EXECUTIVE SUMMARY

This Mitigated Negative Declaration (MND) has been prepared by the California State Lands Commission (CSLC), as lead agency under the California Environmental Quality Act (CEQA), to analyze and disclose the environmental effects associated with the San Onofre Nuclear Generating Station (SONGS) Offshore Large Organism Exclusion Device (LOED) Installation Project (Project). Southern California Edison Company (SCE or Applicant), the owner of SONGS, proposes to install two LOEDs—one around each Primary Offshore Intake Structure (POIS) at SONGS Units 2 and 3. LOED installation is anticipated to begin during the 2012 to 2013 winter season. One LOED would be installed then, when SONGS plant conditions allow, the other LOED would be installed at the earliest available opportunity. This equates to approximately 12 weeks of actual construction time for both Units 2 and 3.

SCE is obligated to comply with Section 2.C.(1) of the State Water Resources Control Board's (SWRCB's) Once Through Cooling (OTC) Policy, which requires owners or operators of existing power plants with offshore intakes to "*install large organism exclusion devices having a distance between exclusion bars of no greater than nine inches, or install other exclusion devices, deemed equivalent by the State Water Board*" (www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/docs/amdplcy052512.pdf). SCE, through discussions with the SWRCB, has decided to install LOEDs with a distance between exclusion bars not to exceed 9 inches. Installation of the LOEDs are intended to prevent the entrapment in the POISs of large marine organisms (e.g., Pacific harbor seal [*Phoca vitulina*], California sea lion [*Zalophus californianus*], green sea turtle [*Chelonia mydas*], giant sea bass [*Stereolepis gigas*], and large white sea bass [*Atractoscion nobilis*]).

The proposed Project is located approximately 60 miles south of Los Angeles, and 50 miles north of San Diego in northern San Diego County. It lies approximately 5 miles south of downtown San Clemente, adjacent to San Onofre State Beach on Marine Corps Base (MCB) Camp Pendleton, and is bisected by Interstate 5 (I-5).

EXISTING CONDITIONS

The offshore intake structures associated with Units 2 and 3 extend approximately 3,200 feet seaward, in a water depth of approximately 30 feet (Exhibit 1). Each POIS is a reinforced concrete riser, 32 feet in diameter and 18 feet above the seafloor, that connects to the 18-foot, 10-inch-diameter (outside) intake conduit bringing seawater, used for cooling, into SONGS. A velocity cap, 49 feet in diameter, is attached to the top of the POIS to control seawater flow rates entering the POIS. The velocity cap is constructed to provide a 7-foot-wide gap to the top of the POIS (Exhibit 2).

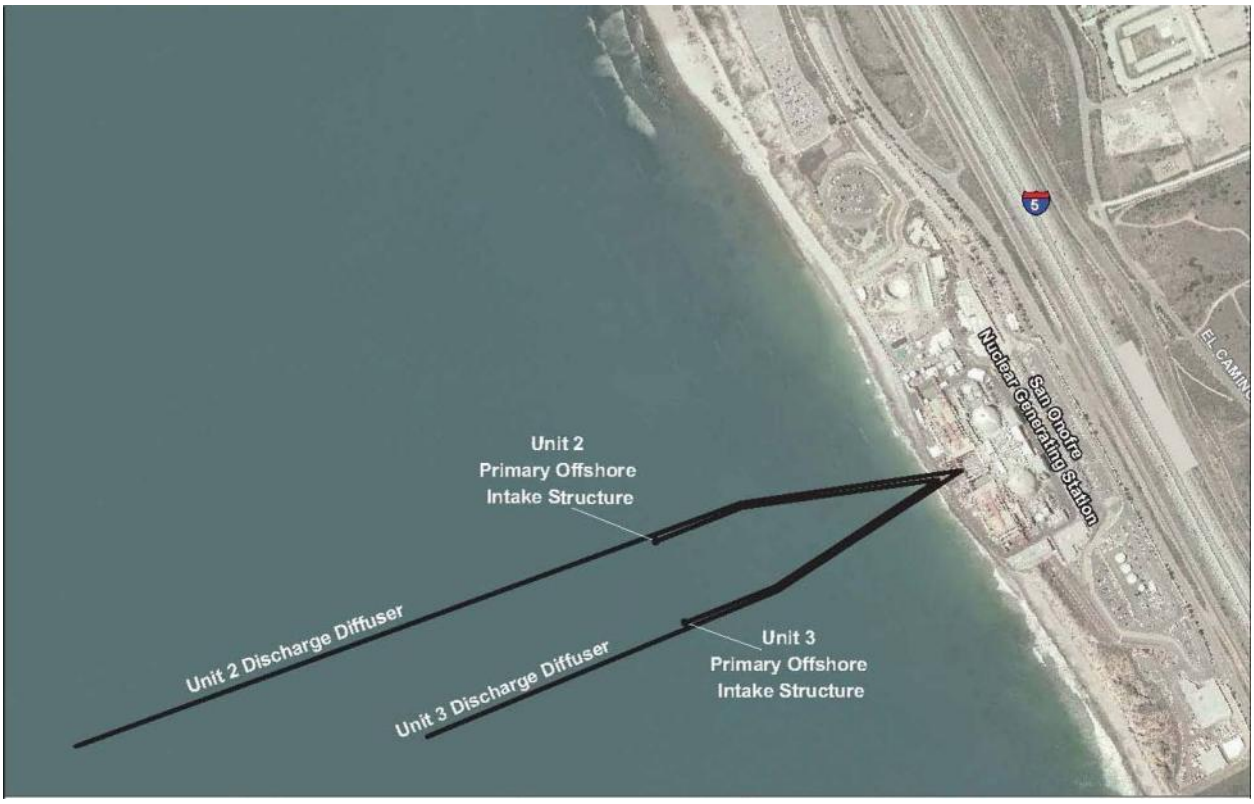


Exhibit 1. Vicinity Map

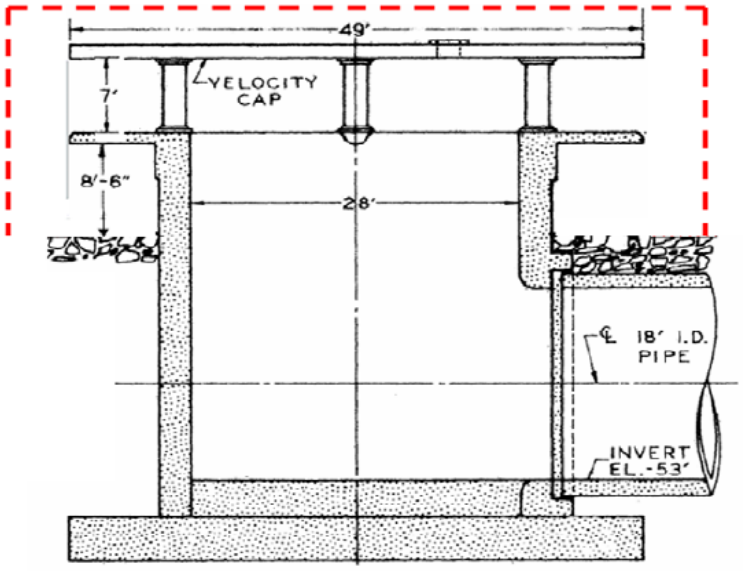


Exhibit 2. Cross Section of the SONGS POIS
(Source: Adapted from Enercon 2012)

The velocity cap minimizes entrainment of fish into the OTC system by converting the vertical flow to a lateral flow, thus triggering a flight response from fish. The majority of the riser is buried below the seafloor and is constructed on a 49-foot-diameter reinforced concrete footing, 4 feet thick and 6 feet thick for Units 2 and 3, respectively. The footings are tremie-poured (a method that uses a pipe through which concrete is placed below water level) on top of undisturbed native material at the base of the seafloor excavation.

PROPOSED PROJECT

The Project involves installing a LOED around each POIS at Units 2 and 3. The work associated with the Project would be conducted primarily on barges staged on the ocean surface and anchored above the existing intake structures, and on the seafloor immediately adjacent to the area surrounding each POIS.

Anchoring Strategy

Barge anchoring will use a four-point mooring system to safely moor each barge under potentially adverse weather conditions (Exhibit 3).

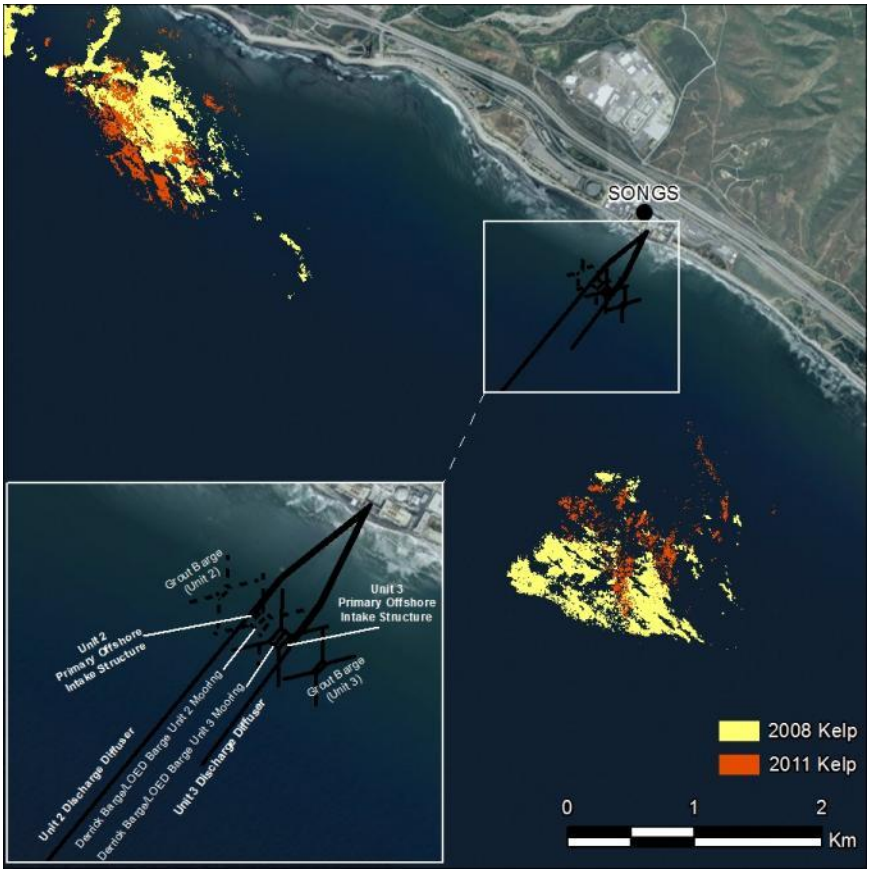


Exhibit 3. Tentative Anchoring Plan, SONGS LOED

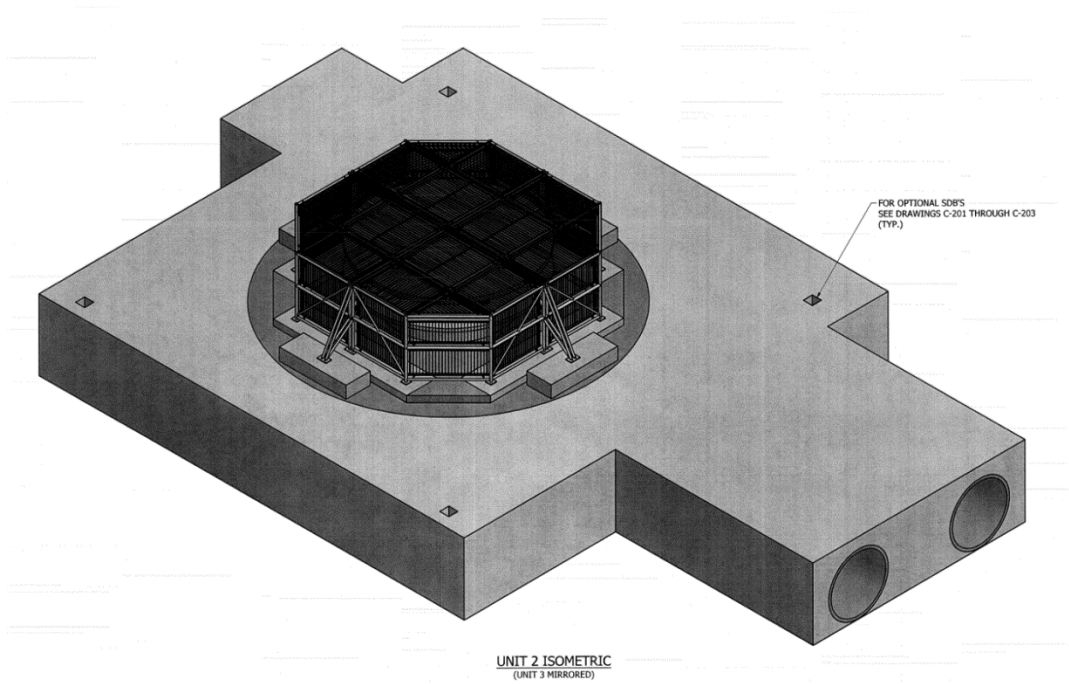
The anchors would also have sufficient capacity to develop stable working conditions for a crane barge during work under prevailing weather conditions. Anchoring protocols and plans will be developed by the selected construction contractor to minimize benthic damage from deploying, utilizing, and recovering anchorages, while also establishing anchor zones to avoid or minimize turbidity and benthic biology impacts, avoid hard rock resources and kelp beds, and avoid impacts to recreational and commercial boaters.

LOED

Each LOED is an independent, free-standing, structural frame "cage" that would completely enclose each existing POIS and that has the following characteristics: (1) it is a 64-foot square structure with chamfered corners (the corners are cut away to make a symmetrical sloping edge), creating an eight-sided structure that would stand 19 feet in height, approximately 1 foot above the top of the POIS velocity cap, and approximately 6 feet, 7 inches below the surface of the water at mean lower low water level (i.e., lowest low tide); (2) the four primary walls of the structure are 36 feet long; (3) the shorter "corner" walls are less than 20 feet in length; and (4) the LOED will be constructed of stainless steel for corrosion and marine biofouling resistance (Exhibit 4). The LOED would be supported by an independent concrete foundation constructed on top of the existing stone blanket surrounding each POIS. Each of the LOED components would be prefabricated at off-site inland locations, brought to a coastal site for assembly into the final LOED structure, transported to the Project site via barge, and lowered and positioned into place with a barge crane.

Gravity Base Foundation

The LOED would be attached to the existing stone blanket around each POIS and held in place by a gravity-based foundation composed of four large precast-concrete post foundation panels (Exhibit 5). The structural frame would be attached to precast anchor bolts within these post foundation panels. The foundation panels hold the LOED in place primarily through sheer weight and would also be grouted to the stone blanket beneath. The marine grout would be pumped for underwater placement. The LOED would be further held in place and also protected from lateral shifting by four kicker foundation panels. The kicker panels are massive heavyweight concrete foundations, located alongside and outside of each of the post foundation panels, and similarly grouted to the stone blanket. The LOED would be attached to the kicker panels by diagonal supports bolted to the foundation panels and attached to the main center posts of the structural frame. The final construction of the LOED would leave open spaces on the stone blanket, which could allow entrance into the POIS by large marine organisms. Therefore, these open spaces would be filled to ensure a maximum gap of 9 inches is maintained at the base of the structure.



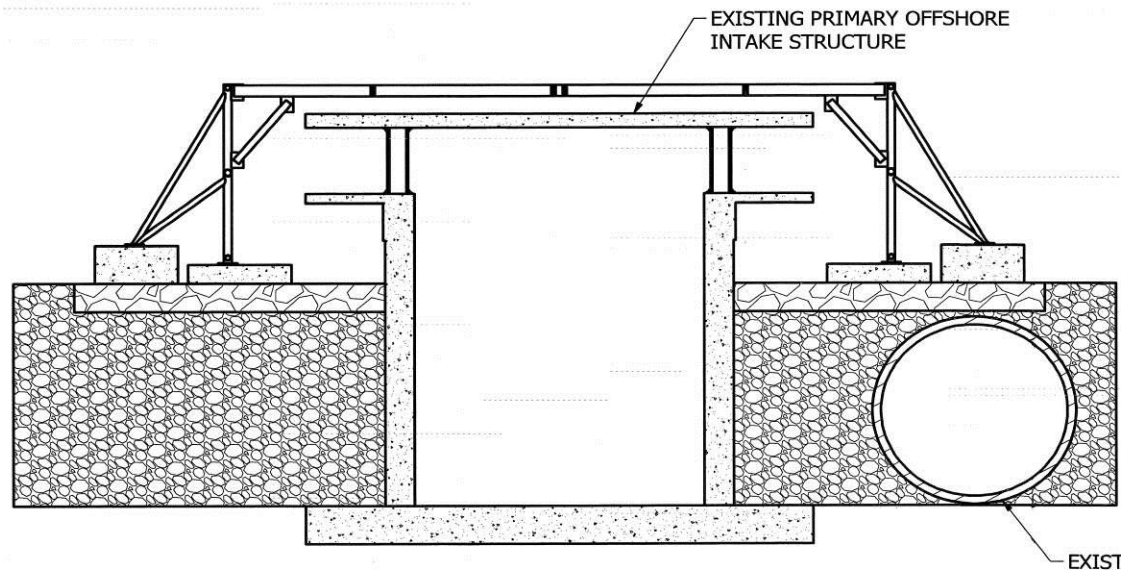


Exhibit 4. Isometric and Cross Section Views of the Proposed LOED for SONGS Unit 2 (Sources: Adapted from Enercon 2012)

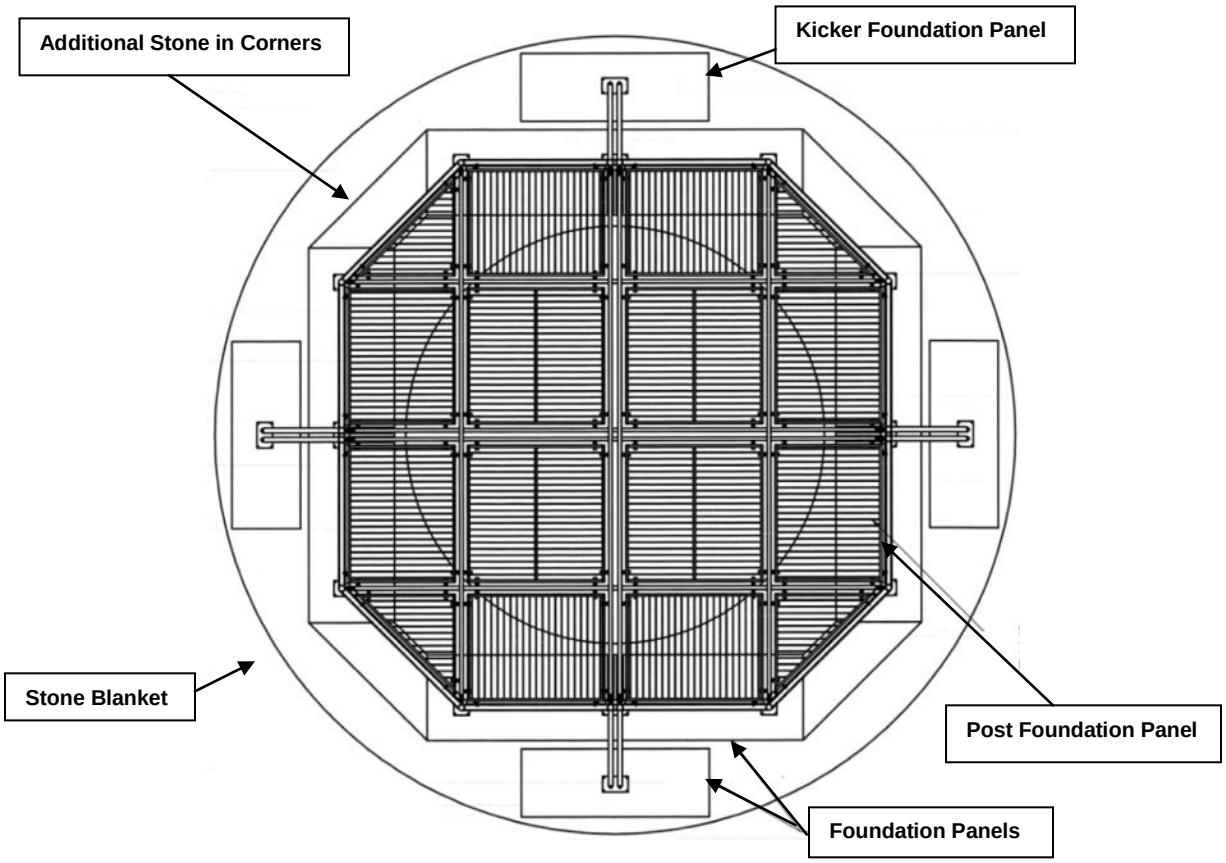


Exhibit 5. LOED Plan View – Foundation Panel Locations
(Source: Adapted from Enercon 2012)

Structural Frame

The structural frame would be constructed of welded stainless steel pipes for the vertical and horizontal posts, and stainless steel deep rectangular tubes as the main roof supports (Exhibit 6). The frame includes other structural supports to increase the structure's overall strength and ability to resist lateral shifting. A diver access would be designed into a bottom side panel that consists of four barrier bars that are bolted to the frame, and that may be unbolted to provide access for POIS maintenance and inspection.

Barrier Bar Panels

The bars would be prefabricated off-site into framed panels that would be bolted to steel plates welded to the LOED structural frame (Exhibit 7). Per OTC policy requirements, the bars are spaced 9 inches apart on center, which allows suitable flows into the POIS while preventing large marine organisms from passing through. The frame of each panel is designed with rectangular stainless steel tubes. The panels are designed to attach onto the structural frame with shear pins to allow "blow out" in extreme wave conditions to prevent damage to the foundation and frame.

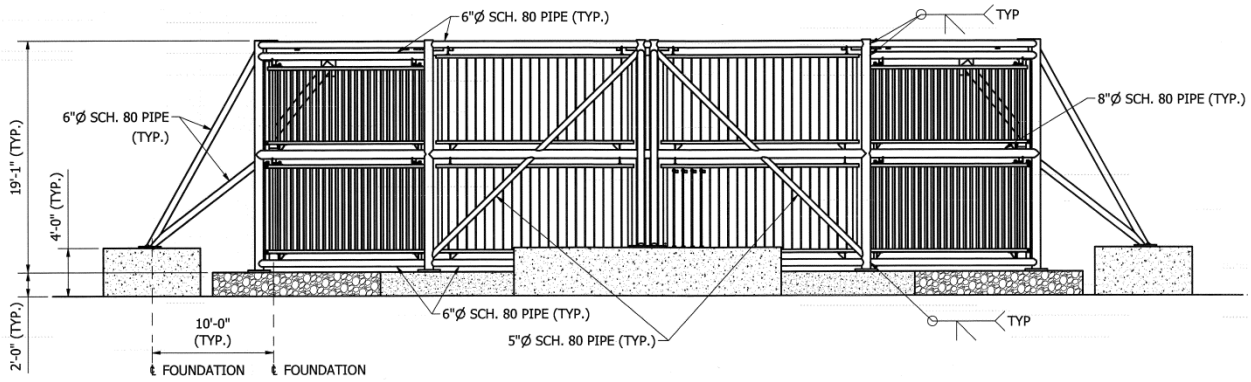


Exhibit 6. LOED Cross-Sectional View
(Source: Adapted from Enercon 2012)

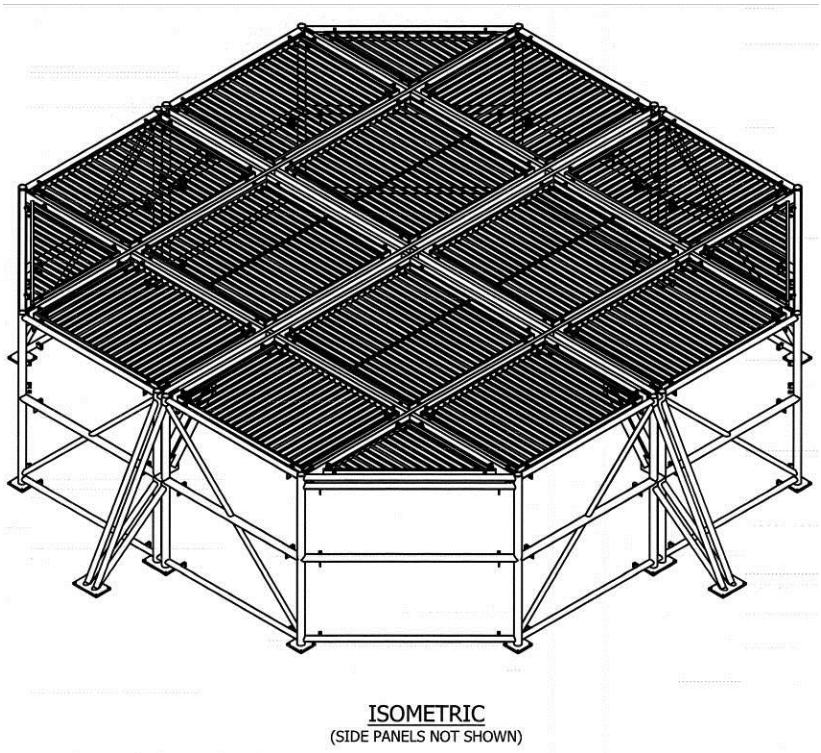


Exhibit 7. LOED Structural Frame (Barrier Bar Panels Shown on Roof of the LOED)
(Source: Adapted from Enercon 2012)

Sediment Dredging

Prior to LOED installation, sediments that have accumulated on the top of the stone blanket would most likely be removed via hydraulic dredging to prepare the benthic surface for proper and permanent installation of the LOED foundation (i.e., tremie grout and anchor footings). Natural sediment deposition around each POIS currently averages 21 inches in depth and is composed of sands and gravel. These accumulated sediments would be removed from the stone blanket, and sidecast to the surrounding seafloor along the perimeter of the stone blanket. Within a Work Plan to be developed by the selected installation contractor, dredging methodology would require dredged sediments to be sidecast within the 140-foot by 140-foot CSLC easements that encompass each POIS, along the 40-foot easement around each of the discharge conduits seaward from the POIS, and, if necessary, on the 70-foot-wide easement over the intake and outtake conduits landward from the POIS.

Sediment dredging and other construction-related activities would temporarily increase water column turbidity in the immediate vicinity of each POIS. To minimize impacts from turbidity, a Turbidity Monitoring Plan would be implemented as part of the Work Plan to monitor vertical and horizontal water clarity during dredging and construction activities associated with the Project. It would continually evaluate construction-related turbidity relative to natural (background) turbidity occurring in unaffected areas during dredging and construction activities, and would require a qualified observer to record turbidity from a suitable vantage point during each day of dredging and construction. It would also specify adaptive management activities and/or corrective action should monitoring indicate unacceptable turbidity levels above ambient conditions.

Construction Plan and Schedule

Each LOED would be prefabricated in sections at a land-based, off-site facility and transported to either the Port of Los Angeles, the Port of Long Beach, or the Port of San Diego where the individual LOED components would be assembled and loaded onto a barge for shipboard delivery to the SONGS POIS locations. Once onsite and the preparation of the foundations is completed, a barge crane would lift, lower, and position the LOEDs for final installation underwater.

Three tugboats/barges would be used to mobilize the LOED and ancillary materials/equipment to the POIS locations.[1] One tugboat would remain at the Project site for both Units 2 and 3 LOED installations; the other two would return to the port and head back to the Project site for the demobilization efforts once installation is complete.

[1] For the analysis in this document, the Port of Los Angeles was selected as a conservative (i.e., worst-case) estimate of potential impacts.

Construction activities would occur over approximately 6 weeks for each LOED, and are anticipated to begin during the 2012 to 2013 winter season. One LOED would be installed then, when plant conditions allow, the other LOED would be installed at the earliest available opportunity. This equates to approximately 12 weeks of actual construction time for both Units 2 and 3. The construction schedule may exceed 3 months in duration because the schedule would be driven by plant operational requirements (e.g., outage schedules) and constraints (SCE 2012). In addition, because marine construction can be restricted by inclement field conditions, the construction schedule may be adjusted to avoid environmental impact and safety concerns due to winter storms and/or rough seas.

Operations and Maintenance

The LOED will be constructed of stainless steel for corrosion and marine biofouling resistance. However, based on similar installations of LOED structures in California, maintenance cleaning of the LOED would likely be required. For the purposes of the environmental analysis, an 18-month cleaning frequency is assumed; however, the inspection and cleaning schedule would be adapted accordingly, based on the first 2 years of observations and required cleaning needs. During underwater maintenance inspections, LOED foundations would also be inspected for foundation scour. Although this is not anticipated, the area around the foundations would be monitored for signs of undermining.

Underwater cleaning of the LOED would be expected to involve (1) manual removal (hand scraping), and (2) water jet hydroblasting. The removed debris would be allowed to pass through to the onshore intake structure for capture by the traveling bars and screens inside the structure. The hydroblasting method includes high-pressure water jetting equipment used by divers to efficiently clean marine growth and foreign material from the LOEDs. Debris loading at the traveling bars and screens would be evaluated prior to commencing cleaning activities to avoid excessive buildup on the screening devices that would cause an unacceptable drop in cooling water circulation.

During hydroblasting maintenance, a boat-mounted jet pump would provide the high-pressure water spray for divers to manipulate. Although hydroblasting would be scheduled for regular cleaning intervals, emergency cleaning may be required via manual removal depending upon logistics and the severity of the emergency. Cleaning from the outside of the LOED could occur with the units online; however, full hydroblasting, if needed, inside and outside of the LOED would be scheduled during unit outages. Alternatively, barrier bar panels would be removable to facilitate complete cleaning onshore if a spare set were available and panels were exchanged during maintenance outages.

Environmental Impacts and Proposed Mitigation Measures

Table ES-1 shows the anticipated level of Project-related impacts to each resource as determined through the environmental analysis that is detailed in Section 3 of this Initial Study/MND (IS/MND). Table ES-2 lists the Project-specific mitigation measures designed to reduce or avoid potentially significant impacts that are recommended as a result of the environmental analysis detailed in Section 3. With incorporation of the proposed mitigation measures, all Project-related impacts would be reduced to less than significant.

Table ES-1
Environmental Issues and Potential Impacts

No Impact	Less than Significant Impact	Less than Significant Impact with Mitigation
Aesthetics	Air Quality	Biological Resources
Agriculture and Forestry Resources	Greenhouse Gas Emissions	Geology and Soils
Cultural and Paleontological Resources	Noise	Hazards and Hazardous Materials
Land Use and Planning	Public Services	Hydrology and Water Quality
Mineral Resources	Transportation/Traffic	Recreation
Population and Housing		
Utilities and Service Systems		

Table ES-2
Summary of Proposed Project Mitigation Measures (MMs)

MM BIO-1: Marine Mammal Monitoring and Protection Plan (MMMPP). The Contractor will execute the MMMPP to ensure the protection of marine mammals likely to occur in the area during vessel transit to and from the Project site as well as during installation of the LOEDs. Any changes to the MMMPP shall be submitted to the CSLC staff for approval at least 2 weeks before Project mobilization. Specific measures in the MMMPP include:

- A training session shall be conducted by a National Marine Fisheries Service (NMFS)-approved marine mammal monitor with all vessel crews to review the purpose and need for this MMMPP.
- All crews shall be notified of the need to evade, to the extent safely possible, crossing the path of migrating whales.
- Vessels shall maintain a distance of no closer than 1,000 feet from migrating whales during transits to and from the Project site.
- In the event a whale approaches to within 1,000 feet of the vessel in a manner outside of the vessel captain's control, all forward propulsion should be stopped, if safe to do so, until the animal has moved away.
- In the event a whale strike occurs, the vessel captain must notify the U.S. Coast

Guard immediately and provide information on a "Injured Marine Mammal and Ship Strike Report log." Subsequent notifications must be made to NMFS and SCE.

The NMFS-approved marine mammal monitor shall observe for the presence of marine mammals within the Project area. The monitor shall notify the on-site construction foreman and initiate a cease-work order in the event a marine mammal approaches within 200 feet of the POIS where the installations are underway. Marine mammals that are seaward of the construction barge or that may surface near the barge to investigate shall be closely observed. The monitors shall have the discretion to continue operations if he/she determines that the mammal is headed away from the activity zone. Mammals attempting to haul out on the barge or on other equipment shall be chased away using approved methods from the NMFS and subject to NMFS approval. All sightings shall be documented in a monitor logbook with a date-stamped photograph taken of the animal, if possible. Any unique markings the animal possesses shall be catalogued, such as tags, scars, and/or discolorations.

MM BIO-2: Turbidity Monitoring Plan. A Turbidity Monitoring Plan shall be implemented during Project dredging and construction activities to monitor any effects to water clarity in the immediate areas of the Large Organism Exclusion Device (LOED) installation. The Plan shall be submitted to the CSLC staff for approval, in consultation with the Regional Water Quality Control Board, at least 2 weeks before Project mobilization and shall include, at a minimum, the following elements:

- Details on how the Applicant will continually evaluate construction-related turbidity relative to natural (background) turbidity occurring in unaffected areas during dredging and construction activities;
- Requirements for a qualified observer to record turbidity from a suitable vantage point during each day of dredging and construction; and
- Specific adaptive management activities and/or corrective action measures should monitoring indicate unacceptable turbidity levels above ambient conditions.

MM GEO-1: Anchoring Plan. SCE shall submit a Final Anchoring Plan to CSLC staff for review and approval, in consultation with the U.S. Coast Guard, U.S. Army Corps of Engineers and the National Marine Fisheries Service, at least 2 weeks prior to commencement of dredging and installation activities and shall implement the Plan during all anchoring activities. The Anchoring Plan shall include, at a minimum, the following elements:

- A list all of the vessels that will anchor during the project and the number and size of anchors to be set;
- Maps showing the anchoring sites identified during pre-construction surveys to ensure that all anchors shall avoid any rocky habitat, kelp beds, and impacts to recreational and commercial boaters;
- Descriptions of navigation equipment that would be used to ensure anchors are accurately set and of the anchor handling procedures that would be followed to prevent or minimize anchor dragging; and,
- Requirement to be included in appropriate contracts for the Project that contractors shall, whenever feasible, use appropriate installation techniques

and procedures described in the Anchoring Plan that will minimize or avoid environmental impacts such as turbidity and anchor scarring.
MM HAZ-1: Inclement Weather Condition. The Applicant's Contractor shall tie-down or provide secondary containment for any deck equipment that may discharge contaminants in order to minimize the potential for unanticipated release of pollutants due to inclement weather or rough sea conditions. In addition, the Contractor shall monitor weather conditions and will cease work if the Contractor determines that existing or forecast sea states or weather conditions would create unsafe working conditions for personnel or equipment.
MM HAZ-2: Spill Response Plan. The Applicant's Contractor shall prepare a Spill Response Plan that presents the procedures and protocols to be used in the event of an onshore or offshore oil spill resulting from the activities associated with the construction and installation of the proposed LOEDs. Project vessels shall have a shipboard Spill Prevention and Response Plan and all necessary equipment to implement said Plan on board. Before Project mobilization, SCE shall submit the Plan to the Office of Oil Spill Prevention and Response (OSPR) for review and approval, and verification of that approval will be provided to the CSLC a minimum of 2 weeks prior to installation operations and, at a minimum, include the following elements: • Discussion of potential spill sources of hydrocarbons are limited to leakage or spillage of fuel or lubricants from onshore and marine equipment used during dispositioning operations; • Description of Oil Spill Response Team and equipment; • Description of the notification process; and • Description of Marine Spill Scenarios and Response Procedures.
MM HAZ-3: Diver Safety Plan. The Contractor shall prepare and submit to CSLC staff at least 2 weeks prior to Project mobilization a Diver Safety Plan that provides, at a minimum, the following elements: • A description of the diving techniques and equipment that will be used to support the underwater work activities; • A description of the procedures that will be used to perform each underwater operation; • A description of the job safety analysis tool that will be used to prepare for each day's diving operations; • An evacuation plan for evacuating injured divers; • A contact list for local emergency services organizations and facilities; and • Incorporation of the Associated Pacific Constructors, Inc.'s (APC's) Health, Safety, and Environment Plan and U.S. Coast Guard and Occupational Safety and Health Administration safety regulations.
REC-1: Coast Guard Advisory. Prior to any dredging or installation activities, the Applicant shall provide the U.S. Coast Guard (USCG) with Project details—including information on Project locations, times, and other details of activities that may pose hazards to mariners (i.e., barges, buoys, etc.)—so that the USCG can include such information in the Local Notice to Mariners (LNM) to advise boaters that could pass near the area of the activity in order to avoid potential hazards.

This IS/MND is intended to provide the CSLC and other responsible agencies with the information required to exercise their discretionary responsibilities with respect to the proposed Project. The document is organized as follows:

- Section 1 provides an introduction to the environmental review process. It describes the purpose and organization of this document and presents a summary of findings.
- Section 2 describes the proposed Project, including the background and need, the schedule for construction and future maintenance, and provides a summary of the design features.
- Section 3 presents an analysis on a range of environmental issues identified in the CEQA Initial Study Checklist. From this analysis, the following identifications are made:
    - The existing setting for each issue;
    - The corresponding range of impacts that would result; and
    - A discussion of various Project changes and/or mitigation measures that, if incorporated into the Project, would mitigate or avoid such impacts, such that no significant effect on the environment would occur.

  The range of impacts includes no impact, less than significant impact, less than significant impact with mitigation, or a potentially significant impact.
- Section 4 presents the CSLC Environmental Justice Policy.
- Section 5 presents the Mitigation Monitoring Program.
- Chapter 6 provides information on report preparation of this IS/MND.
- Chapter 7 lists the references used in preparation of this IS/MND.
- Appendices - The appendices include plans, data, and other information submitted by the Applicant and analyzed in this IS/MND.
    - Appendix A: Air Emissions Calculations;
    - Appendix B: SONGS LOED Marine Biology Resources Technical Appendix; and
    - Appendix C: Marine Mammal Monitoring and Protection Plan.