EIR. *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 400. CEQA requires that an EIR analyze a reasonable range of alternatives. This EIR fails to do so. CC5-7

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CEQA requires that the alternatives analysis discuss those alternatives to the project which are capable of avoiding or substantially lessening any significant environmental effects of the Project, even if those alternatives would impede to some degree the attainment of the project objective, or would be more costly. CEQA Guidelines § 15126.6(b). This EIR does not comply with this requirement. CC5-7

All of the Alternatives screened and examined in the EIR are variations **of** the SG replacement project. What is needed are alternatives **to** the SG replacement project. Earth Corps pointed out in its NOP scoping comments that 1) conservation 2) Renewable Energy Portfolio 3) distributed generation, and 4) upgraded gas fired generators should be examined, and submitted examples of each. These alternatives do not seem to have been sufficiently examined in the EIR's feasible alternatives section.

The EIR recognizes that one of the project objectives is to ensure continued supply of low cost power. (C-3). But it fails to consider even one alternative that includes various combinations of energy efficiency, renewable power, distributed generation sources, and clean conventional power sources, whether these sources are supplied by SCE, other power producers, or a mixture of the two. While the EIR gives short-shrift to replacement generation in the No Project Alternative, this is not sufficient. Instead, the EIR should consider alternative power sources as at least one of its feasible Alternatives in its analysis. Another feasible Alternative that the EIR should consider is the use of the SONGS site for installation of non-nuclear generation resources. CC5-8

The Commission's resource procurement proceeding (R.04-04-003) provides an excellent, timely opportunity to explore feasible alternatives to the SONGS SGR Project. The State's recently enacted Energy Action Plan, which the Commission is largely CC5-9

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responsible for creating, provides a suitable policy framework for this exploration. That Plan establishes a "loading order" that is to guide the Commission's and the utilities' consideration of adding resources to meet expected resource needs: first, energy efficiency; second, renewables and distributed generation; third, clean fossil fuel generation; and fourth, transmission and distribution system upgrades. CC5-9

The EIR fails to conduct its alternatives analysis within the context of the State's Energy Action Plan. The EIR should be revised to do so.

Finally, the EIR should identify an Environmentally Superior Alternative as required by CEQA (Guidelines § 15126.6(e)(2)), based on a revised alternatives analysis as discussed above. CC5-10

With regard to the transportation portion of the Project, the four bridges needed to cross the Santa Margarita, Aliso Creek, Los Flores Creek and Las Pulgas Road for all except the Beach Route are not evaluated at C.4.2.1 to determine if they can safely accommodate the arbitrary criteria assumed at B.3.2.1, page B-23. Because the load bearing capability of these bridges have been the subject of some unresolved controversy, and because the preliminary evaluation by CalTrans (C-18) is not included, a full evaluation must be included in the EIR in order to determine any potential significant impacts to these bridges, and additionally determine the feasibility of these alternative transportation routes. CC5-11

2) **No Project Alternative**

The EIR makes unsubstantiated claims that are contrary to accepted facts. For example, it states "Under the no project alternative, energy conservation would offset only a small fraction of the energy supply lost by the shutdown of SONGS" (C-39) when CC5-12

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in fact the energy conservation goals set by the Commission will have already reduced the SCE service area energy demand far more than the baseplate production capability of SONGS, not considering the low SONGS capacity factor, or the very low cost per watt saved versus cost per watt produced by SONGS. CC5-12

Likewise, Distributed Generation is dismissed, "DG does not provide a means for SCE to offset a substantial portion of the energy lost by the shutdown of SONGS," (C-39), when it clearly offers nearly every SCE **ratepayer** the ability to generate alternative power. The real question that the EIR should address is whether the subsidized cost of DG to the ratepayer will be less than the subsidized cost of SONGS generated power. The evaluation and answer to this question is crucial to the Commission's decision in the ratemaking proceeding for this Project.

The benefits of the No Project Alternative, requested for evaluation by Earth Corps at the NOP hearing (iterated at ES-12, Alternatives) include: recovery of access to and recreational use of the shoreline, unique scenic barrancas, and blufftop staging areas and eventual return of the OCA to the San Onofre State Park, as well recovery of marine habitat. Most of these benefits of the No Project Alternative appear to be lacking in the EIR. CC5-13

D. ENVIRONMENTAL ANALYSIS

The EIR impermissibly defers evaluations of environmental impacts to future surveys and studies. The EIR summarily identifies, but does not quantify, adverse environmental impacts. This is not only contrary to CEQA, it leaves the Commission without the reliable factual data necessary to form the basis and justification for approval or disapproval of the Project. CC5-14

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1) **Environmental Baseline**

The EIR applies an inappropriate and inaccurate baseline. The EIR states,

> "Included in the environmental baseline conditions are the existing NRC operating licenses for Units 2 and 3 that allow the facility to operate until 2022... The baseline, therefore, includes any potential environmental effects of operating the nuclear power plant through the end of the NRC licenses, including the time period between when the OSGs would be expected to reach the NRC-mandated plugging limit at early as 2009, if not replaced with the Proposed Project, and the end of the NRC operating licenses in 2022."

(D.1-1 to D.1-2).

The EIR's baseline is inappropriate and inaccurate for two reasons. First, the regulatory licenses, such as the NRC license, are not part of the "physical environmental conditions in the vicinity of the project." CEQA Guidelines § 15125. Nor are they an "environmental resource rare or unique to the region." Id. The EIR cannot avoid examining the impacts of future operations which is the direct result and purpose of the Project by treating the NRC license as part of the "baseline." Second, CEQA Guideline § 15125 requires that the EIR establish a baseline based on the "physical environmental conditions" as they exist at the time of the NOP, and §15126.2(a) requires the EIR examine the "changes in the existing physical conditions" caused by the Project. At the time of the NOP, the baseline included deteriorating steam generators that are not estimated to last beyond 2009 and 2010, respectively, which means that the Plant will not operate beyond those years. Therefore, for purposes of environmental impact assessment arising from the Project, the EIR must consider and analyze all environmental impacts that could result from operating the plant from 2009 and 2010 through 2021 and 2022, respectively. This would include environmental impacts such biological, air, and seismic

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impacts, etc., as well as impacts related to the generation of additional nuclear waste. It should also include an analysis of risk of operations in that time period. CC5-15

With regard to marine biology and water quality impacts, the EIR describes in abbreviated fashion the baseline state of the ocean, but offers no differential estimate of the expected changes with regard to the proposed Project versus the No Project alternative. This deficiency must be corrected in the Final EIR. CC5-16

2) **The Project's Consistency With Existing Plans and Standards**

While the EIR includes a discussion of applicable regulations, plans and standards under each environmental impact section (see e.g., D.3-45), it is unclear from the EIR whether the Project complies with all of those applicable regulations, plans and standards described. The EIR should include a discussion of any inconsistencies between the proposed project and applicable general plans and regional plans, as required by CEQA Guidelines §15125(d). (*See also, Citizens Assn. for Sensible Development of Bishop Area v. County of Inyo*, (1985) 172 Cal.App.3d 151, 175.) CC5-17

The EIR should also apply the applicable regulations, plans and standards identified to the evaluations of impact significance.

D.2 AIR QUALITY

The EIR does not recommend Best Available Technology (BAT) to mitigate particulate and diesel exhausts, such as available ultra low sulfur diesel fuels and Diesel Particulate Filters (DPFs). Nor does the EIR's No Project Alternative document the cessation of the fugitive and deliberate release of radionucliides that is allowed under SCE's license, if the Project were not approved. Nor does the EIR quantify, report and CC5-18

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mitigate by capture and storage the fugitive radioactive gases released by the opening of containment and exposure of radioactive elements. CC5-18

At D.2.5, the DEIR contemplates replacement by "new generation or transmission facilities", where the more CEQA appropriate report would be analysis of the Commission's programmatic policy for replacement with Conservation, Solar generation, Renewable Energy Portfolio, Distributed Generation and other alternatives. (D.2.6 Mitigation A.1b must include DPFs). CC5-19

D.3 BIOLOGICAL IMPACTS

In numerous places the EIR states, "All beach area within the transport route is regularly used as a military road." (e.g., D.3-32). This is not true, and the EIR does not provide any data or maps to support this statement. In fact, the military only *crosses* the beach in a few areas, primarily at Reds Beach. The military does not haul large loads all the way up the beach from Del Mar Boat Basin ("DMBB") to north of Las Flores Creek. CC5-20

The EIR baseline is inadequate in that many flora and fauna listed by the State as rare or threatened or protected as raptors or migratory species and present along the transportation route, in the barrancas, on the beach, in the Santa Margarita River, estuary, boat basin and nearshore waters, and at risk by the eight RSG transporter trips, are not even mentioned in the baseline, much less contain any risk analysis or mitigation measures to lessen impacts thereto. CC5-21

The fact that these listed flora and fauna are disturbed or "taken" by military operations is beside the point. Besides, the Marines have a whole unit dedicated to the protection of these resources, propagation and replacement of accidental or unavoidable loss and general habitat enhancement. The Marines Unit is dedicated to the avoidance of

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adverse impacts, while SCE'S Environmental Unit appears to have dedicated itself to the avoidance of Regulation. CC5-21

In pointed example, SCE has not yet even begun the mitigation required (300 acres of wetland and 300 acres of kelpbed), for Units 2 & 3 impingement and entrainment occurring from startup in 1984 until 1988 as ordered by California Coastal Commission ("CCC") in 1990. (*See* CCC Coastal Development Permit for construction of Units 2 & 3).

Neither has SCE embarked on the required restoration and return to the San Onofre State Park of the "temporary use construction staging area" or of the protection of the magnificent Inset Barrancas pledged as another Condition of Permit cited above. CC5-22

SCE's history proves that the Commission should not depend upon a promise by SCE to perform mitigation after Project approval and construction, regardless of how enforceable the plain order of a permit's condition might be.

The EIR states that other listed species known to occur en route, e.g., the southern Steelhead, known to run up the Santa Margarita River, are said to be "unlikely" to occur in Santa Margarita "Creek", one of the five largest rivers and watersheds in southern California (D.3-36). The Baseline biological data appear to be replete with errors for virtually every species. CC5-23

One of the gravest long term, but ignored, impacts of eight NSG carrier trips, is the soil compaction resulting from heavy, repeated loads on the loose unconsolidated soils at the bottom of Skull Canyon, the dune sands along the beach above the line of higher high water and in the California Least Tern (and Snowy Plover) nesting area, and in the other Barrancas. For example, roots of delicate plants endemic to these areas CC5-24

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cannot penetrate compacted soils. Sand verbena host an endemic ant of just the right size to feed a critical stage in the growth of the endangered Coastal Horned Lizard, Phrynosoma cornatum; hence, the multiple NSG carrier trips could starve out the few juvenile "horny toads" left. CC5-24

Bluff route impacts on the threatened coastal sage scrub community by direct loss from constructed and widened roadway and consequent soil compaction preventing recruitment and recovery, would inevitably adversely impact listed and endangered obligatory residents, such as the coastal Cactus Wren, California Gnatcatcher and lesser but listed species (D.5-5). Proposed studies do not constitute Mitigation, making the EIR inadequate. CC5-25

In its NOP scoping comments, Earth Corps requested that the extensive, well documented and peer reviewed Marine Review Committee BACI Studies be used to quantify the marine impacts resulting from the continued operation of SONGS if the Project is approved, since those studies document with extraordinarily high statistical reliability the enormous adverse marine impacts caused by the SONGS once-through cooling system. "This is like introducing a massive predator into the near shore waters" said Dr. James Ingrahm at the NRC licensing hearing. It does not appear that the EIR reviewed and applied these studies to its analysis of marine impacts, either in the impact section or in the No Project alternatives section. CC5-26

The EIR states that "no work on the sea floor would occur." (B-11.) The only support for this conclusion is an SCE data response which makes the conclusory statement without any supporting evidence. Apparently, no study has been conducted to determine whether in fact the size and weight of the barges containing the new steam CC5-27

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generators will require dredging of the Del Mar Boat Basin (DMBB). The EIR contains no data as to the depth of the DMBB. This is especially problematic given the recent storms which washed significant amounts of sediment into the DMBB from the Santa Margarita River. This issues need to be analyzed in the EIR in order to determine whether the transportation segment of the Project will cause significant environmental impacts to the Ocean floor. Accepting SCE's conclusion without requiring studies and data to back it up violates CEQA. "Argument, speculation, unsubstantiated opinion or narrative, evidence which is clearly inaccurate or erroneous... is not substantial evidence. Substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts." (CEQA § 21082.2, subd. (c); Guidelines § 15384)

CC5-27

CEQA requires an EIR to thoroughly investigate environmental conditions. (Guidelines § 15144, ["an agency must use its best efforts to find out and disclose all that it reasonably can"]; *Berkeley Keep Jets Over the Bay Committee v. Board of Port Com'rs* (2001) 91 Cal.App. 1344, 1370.) Here, the Commission has merely accepted the proponent's conclusory statement without any requiring the necessary investigation or providing supporting documentation or data.[1]

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Further, the EIR states, "Barges would enter the Camp Pendleton Del Mar Boat Basin and be moored at an existing bulkhead on the northwestern corner of the boat

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[1] Indeed, the DMBB received heavy sediment loads resulting in a sand bar blocking access due to the heavy storms during the last heavy rain season. However, the EIR fails to consider or evaluate the draft of the barges bearing the RSGs, the current depth of the Basin, the constituents and quality of the Basin sediments, and whether dredging might be required (D.3-2).

The Santa Margarita River was raging at flood stages far beyond the 6 inch maximum depth for much of the 2004/5 winter. But the EIR fails to provide a history of those Santa Margarita River flows which would preclude the use of the Preferred Beach Route during the winter season.

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basin.... SCE believes that this type of activity is consistent with MCBCP's current use of the boat basin, which includes shipments of large military equipment... and that the area is already suited to accommodate the steam generators... "(B-11). SCE's "belief" is not enough to satisfy the requirements that the EIR be an informative document and that the lead agency use its best efforts to investigate and identify all potentially significant impacts. The EIR should be revised to include information about whether the steam generators' delivery by barge is in fact consistent with MCBCP's current use of the boat basin. The EIR should identify whether or not military equipment delivered to the DMBB is similar in size and weight as the new steam generators. This will help inform the public and decisionmakers about the likely impact to marine habitat that delivery of the steam generators will have.

CC5-29

The EIR should also discuss the potential likelihood of the applicant to obtain a § 404 Permit under the Federal Clean Water Act from the U.S. Army Corps of Engineers for impacts to waters of the U.S., either resulting from the river crossing or boat basin dredging.

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D.5 GEOLOGY, SOILS, and PALENTOLOGY

With regard to the environmental setting, the EIR is dismissive of the glaring hazards on "the gently sloping coastal plain in the project area." The EIR makes no mention of the active Christianitos Fault lying **directly under Unit 3** and whose surface rupture forms the southern border of the SONGS boundary with the San Onofre State Park where the top profile is clearly visible and easily observed from the beach. Although this rupture and vertical thrust of ten to thirty feet occurred some 20,000 years ago in the Recent Pleistocene as determined by the overlying sediments, it clearly has the capability

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of repeating this event, as measured creep builds stress along the fault line to the point of structural failure. Measurements of seismic activity on this Thrust Fault has been published in the last decade. The Christianitos Fault intersects with the southern reach of the Santa Monica-Baja fault system, (also called the Rose Canyon fault) to the south and the Inglewood-Newport fault to the north, just three miles offshore. Second in length only to the San Andreas fault system, it is called the Hosgri fault where it lies a similar three miles offshore the Diablo Canyon Nuclear Power Plant (see testimony of Jay Namson). Many expert evaluations of this system have set its' capability in excess of Reichter 7.0. Other experts have testified that motion along this section of the Santa Monica-Baja fault system could trigger thrust motion along the Christianitos fault under SONGS. The EIR is silent about these geophysical structures, instead states "No known active faults immediately underlie the areas of Proposed Project activities; therefore, the potential for fault surface rupture along the proposed transportation route and at the SONGS site is low" (D.5-6). This is inaccurate and erroneous. While the probability of a seismic event occurring during the transportation of the NSGs is low, the probability of such event during the operational life of SONGS resulting from the Project, has not been considered..

There is a potential high probability that such a seismic event will occur during the time that the spent fuel and high level radioactive waste is stored onsite in dry cask storage, including the extra waste generated by the extended plant operation enabled by the Project. A seismic event equal to the twenty foot vertical thrust of the geologically recent past is inevitable prior to the radioactive waste generated by this project has

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decayed to safe levels (D.5-6). Proposed studies and monitoring of seismic events do not constitute mitigation. CC5-31

"Ground shaking (that) could compromise the integrity of the OSG Storage Facility" (Impact G-6, page D.5-20) is not the primary concern from Earth Corps' perspective. Earth Corps is concerned with any ground shaking effect on the reactor itself, its containment structure, and onsite spent fuel pools and dry cask high level waste storage. Such considerations are not addressed in the EIR. The promise to "prepare an updated Safety Analysis Report" (D.5-20) does not constitute mitigation. Indeed, such a Report has been promised, mandated and conditioned by various permits for decades, but has yet to be accomplished. CC5-32

Landslide Hazards, although not directly threatening the SONGS reactors and facility itself like seismic hazards do, are similarly dismissed as inconsequential "due to the gentle slope of the Project area" (D.5-7). But nearly all of the preferred beach routes (Fig. B-6a and B-6b) lie directly beneath the unstable San Mateo sandstone bluffs, which are undercut by wave action, and which periodically slump into the sea below. The probability of such event occurring during NSG transport and the consequences to NSG, transporter, personnel and the environment, as indeed recently occurred at Blacks' Beach to the south, where the same San Mateo formation failed, burying beachgoers beneath hundreds of tons of clastic flow, just cannot be dismissed. Such event would close the beach to any travel for an extended period. Should the NSG carrier be en route, it may be irretrievably isolated until carried out to sea by wave action. More probable is that the beach routes may become impassable before NSG arrival at the San Clemente dock. These risks and consequences must be evaluated. The EIR does indicate (D-5.7) that CC5-33

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bluff collapse might be precipitated by the transport of such heavy loads along the bluff top routes (Fig. B-6c and B-6d), but does not evaluate load versus structural strength and bearing capability of the underlying sandstone, nor contemplate the consequence of the NSG riding the slump into the sea. Such events must be considered and the consequences reported in the EIR. Proposed monitoring and studies, (G-1a, page D.5-18,) do not constitute mitigation, making the EIR inadequate.

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D.12 SYSTEM AND TRANSPORTATION SAFETY

1) Spent Fuel Risk

The EIR makes reference to spent fuel risk only in terms of the baseline conditions. (D.12-6). However, as explained above, the EIR uses an inaccurate baseline because it assumes operation of SONGS Units 2 & 3 through the NRC licensing period, and not through the actual, on the ground situation: that SONGS Units 2 and 3 would have to be shut down in 2009-2010 but for the Project.

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The impact analysis for Spent Fuel Risk should explicitly discuss the spent fuel risk impacts associated with operation of SONGS Units 2 & 3 from 2009/2010 through 2021/2022 in order to disclose to the public and decision-makers an accurate picture of environmental impacts resulting from the proposed Project.

The EIR states, "When SONGS was originally built, the spent fuel pools were designed to hold a limited number of fuel assemblies, accommodating the fuel used by Units 2 and 3 through roughly 2007... The Applicant applied to the NRC and received approval to re-rack the spent fuel storage pools and increase the density of spent fuel storage in the pool." (D.12-6). The EIR should disclose how long the pools will now be able to store spent fuel from Units 2 and 3.

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2) **Facility Security and Terrorism Issues**

The EIR is deficient in its analysis of risks associated with large-scale radiological release resulting from a successful terrorist attack against a nuclear facility. The EIR implies that the NRC's new design basis threat (DBT) is sufficient to defend against a terrorist attack. (D.12-11). Evidence suggests that this is not so. For example, Dr. Gordon Thompson, an expert on nuclear security issues, provided written testimony discussing in detail various types of attacks against nuclear facilities and evaluated the effectiveness of existing and probable security measures required by the NRC in thwarting and/or mitigating the effects of such attacks. Dr. Thompson concluded that the current NRC DBT is insufficient to address the full range of likely threats from terrorist attacks. (See Appendix A; Dr. Gordon Thompson's testimony). Furthermore, the EIR does not discuss what sorts of attacks could be orchestrated against SONGS, nor the types of security measures that the NRC is likely to have required. The classified nature of security plans does not preclude the EIR from evaluating ongoing security risks associated with operating a nuclear facility. Furthermore, it can be fairly easily deduced what security measures the NRC has required. (See Appendix A; Gordon Thompson's testimony at pp 12-16).

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The EIR also incorrectly states, "Terrorist attacks by fire or explosion would be analogous to external natural events, [such as earthquakes, tornadoes, floods, and hurricanes], and their implications for damage and release of radioactivity," and that since SONGS has been designed to protect against such external natural events, there is no substantial risk for radiological release resulting from a terrorist attack. (D.12-11). But there is no evidence to support this statement. In fact, Dr. Thompson's testimony

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supports a contrary conclusion. (Appendix A at pp. 17-18). For example, Dr. Thompson discusses a U.S. Government study that describes the ability of a shaped-charge explosive device to breach a containment structure, and that such a device could be easily deployed using a small civilian aircraft. These aircraft are commercially available in the United States, and are not regulated. (Id., pp. 20-22). CC5-36

The EIR also should have analyzed whether or not an attack designed to release a large amount of radioactive material would necessarily involve external strikes against the facility, or might also occur from a vantage point inside the facility (i.e., if attackers were able to infiltrate the plant). As just one example of the former, in his written testimony, Dr. Joram Hopenfeld describes the vulnerability of the secondary loop, which is not protected by the containment structure, to terrorist attack. (Appendix B, pp.12-15) CC5-37

The EIR acknowledges none of the above potentials, and in so doing, significantly understates the risk of catastrophe associated with a terrorist attack.

The EIR further discounts the potential threats posted by terrorist attacks based on a report issued by EPRI indicating that the containment structure of a reactor would not be breached by the impact of a wide body commercial aircraft. (D. 12-11). The EIR fails to consider that such an aircraft is but one of many different means that could be used in acts of terrorism against a nuclear power plant. (See *infra*).

3) **Aging Components**

The EIR states, "Equipment and infrastructure aging at SONGS is also an issue, reflected by the need to replace the steam generators. All equipment at SONGS has a limited useful service life, with reliability being a concern as equipment ages... continued operation of SONGS would result in an increased probability of component failure and CC5-38

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an accidental release." (D.12-27). The EIR's evaluation of aging equipment-related failures and associated catastrophic risk is deficient. The EIR should at least attempt to describe and quantify the comparative probability that component failure will occur as a result of aging equipment with and without the Project.

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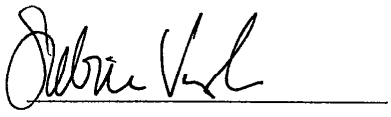
E. CONCLUSION

The EIR fails to comply with CEQA and therefore fails to provide an adequate basis upon which this Commission can approve or disapprove the proposed Project. Accordingly, the EIR must be redrafted to correct the above-referenced deficiencies, and re-circulated for public review and comment.

Dated: May 31, 2005

Respectfully Submitted,



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Attachments (via U.S. Mail)

Responses to Comment Set CC5
California Earth Corps

CC5-1 The Draft EIR only evaluates those components of the Proposed Project that have been included by the Applicant, SCE. SCE has not applied for replacement of the primary and secondary cooling loops, valves, and instrumentation as part of this process. Replacing coolant loops and the reactor head flange would not be part of the Proposed Project. Therefore, it would be considered speculative under CEQA to evaluate the replacement of components that have not been included in the Applicant's application. The Draft EIR did evaluate potential impacts associated with the temporary opening that must be cut in the containment dome in order to remove the OSGs (see the subsection entitled Original Steam Generator Removal, Staging, and Disposal in each issue area under Section D of the Draft EIR).

CC5-2 The installation of a second containment structure over the repaired containment structure is not anticipated, nor is it included as part of the Proposed Project (see Draft EIR Section B). The design of the SONGS Unit 2 and 3 containment structures are considerably different than that of Unit 1, which had been previously designed to less stringent safety measures, and no additional structural modifications beyond those described in Section B.3.4.2 would be required. There are several steps and components required to create an opening in the containment structure. The relative impact on overall containment structure integrity is a function of the procedures to remove and replace each component.

As noted in Section B.3.4.2, the SONGS 2 & 3 containment buildings are composed of reinforced concrete walls over four feet thick with an interior steel liner and tensioned with horizontal and vertical tendons. To facilitate steam generator replacement, an opening approximately 28 feet by 28 feet would be created in each containment building above the existing equipment hatch. The process of creating the opening would begin with the detensioning and removal of the structural tendons. There would be no loss of structural integrity when these tendons are replaced since they will be reinstalled in the same manner as they were originally when the structures were constructed.

Removal of the 28-foot-by-28-foot concrete section would require cutting the concrete and rebar. This is the procedure during which the containment structure would have the most potential to lose structural integrity. Replacement of this section of concrete and rebar would require that the rebar associated with the replacement section be tied in to the existing rebar in the containment structure. This is a common procedure that involves removal of a sufficient amount of the concrete from the edges of the opening to securely attach the new rebar to the existing containment structure rebar array. Typically, this would result in a considerable amount of rebar overlap and a section of concrete and rebar that is as strong as or stronger than the original design.

Removal of a section of the steel liner will also be required. Little or no loss of structural integrity would occur as a result of removing a section of the steel liner since the reinstallation of the liner would result in sections of the liner that are stronger than the original liner.

Cutting the temporary opening and closing it would involve modifying the most important safety-related structure in the nuclear power plant; therefore, comprehensive NRC inspec-

tion and oversight would occur as described by NRC Inspection Procedure 50001 (NRC, 2000). See Section B.3.4.2 of the Draft EIR for more information on NRC oversight and inspection.

SCE has stated that it has no current plans to extend the life of the power plant beyond the current license periods as stated in Section D.1.2.2 of the Draft EIR. Please also see Master Response MR-2 (License Renewal).

The cost of power available to ratepayers is not within the scope of the EIR. CEQA does not address cost or ratepayer benefit in the evaluation of the Proposed Project or alternatives, as noted in Draft EIR Sections A and D.1.2.5. These issues are addressed by the CPUC in the General Proceeding (A.04-03-026) for the Proposed Project.

CC5-3 The comment asserts that operation of SONGS 2 & 3 until 2022 would create environmental impacts attributable to the Proposed Project, and that the Project Description and scope of Draft EIR analysis are incorrect. As noted in Draft EIR Section D.1.2.1, ongoing SONGS operations and the existing licenses that allow continued operation until 2022 are both aspects of the environmental baseline. Please also see Master Response MR-1 (Baseline).

The purpose of the EIR is to evaluate the potential environmental impacts expected to result from the Proposed Project, which is the replacement of steam generators in SONGS Units 2 and 3, and not the ongoing operations at SONGS. The operating SONGS nuclear power plant and the existing operating licenses are part of the baseline, and as required by CEQA, these conditions are the context in which the impacts of the Proposed Project must be considered. CEQA Guidelines Section 15358(b) indicates that project-related "*effects analyzed under CEQA must be related to a physical change*." The continuation of baseline conditions will not result in a physical change in the environment. Therefore, the continued operation of the power plant in accordance with its previously approved licenses would not represent a physical change requiring environmental review as part of the Proposed Project. The Draft EIR appropriately acknowledges that plant operations would cease if the steam generators were not replaced, and the effects of this change are described in the analysis of the No Project Alternative. Please see Responses CC2-1 and CC2-2 on the adequacy of the No Project Alternative analysis.

CC5-4 The comment asserts that the Proposed Project causes impacts by extending the duration of plant operation. As noted in Response CC5-3 above, ongoing SONGS operation occurs in the baseline conditions, and continuation of baseline conditions would not represent a physical change in the environment. Extending the life of the plant's operation would require renewal of the NRC licenses. As explained in Master Response MR-2 (License Renewal), license renewal is not a reasonably foreseeable consequence of the Proposed Project and thus need not be considered as part of the EIR. Moreover, the CPUC is preempted by federal law from regulating issues associated with plant operations. See Master Response MR-3 (Jurisdiction).

CC5-5 The comment concerns activities and emissions that would occur outside the air basin in which the Proposed Project is located. Emissions of marine vessels importing RSGs to the Port of Long Beach would occur largely offshore, outside the 3-nautical mile boundary of State waters where no local California air district standards would apply, including those of the San Diego County Air Pollution Control District (SDAPCD). Marine vessel emissions

within the SDAPCD are included in the regionwide inventory and are not expected to impede attainment locally (as noted in Draft EIR Section D.2.3.1). Port operations necessary for the Proposed Project outside of the SDAPCD, including tugboats at the port and emissions from transferring the RSGs from a heavy-load ship to barges would occur within the scope of routine port operations at the Port of Long Beach, and are therefore, part of the "baseline" conditions for regular port operations. Therefore, an evaluation of project-related emissions caused by transport through the South Coast Air Quality Management District non-attainment area is not required, and no impact would occur. These shipping activities would not be unique to the Proposed Project, nor would they occur within the air basin affected by the project. Emissions from tugboats that occur within the project area air basin (San Diego County) affected by the project are described in Section D.2.3.2. Regulations governing the traditional shipping methods are identified in the Draft EIR (page B-11). The Pier J, S, and T facility improvements noted by the comment are not related to the Proposed Project and the Proposed Project could be implemented with or without those expansions.

CC5-6 Potential impacts associated with OSG transportation were evaluated in Draft EIR Section D.13. After removal from containment and packaging for safe shipment, the OSGs would be transported offsite via rail. The Applicant proposes to make arrangements with the railroad operators and owners as discussed in the Project Description (Section B). As described in Draft EIR Sections A.4.1 and D.1.2.5, the NRC maintains pre-emptive jurisdiction over State and local regulations regarding the proper handling and transport of nuclear materials, including the original steam generators. At the federal level, the NRC and the U.S. Department of Transportation jointly regulate the transportation of radioactive materials. No potentially significant safety risks would occur (see Section D.12.3.4, Impact S-3 regarding residual contamination) in light of the established procedures and regulatory control of disposal activities. See Section A.4.4 for more information on waste transport offsite. Through the proposed coordination with railroad operators, potential impacts to railroad traffic are expected to be less than significant.

CC5-7 The comment identifies alternatives, such as energy conservation or replacement power generation via alternative energy resources that could be consequences of the No Project Alternative, and claims that they have not been sufficiently examined as feasible alternatives to the Proposed Project. Energy conservation or replacement power generation are not true alternatives to the Proposed Project, as suggested by the comment. The Proposed Project is the replacement of steam generators at SONGS, not the replacement of power plant operations or power generation. The only relevance of energy conservation or alternative energy resources is as part of replacement generation scenarios considered in the Draft EIR under the No Project Alternative.

The Draft EIR analyzes alternatives relevant to accomplishing various aspects of the Proposed Project. Section C.2 of the Draft EIR describes the alternatives development and screening process. The alternatives were developed consistent with *CEQA Guidelines*, Section 15126.6(a), which states that "*an EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decisionmaking and public participation. An EIR is not required to consider alternatives which are infeasible. . . . There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason*." The CPUC screening process eliminates infeasible alternatives such as those that do not meet most of the

basic project objectives. Replacement energy generation would not meet the basic project objectives. However, possible replacement power options, which are at this time uncertain and undefined, are nonetheless considered as they could occur under the No Project Alternative. The replacement power scenarios identified by the comment are appropriately considered in the description of the No Project Alternative in Section C.6 of the Draft EIR. Please also see Master Response MR-1 (Baseline) regarding the definition of the No Project Alternative, and Responses CC2-1 and CC2-2 above regarding the adequacy of the No Project Alternative analysis.

CC5-8 Section C.6 of the Draft EIR under the No Project Alternative analyzes combined cycle gas turbine power plants; replacement transmission facilities; alternative energy technologies, including solar thermal power, photovoltaics, wind turbines, geothermal power, hydroelectric power, biomass power, and fuel cells; and system enhancement options such as demand-side management and distributed generation. The No Project Alternative does not preclude the potential use of any of these replacement technologies, but because there is no way to predict exactly how market forces, private investment decisions, etc., would provide replacement power, the Draft EIR does not analyze a specific scenario (Draft EIR Section D.1.2.3). Please also see Responses CC2-1, CC2-2, and CC5-7 for further information on the adequacy of the No Project Alternative analysis.

CC5-9 The comment presents information about the CPUC's resource procurement proceeding, R.04-04-003 (Order Instituting Rulemaking to Promote Policy and Program Coordination and Integration in Electric Utility Resource Planning), and California's Energy Action Plan. In addition, the commenter suggests that the aforementioned proceeding and Energy Action Plan would provide good opportunities to identify feasible alternatives to the SONGS Steam Generator Replacement Project. The Draft EIR properly includes SCE's project objectives as a basis upon which to analyze feasible alternatives to the Proposed Project. The Draft EIR is not intended to evaluate whether the Proposed Project is needed or whether approval of SCE's application is consistent with the CPUC's regulatory responsibilities. Regulatory mandates associated with the State's Energy Action Plan, State environmental policies or the CPUC's resource procurement proceeding may be considered by the CPUC in the General Proceeding (A.04-02-026) for the Proposed Project. However, these issues are outside the scope of environmental review under CEQA.

CC5-10 As noted in Responses CC2-1, CC2-2, and CC2-7, the analysis of alternatives and the No Project Alternative in the Draft EIR is sufficient, and therefore the Environmentally Superior Alternative remains unchanged.

CC5-11 Contrary to the commenter's claim, physical impacts to roads and bridges are not environmental impacts. California Vehicle Code Sections 35780-35782 requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways. The permitting jurisdiction has a right to withhold the permit "to protect against injury to the road." The Applicant would be required to obtain transportation permits and satisfy the requirements on those permits, such as speed limits, any evaluation of bridges, overpasses, etc., to safely accommodate the load for which the permit is obtained. In addition, a bond would be secured from the Applicant in lieu of any accidents.

CC5-12 Please see Responses CC2-1 and CC2-2 regarding the scope of the No Project Alternative analysis. The energy conservation goals set by the California Energy Action Plan adopted

by the CPUC in 2003 are merely goals, and there no guarantees that the predicted energy savings will actually occur. In addition, Energy Action Plan II (proposed for adoption in August 2005) has yet to set definitive conservation goals. Demand-side management and distributed generation (DG) are not alternatives to the Proposed Project, as suggested in the comment. The Proposed Project is the replacement of steam generators at SONGS, not the replacement of power plant operations or power generation. Demand-side management and DG are relevant only as part of replacement generation scenarios under the No Project Alternative.

Distributed generation technologies (Draft EIR Section C.6.4.2) are recognized as important resources to the region's ability to meet its long-term energy needs, but DG does not provide a means for SCE to replace the 2,150 MW of base-load generation of SONGS, because of the comparatively small capacity of DG systems and their relatively high cost. Consideration of DG as the sole replacement power generation source under the No Project Alternative is not feasible because no single entity has proposed implementing a substantial DG program. Broad use of distributed resources would likely require regulatory support and technological improvements. There could also be regulatory feasibility issues with lengthy local permitting including: air permits, which influence equipment selection; land use approvals including environmental review (e.g., for noise and aesthetics); and building permits.

CC5-13 The benefits of the No Project Alternative, including the recovery of local marine habitat, have been identified in the Draft EIR, and additional information has been provided throughout Section D of the Final EIR to clarify possible benefits. The commenter presents possible benefits of the No Project Alternative. However, not all of the listed actions would actually occur as a result of an early SONGS shutdown under the No Project Alternative. It is likely that most of the SONGS property would remain off-limits to the general public after shutdown, and therefore reclamation of this area for access or recreation would not occur. In addition, depending on how the facility were ultimately decommissioned (a process requiring separate NRC approval and public involvement), it might remain a permanent visual blight to those viewers in the area surrounding SONGS.

CC5-14 This comment asserts that the Draft EIR defers evaluations of impacts and that it does not provide the level of information needed to inform the CPUC of the environmental consequences of the Proposed Project. No specific examples of perceived deficiencies in the Draft EIR were identified by the comment. Please see Responses E-2 and CC4-5 for further discussion on the level of detail required by CEQA.

Due to the lack of specificity provided by the comment, a detailed response cannot be provided. Responses below address more specific issues raised by the commenter. In general, however, the Draft EIR has identified impacts to the extent feasible based on information known about the Proposed Project and reasonable assumptions regarding the implementation of the project. CEQA Guidelines Section 15151 (Standards for Adequacy of an EIR) states that "*An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible.*" The evaluation of potential project-related impacts

is considered adequate to promote informed decision-making and to comply with CEQA requirements regarding adequacy, completeness, and a good-faith effort at full disclosure.

CC5-15 Please see Master Response MR-1 (Baseline). The environmental setting, or baseline, is based on the environmental conditions that existed in the project area in October 2004 at the time the notice of preparation was published, as required by CEQA. The environmental baseline includes an operating nuclear power plant at SONGS and the existing NRC operating licenses for Units 2 and 3. The operating licenses were approved after federal environmental review to allow the facility to operate until 2022. The comment claims that impacts could occur from ongoing operations of SONGS in time period between the likely shutdown of SONGS without the project and the expiration of the operating licenses. However, because the environmental baseline includes the permitted operation of SONGS through 2022, the effects of its ongoing operation are not a consequence of the Proposed Project. The Draft EIR's analysis of the No Project Alternative identifies the beneficial impacts to local conditions that would be achieved by terminating power generation at the SONGS.

CC5-16 The impacts to marine biological resources and water quality under the Proposed Project and the No Project Alternative are analyzed and presented in Draft EIR Sections D.3 and D.7, respectively. Section C.6 presents additional information on different scenarios under the No Project Alternative, and under the No Project Alternative certain beneficial impacts would occur to local marine biology because of the early shutdown of the cooling system as identified in the EIR. The locally-beneficial effects of the No Project Alternative are included in the comparison with the Environmentally Superior Alternative in Section E.3 of the Final EIR. Based on this full evaluation and weighing *all* issue areas, the No Project Alternative was *not* found to be overall environmentally superior to the Proposed Project. The Environmentally Superior Alternative is the Proposed Project with the MCBCP Inland Route Alternative.

CC5-17 As described in the Local Ordinances and Policies section under Draft EIR Section D.8.2, the Proposed Project would occur exclusively on lands within the jurisdictions of MCBCP and San Onofre State Beach. The managing agencies of these lands would need to issue permits to authorize the Proposed Project, as noted in Table A-1 of the Draft EIR, which would ensure consistency with their established policies. Additionally, the California Coastal Commission, as a Responsible Agency under CEQA, indicated it will provide review and permitting of the project in conformity with the California Coastal Act. CEQA requires the EIR to discuss only the conformity to plans and policies adopted for the purpose of avoiding or mitigating a significant environmental effect. Local ordinances, plans, and policies, where applicable, are identified throughout Section D of the Draft EIR (e.g., Section D.2.2 for local air quality plans). The analyses of local ordinances and policies, as written in the Draft EIR, are sufficient to comply with CEQA requirements. No additional analyses of local ordinances and policies are necessary.

CC5-18 The Proposed Project would cause short-term emissions of particulate matter and equipment exhaust as identified in Section D.2.3 of the Draft EIR. Mitigation Measures A-1a and A-1b would require SCE to control dust and exhaust emissions, and use low-emission transport equipment. With implementation of these measures, potential air quality impacts of the Proposed Project would be less than significant and would not warrant additional control such as the diesel particulate filters identified by the comment. The comment asserts that emissions of radioactive gases would warrant capture and storage. Opening the

containment structure under the Proposed Project would first involve de-fueling the reactor, which would eliminate the fuel source of radioactivity. As explained in Section D.12.3.4, regulatory oversight by the NRC will help to further ensure that potential safety impacts are less than significant. Emissions from routine SONGS operations (i.e., any releases allowed by the existing licenses) are a component of the baseline conditions, and the Final EIR includes revisions to note that these emissions would cease under the No Project Alternative.

CC5-19 The definition of the No Project Alternative in Draft EIR Section C.6 does not preclude the potential use of conservation or alternative energy technologies. However, the unique technical feasibility limitations of most renewable energy sources make them unable to be sole replacement generation for base-load facilities such as SONGS. As stated in Responses CC2-1 and CC2-2, detailed analysis of specific scenarios would not be possible or meaningful because it would be unduly remote and speculative to forecast exactly how any replacement power would be provided given the wide range of possibilities, including type, size, and location. Responses CC5-9 and CC5-12 describe the policy factors that are properly considered by the decision-makers as part of the rate-making proceeding, but not as part of the EIR.

CC5-20 The beach from the Del Mar Boat Basin to Red Beach on MCBCP is a training ground for the operation of amphibious vehicles. According to the Marine Corps, military vehicles and some authorized civilian vehicles travel along the Beach and Road route proposed for transport of the RSGs daily. Travel along this route often includes caravans of greater than 20 vehicles of armored amphibious tracked vehicles, tanks, seven-ton trucks, and other military transport vehicles. One such caravan was observed on November 5, 2004 while EIR preparers and biologists were participating in a survey and site visit of the three proposed RSG transport routes. Evidence of military activities along the entire length of the proposed Beach and Road Transport Route is seen in Figures D.3-2 through D.3-10 of the Draft EIR.

CC5-21 Relevant literature and biological documentation, including the Integrated Natural Resources Management Plan (INRMP) (MCBCP, 2001), SONGS 1 Environmental Assessment (URS, 2002), the Proposed Project Proponent's Environmental Assessment (PEA) (URS, 2004), and the California Natural Diversity Database (CNDDB) (2004) for the Las Pulgas, San Onofre Bluff, San Clemente, and Oceanside USGS Quadrangles, was reviewed prior to preparation of the Draft EIR. Using these sources, the vegetation communities and sensitive species locations were mapped, and used to determine the potential direct or indirect impacts to sensitive flora and fauna for the Proposed Project and Transportation Route Alternatives. Tables D.3-1 and D.3-2 list all sensitive flora and fauna, respectively, within or adjacent to the project area. These tables also include species habitat requirements and their potential to occur directly within or adjacent to the project area, including the proposed Beach and Road Transport Route. The commenter did not reference the specific species that it believes were not included in the baseline. In their comments submitted on May 31, 2005, the California Department of Fish and Game (CDFG), the regulatory agency presiding over State-listed species, did not state that any species were missing from the impact analysis. In fact, the CDFG offered concurrence with the timing of the transport activities (proposed for outside of the nesting season) and with the proposed precautionary and mitigation measures to protect sensitive species (see Comment G-1).

Section B.3.3.2 of the Draft EIR lists Biological Avoidance and Minimization Measures that are modified versions of the programmatic instructions taken directly from Appendix D [Estuarine and Beach Ecosystem Conservation Plan (EBCP)], of the MCBCP INRMP that was developed as part of the 1995 United States Fish & Wildlife Service (USFWS) Biological Opinion for ongoing military activities within the estuarine and beach areas of MCBCP. As confirmed by MCBCP staff, the proposed RSG transport would be similar to military activities and, therefore, subject to the programmatic instructions of the INRMP. These measures are required within MCBCP to implement the INRMP and reduce impacts within MCBCP to less than significant levels, and the EIR states that their implementation is required in conjunction with the mitigation measures that would be adopted by the CPUC (e.g., Mitigation Measure B-1a, Conduct pre-transport sensitive plant surveys). The Final EIR notes that implementation of the measures would require MCBCP approval. With these required Avoidance and Minimization Measures and the mitigation measures presented in the EIR, RSG transport would not have a significant adverse impact on sensitive flora or fauna.

As noted by this comment, MCBCP staff are dedicated to the protection, propagation, and replacement of accidental or unavoidable impacts to sensitive species. MCBCP is the lead agency for all activities that take place on MCBCP, and they are required to comply with the National Environmental Policy Act (NEPA) and other federal regulations. Therefore, Southern California Edison would apply for a Real Estate License from MCBCP prior to conducting any activities on the base. This action would trigger an environmental review by MCBCP and the preparation of a NEPA document, such as an Environmental Impact Statement (EIS) or alternative documentation. If MCBCP determines through the NEPA review that species listed as threatened or endangered may be impacted by the Proposed Project, a Section 7 Consultation with the USFWS would be initiated. See also Response B-1 and SCE-2 for information on the ability of MCBCP to accept or decline the measures proposed within this EIR.

CC5-22 Construction and operation of SONGS 2 & 3, including the relationship of SCE with San Onofre State Beach, are considered part of the baseline conditions at SONGS, and the activities of the Proposed Project would not alter the original construction activities or the fact that ongoing operation of SONGS occurs in the baseline conditions. The baseline for the Proposed Project is described in Draft EIR Section D.1.2.1. Please also refer to Master Response MR-1 (Baseline).

CC5-23 The error noted in the comment regarding the mislabeling of Santa Margarita River as Santa Margarita *Creek* occurred in only one location within the Draft EIR, in Table D.3-3 on page D.3-36, and has been corrected in the Final EIR.

Appendix D (EBCP) of the INRMP prepared by the MCBCP as part of the 1995 USFWS Biological Opinion, states that the southern Steelhead trout was historically recorded in Orange County in the San Mateo, San Onofre, and San Juan Creeks and in San Diego County in the San Diego, San Luis Rey, and Tijuana Rivers. The species was thought to be extirpated from the area until 1999 when the first reoccurrence of juvenile steelhead was observed in San Mateo Creek, located north of the project area within southern Orange County. An additional search for information regarding the historic extent of the southern Steelhead trout revealed a reference to a historic population in the Santa Margarita River, found on the Trout Unlimited California website (http://www.tucalifornia.org/socalsteelhead.htm). However, the reference

stated that "Steelhead have been extirpated from at least 11 southern California streams: San Luis Rey River, San Mateo Creek, Santa Margarita River, Rincon Creek, Maria Ygnacio River, Los Angeles River, San Gabriel River, Santa Ana River, San Onofre Creek, San Juan Creek, San Diego River, and Sweetwater River (Nehlson et al. 1991, Swift et al. 1993)." In addition, the California Coastal Commission stated that the Steelhead trout would not be present in the Santa Margarita River during the proposed SONGS 1 decommissioning project and would not be impacted. The transport activities for the RSGs would be similar to the SONGS 1 activities but in the opposite direction.

The comment did not provide a reference for its statement that "Steelhead [are] known to run up the Santa Margarita River," therefore this can not be verified. It is assumed that the resources used to complete the EIR analysis remain current and accurate, and it has been concluded that there are no current records of southern Steelhead trout from the Santa Margarita River or any of the smaller creeks within the project area. In addition, it is widely believed that the species has been extirpated from the area. Therefore, it is anticipated that the Steelhead is unlikely to occur in Santa Margarita River during the Proposed Project activities and is unlikely to be impacted by the temporary ford crossing. Section B.3.2.1 of the Draft EIR states that crossings of drainages with flowing water, including the Santa Margarita River, would not occur when water flow depth exceeds six inches. In addition, these crossings would be completed using specialized mats that would disperse heavy loads and prevent the disturbance of flowing water and open water habitats. The use of this matting was approved by the California Coastal Commission for crossing the Santa Margarita River for the SONGS 1 project (CCC 2003).

CC5-24 The beach portion of the proposed Beach and Road Transport Route will completely avoid the bottom of Skull Canyon and the dune sands in the California least tern and western snowy plover nesting areas. As described in Section D.3.1.1 of the Draft EIR, the beach portion of the Beach and Road Transport Route follows disturbed areas of beach sand that are regularly used by the military for road training and transport. As stated in Section B.3.2.1 of the Draft EIR, the beach portion of the Beach and Road Transport Route has been designed specifically to avoid sensitive resources on MCBCP to the greatest extent practical. Segments A, B, and C of the proposed Beach and Road Transport Route from the Del Mar Boat Basin to Red Beach would be on compact sand at least 50 feet from the fenced and posted snowy plover and least tern nesting areas. Segment D also avoids the steep terrain and loose soil of Skull Canyon by turning east towards the Las Pulgas off-ramp at Red Beach (see Figure B-6b).

As stated in Section D.3.1.1 and Table D.3-1 of the Draft EIR, red sand verbena is known to occur on the dunes east of the proposed Beach and Road Transport Route through Segment C. The transporters will remain on the active military beach road and therefore impacts to this species are not expected to occur. Implementation of the Biological Avoidance and Minimization Measures is required, as described in Section D.3.3.2, within MCBCP to ensure that no unauthorized or avoidable impacts occur to sensitive species. Included in these measures is the monitoring of RSG transport by a qualified biologist who would ensure that the transporter and all support vehicles remain on the designated route.

As described in Draft EIR Section B.3.2.1, transport would occur on specialized matting made of high-density polyethylene that provides a strong uniform surface. This matting is designed to distribute weight across a large surface area and has been used to transport heavy loads through

wetlands, marshlands, beach sands, and areas of open water without harming underlying environments (URS 2003). The California Coastal Commission determined that use of these specialized mats would distribute the weight of the RSG so that the pressure loading on the beach is less than that which is caused by existing military vehicles. In addition, the transport of the RSGs using these specialized mats would not be expected to exacerbate existing, ongoing impacts to sand invertebrates caused by military vehicles (CCC 2003). Therefore, it is not anticipated that the roots of delicate plants, including the red sand verbena, would be impacted by RSG transport.

CC5-25 RSG transporters would remain on dirt, sand, and paved roads with the exception of two locations where the transporter would be required to cross annual grassland and ruderal vegetation to avoid travel through Skull Canyon (see Impact B-1). The remainder of the RSG transport would occur on unvegetated beach sand, dirt, and paved roads, and therefore no direct loss of coastal sage scrub habitat is expected to occur, and no mitigation is necessary. Pre-construction surveys such as those to be implemented by the Proposed Project have been adjudged adequate to mitigate potential impacts to sensitive biological species to a less than significant level. (*Defend the Bay v. City of Irvine*, 119 App.4th 1261 (2004).) As stated in Section B.3.2.1 of the Draft EIR, the Proposed Project would occur between October and February, which is outside of the breeding season of the California gnatcatcher and the coastal cactus wren. The timing of the project was chosen to reduce the potential for indirect impacts to resident and migratory bird species due to light, noise, or foot traffic in proximity to occupied habitat. Implementation of the Biological Avoidance and Minimization Measures is required, as described in Section D.3.3.2, to ensure that no unauthorized or avoidable impacts occur to sensitive species. Included in Avoidance and Minimization Measure #1 is the monitoring of RSG transport by a qualified biologist who would ensure that the transporter and all support vehicles remain on the designated route.

CC5-26 The analysis contained in the Draft EIR relied on a large volume of studies, including peer reviewed Before/After and Control/Impact (BACI) studies. As noted in Section D.3.1.5 of the Draft EIR, available studies have clearly documented the changes that occurred as a result of the existing SONGS cooling water system. This baseline condition would remain unchanged as a result of the Proposed Project. Draft EIR Section D.3.5.2 noted the beneficial marine biological resources impact associated with the No Project Alternative and early termination of operating the SONGS cooling water system.

CC5-27 The process of mooring the barges at the existing bulkhead at Del Mar Boat Basin at MCBCP, as well the subsequent offloading via a ramp and unmooring the barge would not require work on the seafloor, as noted in the Project Description Section B.3.1. This means that no dredging should be necessary. If dredging work were to be needed, the CPUC could require additional environmental review, as this would represent a deviation from the offloading procedure analyzed in the EIR. The procedure for additional environmental review, if necessary, is described in Section H.2.1 of the Draft EIR, and it would provide opportunity for public involvement.

Similar offloading activities have been analyzed by MCBCP in its environmental review of the SONGS Unit 1 RPV Transport Project. SCE anticipates that the RSG transport phase of the Proposed Project would also undergo a similar environmental review under NEPA. All transport activities on MCBCP would be accomplished through coordination with MCBCP, and therefore, no adverse impacts are expected to occur to MCBCP's operations.

In addition, as noted in the Draft EIR, MCBCP conducts similar activities in the Del Mar Boat Basin on a regular basis. The area is used by MCBCP for its operations, including the movement of large military equipment and vessels; therefore, this area is already suited to accommodate the steam generators and associated equipment.

CC5-28 Please see Response CC5-27 above.

CC5-29 Please see Response CC5-27 above.

CC5-30 Section D.3.2 of the Draft EIR includes an overview of the Clean Water Act, specifically Section 401. Overviews of Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act have been added to this section in the Final EIR. It is likely that Southern California Edison and the MCBCP would need to obtain authorization from the Army Corps of Engineers under one or both of these regulations for the ford crossing over the Santa Margarita River and for transport within the Mean High Tide line. The possibility of requiring additional permitting is also noted for crossing low-lying areas on inland route alternatives as reflected in Mitigation Measure B-9a (Complete jurisdictional delineation for waters and wetlands in Segments AA and AC).

CC5-31 The comment makes inaccurate remarks regarding the content of the Draft EIR and the likelihood of seismic events during the period of the Proposed Project. The Christianitos Fault is not an active fault and does not lie directly underneath SONGS Unit 3. The Christianitos Fault lies approximately one mile southeast of the SONGS facility and is considered inactive. The fault is a low angle normal fault offsetting approximately 15-million-year-old (myo) Monterey Formation on the south against approximately 5 myo San Mateo Formation on the north. The fault is truncated by 120,000-year-old overlying undisturbed marine terrace deposits. This indicates that it has been at least 120,000 years since movement on the Christianitos Fault. Several small faults/shears with displacement of 3 to 6 inches were identified during excavation for the SONGS site, but they did not offset the overlying terrace deposits, also indicating no movement in at least the last 120,000 years.

Although several minor earthquakes (magnitudes 3.3 and 3.8) occurred in January 1975 near to, but not on, the trace of the Christianitos Fault (30 km north of SONGS), no compelling evidence has been found to indicate that the fault is active (CCC, 2000). This information has been added to the Final EIR.

Other issues related to the assessment of general seismic stability at the existing SONGS facility are not related to this Proposed Project. As noted in the Draft EIR Sections D.1.2.1 and D.1.2.5, the existence of the operating nuclear power plant in an active seismic environment and the seismic safety of SONGS in its current state, including the spent fuel storage facilities, are baseline issues that would not be altered by the Proposed Project. See also Master Response MR-1 (Baseline).

CC5-32 Please see Master Response MR-1 (Baseline). The earthquake exposure of existing SONGS facilities, including the reactors and spent fuel pools, is part of the environmental setting, or baseline (as described in Draft EIR Section D.5.1.4), and is not part of the Proposed Project. Whether these existing facilities might be damaged by an earthquake is also relevant only to the environmental setting, and has been previously evaluated in separate environmental reviews. Geotechnical study such as that proposed by Mitigation Measure G-6a has been found adequate to mitigate potential geology impacts to a less than significant level.

Ocean View Estates Homeowners Assoc v. Montecito Water Dist., 116 Cal.App.4th 396 (2004). The proposed Steam Generator Replacement Project involves no change to existing facilities, with the exception of the creation of temporary openings in the containment structures, which could substantially alter their resistance or susceptibility to earthquake-induced ground shaking impacts. As stated in Section D.5.3.4 of the Draft EIR, Southern California Edison is conducting structural engineering studies to determine the effects of opening on the containment structure. Oversight by the NRC would ensure that no significant effect would be caused by seismic activity during the modification of the containment structure and the removal of the original steam generators through review of the design and planning and onsite inspections.

The dry storage facility, a separate project to construct onsite storage for spent fuel, has not been constructed yet, but the effects of ground shaking on that facility were analyzed in a separate review conducted by the California Coastal Commission for the Coastal Development Permit (CDP E-00-014, noted in Section A.1.2 of the Draft EIR).

CC5-33 Although it is true that much of the proposed Beach and Road Transport Route would traverse the beach adjacent to bluffs composed of San Mateo Formation and capped by marine terrace deposits, it is not likely that any significant slumps or landslides would occur during transport of the RSGs along this route and close the beach to transport. The comment compares the stability of the bluffs along the beach transport route to the bluffs near Black's Beach (in the Torrey Pines State Park area of La Jolla) which is not a valid comparison. The bluffs near Black's Beach are more unstable because they are approximately twice the height of the bluffs along the proposed route, 50 to 60 feet vs. 25 to 30 feet, and they are composed of different geologic material. The bluffs near Black's Beach are composed of Ardath Shale, a formation composed primarily of weak, fissile shale with areas of expansive claystone which is highly susceptible to landsliding and slumping. By comparison, the bluffs along the RSG transport beach route are composed of well-cemented San Mateo Formation sandstone and well-cemented terrace deposits that tend to waste and deteriorate by rockfall or debris fall. Additionally, no significant debris slides or landslides have been mapped along this segment of bluffs. The transport of the RSGs along the beach is not likely to impact the stability of the nearby bluffs and cause rockfall or debris fall. A brief discussion of these bluffs has been added to Section D.5.1.5 of the Final EIR to clarify the potential baseline landslide hazards, and no additional potentially significant impact would occur.

Although unlikely, if transport route on the beach within MCBCP is temporarily blocked by a rock-fall or debris slide, this situation would be unfortunate, but it would not represent a substantial hazard, only a financial and schedule set-back for SCE. The RSGs would not be radioactive and would only temporarily be halted on the beach until the way was cleared. Due to the significant weight of the RSGs and their associated transport vehicles they are unlikely to be "carried out to sea."

The potential for the transport of the RSG to cause bluff collapse along the San Onofre Bluffs segment of the route is discussed in Impact G-1 (Extremely heavy loads could mobilize unstable ground along the San Onofre Bluff area of transport route), and this impact would be mitigated by application of Mitigation Measure G-1a, which requires study to establish whether the geologic formations under and adjacent to the portions of the transport route near the San Onofre Bluffs are sufficiently stable to withstand the extremely heavy loads. This

study would require that any and all unstable portions of the transport route be clearly identified and that road improvements be implemented to ensure ground stability of all roads to be used during transport. There is little to no hazard that the RSG transport would "ride a slump into the sea" since the stability of the route would be verified prior to transport with Mitigation Measure G-1a. It is also anticipated that there would be no hazard to beachgoers due to the implementation of Mitigation Measures G-1a (Prevent overloading of unstable ground along transport route) and V-1a (Request decision on closure of San Onofre State Beach) during RSG transport activities. Any potential impact to public or worker safety would be reduced through these measures to less than significant levels.

Detailed slope analysis is not appropriate at this time due to the projected long lead-time before start of the transport activities (estimated to begin in late 2008 or 2009). The condition of the slopes and landslides along the San Onofre Bluffs could be substantially different when the RSGs are transported. In the intervening three to four years, slope erosion and landslides could possibly occur, and Mitigation Measure G-1a includes a schedule that provides sufficient timing to establish repairs in advance of the transport. Slope stability analyses and identification of specific measures to avoid potential impacts to the slopes/bluffs should be conducted closer to the actual start of the project to ensure that the analyses are based on actual geologic conditions at that time.

CC5-34 Please see Master Response MR-1 (Baseline). The environmental baseline correctly includes ongoing operation of SONGS, which includes the risk associated with spent fuel storage, through the current license terms. Therefore, the impacts of this risk through 2022 are part of the baseline and are not changed as a result of the proposed Steam Generator Replacement Project. As stated in Section D.12.1 under Spent Fuel Risk Baseline of the Draft EIR, re-racking of the spent fuel pools (SFP) is part of the baseline, and this activity which was unrelated to the Proposed Project, was necessary to temporarily accommodate spent fuel storage prior to construction of the dry cask facility. Potential hazards associated with spent fuel handling, both at the spent fuel pool and the approved, but yet-to-be-constructed, independent spent fuel storage installation (ISFSI) were addressed in the environmental documents prepared for ISFSI. Please also see Response CC5-32.

As noted in the EIR, the probability of an accidental release associated with spent fuel also increases with time as more spent fuel is accumulated. The Proposed Project would not result in the continued accumulation of spent fuel in the pools or an increase in the number of storage casks beyond that allowed by the current NRC licenses. As the ISFSI is constructed in a phased approach, greater quantities of spent fuel could be safely stored. As stated in Draft EIR Section D.12.5, the No Project Alternative would result in over 1,000 less spent fuel assemblies being moved into storage during the 13 years leading up to NRC license expiration. Therefore, the No Project Alternative would reduce the risk associated with spent fuel handling, resulting in a beneficial impact.

CC5-35 Potential hazards associated with risk of terrorist attacks at the SONGS were discussed in Section D.12.1 of the Draft EIR. Since SONGS is an operating power plant, terrorism risks are considered to be part of the CEQA baseline. The potential impact of a terrorist attack caused by the Proposed Project (Impact S-5) was found to be less than significant. In evaluating alternatives to the Proposed Project, the Draft EIR did find that there would be a beneficial impact, and a much lower probability of terrorist attack, if SONGS were to cease operations under the No Project Alternative (see Draft EIR Section D.12.5). However, the

risk of a terrorist attack on the spent fuel storage facility would still exist since there are no offsite storage or disposal locations for the SONGS spent fuel. Therefore, the risk of a terrorist attack on the SONGS spent fuel facilities will continue for the foreseeable future regardless of the outcome of the Steam Generator Replacement Project.

As stated in Section A.4.5 of the Draft EIR, NRC has the responsibility for ensuring the safety and security of nuclear plants and material, and the NRC's jurisdiction includes plant safety and the risk of radiation exposure from normal or upset conditions. Please also refer to Master Response MR-3 (Jurisdiction) regarding the issues for which NRC regulation preempts that of the CPUC. The comment also notes that specific types of attacks and the types of security measures that the NRC is likely to have required should have been evaluated in the Draft EIR. Section D.12.1 (under Facility Security and Terrorism Issues) of the Draft EIR does identify a variety of terrorist events that could occur at SONGS, but it is beyond the scope of the EIR to reconsider the existing NRC Design Basis Threat (DBT) for SONGS and the SONGS security plans.

CC5-36 The comment mischaracterizes the analysis contained in the Draft EIR related to terrorism risk. The Draft EIR did note in Section D.12.1 under Facility Security and Terrorism Issues that ". . . *it is unlikely that a terrorist attack on a nuclear reactor would result in a large-scale radioactivity release*." However, the EIR analysis in Section D.12.5 continues to describe that ". . . *consequences associated worst-case nuclear power plant accidents would be substantial*," and that the ". . . *No Project Alternative would lead to a cessation of SONGS operations, which would reduce the consequences of a terrorist attack, resulting in a beneficial impact (Class IV)*." Clearly, the Draft EIR evaluated and recognized the risk and consequences associated with a terrorist attack on the SONGS reactors and spent fuel facilities. Dr. Gordon Thompson's testimony and the information referenced by the commenter, were considered during preparation of the Draft EIR. The opinions of Dr. Thompson on the adequacy of baseline NRC security measures are consistent with many other experts that were cited in the Draft EIR (e.g., the Diablo Canyon ISFSI EIR prepared by San Luis Obispo County, 2004). Please also see Response CC5-35.

CC5-37 The comment raises the issue of terrorist infiltrators and the potential vulnerability of the SONGS reactor secondary loop, which is not protected by the containment structure, to internal terrorist attack. This comment assumes that none of the reactor safety systems would function in the event of a successful terrorist attack on the exposed secondary loop and that there would somehow be a catastrophic release of radioactivity. This is a highly unlikely scenario that is related to plant components that are not affected by the Proposed Project, and if it were eligible for consideration in the EIR, the likelihood of such an event would be considered speculative under CEQA.

The aircraft vulnerability study by the Electric Power Research Institute (EPRI) referenced in the comment was included in the Draft EIR as an example of the robustness of the containment structure and does not represent an exhaustive list of potential failure mechanisms (see Draft EIR Section D.12.1, page D.12-12 for reference). The vulnerability of the facility is a baseline risk managed through the jurisdiction of the NRC. Please also refer to Master Responses MR-1 (Baseline) and MR-3 (Jurisdiction).

CC5-38 Section D.12.5 of the Draft EIR noted that continued operation of SONGS would result in an increased probability of component failure and an accidental release over time. How-

ever, as also stated in the EIR, the replacement of the SONGS steam generators is in direct response to the long-term wear of these components and the concern for future failures. Similarly, other critical SONGS reactor components have serviceable lifetimes, thus requiring periodic inspection, maintenance and replacement per NRC directives and schedules. As noted in Section D.12.5, the early cessation of SONGS operations associated with the No Project Alternative would result in a beneficial safety impact.

Potential hazards associated with the SONGS reactors were discussed in Section D.12.1 of the Draft EIR, which provided a substantial amount of detail regarding the baseline hazards associated with the facility. SONGS Units 2 and 3 have current operating licenses until 2022, and these facilities are thus considered part of the environmental baseline. See Master Response MR-1 (Baseline). The Proposed Project would not cause a change in the baseline conditions associated with the SONGS facilities, and may slightly improve the safety and reliability of the facilities. The NRC routinely issues safety directives that result in inspections and changes in procedures and component upgrades to minimize potential accidents and improve the reliability of nuclear power generating facilities. These directives require periodic upgrades to facilities, such as SONGS, as necessary to avoid potential incidents associated with aging components. Further information regarding baseline component-specific failure rates can also be obtained from the NRC in the form of numerous Safety Analysis Reports (SAR) and Safety Evaluation Reports (SER) that are publicly available.