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Energy and Ocean Resources  
Staff: J JL, SMH—SF  
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### **STATUS REPORT ON SONGS MITIGATION PROGRAM JANUARY – MARCH 2005**

Following is a brief status report for the January-March 2005 period for the mitigation projects required in Southern California Edison Company's (SCE) coastal development permit for the San Onofre Nuclear Generating Station (SONGS) Units 2 and 3 (permit no. 6-81-330, formerly 183-73). The Commission originally adopted the conditions in 1991 to mitigate the adverse impacts of the power plant on the marine environment. The 1991 conditions (Condition D) also require SCE to provide the funds necessary for Commission technical oversight and independent monitoring of the mitigation projects, to be carried out by independent contract scientists under the direction of the Executive Director. In 1993, the Commission added a requirement for the permittee to partially fund construction of an experimental fish hatchery. The Commission has since approved amendments to the conditions in April 1997 and October 1998.

Implementation of the mitigation projects is the responsibility of SCE whereas the Commission is responsible for implementing its independent monitoring and technical oversight function, including the wetland pre-restoration monitoring program and experimental reef monitoring program described below. The Commission has operated under approved work programs and budgets since 1993. The Commission unanimously approved the work program and budget for calendar years 2004 and 2005 in November 2003.

Another aspect of the Commission's monitoring and oversight is periodic public review of the performance of the mitigation projects. The staff and contract scientists last conducted workshops on the San Dieguito wetland and reef mitigation projects in February and March 2004, respectively. Slides of the wetland workshop presentations (in PDF format) and proceedings of the reef workshop are posted on the Coastal Commission website at [www.coastal.ca.gov](http://www.coastal.ca.gov). The 2005 public review workshop for the reef mitigation project is currently scheduled for May 26 in San Clemente. The workshop for the wetland restoration project will be scheduled over the next few months. Final dates, times and agendas will be posted on the Commission's website.

### **WETLAND RESTORATION MITIGATION**

#### **The Project**

Condition A of the permit requires the permittee to create or substantially restore a minimum of 150 acres of wetlands to mitigate for the reduction in the standing stocks of nearshore fishes

caused by the operation of SONGS. In April 1997, the Commission reaffirmed its 1992 approval of the permittee's choice of the San Dieguito River Valley as the site for the wetland restoration project and allowed for up to 35 acres credit for enhancement at San Dieguito Lagoon on the condition that the ocean inlet is maintained open to tidal flow in perpetuity.

## **Progress Report**

***Wetland Restoration Project.*** The Commission approved SCE's preliminary wetland restoration plan for the San Dieguito Lagoon in November 1997. The CEQA/NEPA environmental review incorporated the mitigation project into the overall San Dieguito River Valley Regional Open Space Park project. The lead agencies for the CEQA/NEPA review were the San Dieguito River Valley Regional Open Space Park Joint Powers Authority (JPA) and the U.S. Fish and Wildlife Service (USFWS).

In September 2000, the JPA certified the EIR after public hearing. The EIR/S designated the Mixed Habitat plan as the environmentally preferred alternative. As required by NEPA, the availability of the final EIR/EIS was published in the Federal Register in September 2000; however, the USFWS had not yet issued a final Record of Decision (ROD) when lawsuits on the Final EIR (FEIR) were filed. The lawsuits have now concluded (see next paragraph). USFWS issued the ROD on November 28, 2003.

***Litigation on Final EIR.*** Lawsuits challenging the adequacy of the FEIR were filed by the Del Mar Sandy Lane Association and Citizens United to Save the Beach. Although in a July 2001 decision the Court rejected certain of the plaintiff's claims, it determined that the FEIR was inadequate with regard to several issues, most significantly that there was insufficient evidence supporting the FEIR's conclusion that the project will not increase scour and loss of sand at the river mouth. The Court set aside the JPA's certification of the FEIR and remanded the matter back to the JPA. Both parties appealed the Court's decision. In August 2003, the Court of Appeal ruled that there is substantial credible evidence supporting each of the JPA's conclusions concerning the environmental impacts of the restoration project and the appropriateness of the mitigation measures, thus reversing the judgment of the trial court. All appeals are final; on October 6, 2003, the Appeals Court issued its order directing the Superior Court to issue the revised judgment.

***Outstanding issues/Next steps in implementing wetland restoration.*** The permit requires SCE to submit a final wetland restoration plan and coastal development permit application to the Commission and to obtain other agency approvals and permits. The plan submitted must substantially conform to the preliminary restoration plan approved by the Commission in November 1997, unless the CEQA/NEPA review concludes that an alternative plan that meets the conditions for minimum standards and objectives is the environmentally superior alternative.

Following completion of its final design and engineering plans, SCE began the process of obtaining necessary permits, including its coastal development permit from the Commission. On August 17, 2004, SCE submitted its Coastal Development Permit Application (#6-04-88) to the Commission's San Diego and San Francisco offices. The Commission's contract scientists and staff are continuing to review the application and associated documents submitted in response to staff's non-filing letters of September 16 and November 30, 2004, and March 11, 2005. Once staff determines that all of the additional required information is submitted, the application can be filed complete. Staff is working with SCE, its contractors, and staffs of the relevant resource

and regulatory agencies to help SCE provide necessary information. Staff hopes to bring the CDP application to the Commission in summer 2005.

Two other issues remain to be resolved before the Commission considers the final plan and coastal development permit application: the 22<sup>nd</sup> Agricultural District's requirement for Least Tern nesting habitat under its previously granted coastal development permit (CDP No. 6-84-525) and the JPA's proposal for public trails. This quarter the staff has continued its work with the District and representatives of the Attorney General's Office; tentative agreement on the least tern nesting requirement has been reached between the staffs of the Commission and District but has yet to be formalized. The staff expects to bring the agreement to the Commission at the earliest possible meeting.

Consultations regarding the trails are partly dependent upon resolution of the issues with the District since portions of the proposed trail would be placed on District property. SCE revised the CDP application to propose that horses be allowed only on the trail east of the I-5 freeway, and not be allowed to go under the I-5 freeway, relieving one of the staff's major concerns. Staff will have further discussions on the proposed trail with SCE and JPA during the processing of the CDP application.

***Pre-restoration Monitoring.*** The SONGS permit establishes physical and biological performance standards that must be met by the restored wetland. As part of the Commission's technical oversight, monitoring and management responsibilities under Condition D, the contract scientists are conducting pre-restoration monitoring in San Dieguito Lagoon and other southern California wetlands that may be used as reference sites in post-restoration monitoring. Pre-restoration monitoring includes the collection of baseline physical and biological data on the wetland attributes that will be monitored during post-restoration monitoring. Pre-restoration data are required to assess changes in the existing wetland following construction. Pre-restoration monitoring data are also needed to develop sampling designs for post-restoration monitoring that can effectively determine whether the various performance standards have been met. This information has been incorporated into the CCC Monitoring Plan.

Contract scientists continued to analyze pre-restoration data on water quality, invertebrates and fishes, but have focused most of their attention on finalizing the CCC Monitoring Plan, including the technical appendices, which contain detailed results of pre-restoration monitoring. A draft Monitoring plan is expected to be ready for SCE and resource agency review in April 2005.

The contract scientists continue to monitor water salinity and oxygen concentration, which are important to the health, abundance, and richness of estuarine biota. These baseline data on water quality, and also tidal height, are collected by continuously recording instruments placed in San Dieguito Lagoon and Carpinteria Salt Marsh (a reference wetland).

## **KELP REEF MITIGATION**

### **The Project**

Condition C of the permit requires construction of an artificial reef that consists of an experimental reef and a larger mitigation reef. The experimental reef must be a minimum of 16.8 acres and the mitigation reef must be of sufficient size to sustain 150 acres of medium to high density kelp bed community. The purpose of the experimental reef is to determine which

combinations of substrate type and substrate coverage are most likely to achieve the performance standards specified in the permit. The design of the mitigation reef will be contingent on the results of the experimental reef.

In April 1997, the Commission added the requirement for a payment of \$3.6 million to the State's Ocean Resource Enhancement and Hatchery Program (OREHP) to fund a mariculture/marine fish hatchery to provide compensation for resources not replaced by the artificial mitigation reef. SCE has fully satisfied this portion of the kelp mitigation requirement.

## Progress Report

Following completion of the environmental review and permitting process, construction of the experimental reef located off San Clemente was completed in September 1999. The experimental reef tests eight different reef designs that vary in substrate composition (quarry rock or recycled concrete), substrate coverage (actual coverages are higher than the intended nominal coverages of 17%, 34% and 67%, at approximately 54%, 65%, and 84%, respectively), and presence or absence of transplanted kelp on quarry rock modules with a nominal coverage of 34%. All eight reef designs are represented as individual 40 m x 40 m modules that are replicated in seven areas (i.e., blocks) for a total of 56 artificial reef modules totaling 22.4 acres. Efforts to transplant kelp were deemed successful in 2001. Dense natural recruitment of kelp, however, also occurred on all reefs and swamped the effect of kelp transplantation. Consequently, kelp densities did not differ between reefs with and without transplanted kelp and, therefore, monitoring of the two reef designs with transplanted kelp was discontinued in 2001. The results presented below are for the remaining six designs, which represent different combinations of substrate cover and type.

**Results from Experimental Reef Monitoring.** The monitoring plan approved by the Commission specifies that the abundance of giant kelp, macro invertebrates, understory algae, and kelp bed fish, and the area and coverage of hard substrate on the artificial reef modules be surveyed each year for five years.

Results from the first four years of the five-year artificial reef experiment were reviewed at an annual public workshop held at the San Clemente Community Center in March 2004 (Proceedings from the Fourth Annual Public Workshop of the SONGS Mitigation Project Condition C: Kelp Forest Mitigation are posted on the Coastal Commission website at [www.coastal.ca.gov](http://www.coastal.ca.gov)). The major focus of the workshop was on the effectiveness of the different experimental reef designs in supporting kelp forest biota. The effectiveness of the different reef designs was gauged in relation to their ability to meet the fixed and relative performance standards that will be used to judge the success of the 150-acre mitigation reef. The results presented at the workshop revealed three major concerns about some or all of the artificial reef designs:

1. There is a potential for dominance of all reef designs by the sea fan, *Muricea*.
2. Dominance by *Muricea* and possibly other benthic invertebrates could inhibit the sustainability of giant kelp and thus prevent the artificial reef from succeeding in meeting the performance standard for giant kelp.
3. None of the reef designs currently meet the permit standards for the abundance and richness of understory algae whose mean values are diverging from the natural reference reefs on all reef designs.

Two studies are currently underway and will continue through 2005 to address these areas of concern. One is a continuation of demographic studies the sea fan *Muricea* spp. These studies are providing information necessary to make projections regarding the densities of large adult sea fans likely to become established on the different reef designs. A second study was established to determine the relative importance of competition by invertebrates and shading by adult giant kelp on the abundance and species richness of understory algae and on the abundance of juvenile giant kelp. Results from these studies will provide much needed insight into whether one or more designs are heading inexorably toward dominance by benthic invertebrates (which would prevent them from meeting the performance standards for giant kelp and understory algae) or whether the patterns are due primarily to the more ephemeral effects of shading by adult kelp. Information gained from these studies will be extremely useful in deciding on the eventual design of the 150-acre mitigation reef.

Year-Five monitoring of the artificial reef modules and reference reefs was completed in December 2004. The main focus of work during the first quarter of 2005 has been on data entry, documentation and quality control. Contract scientists have begun analyzing data and are planning on having a draft final report with recommendations on the general design of the mitigation reef available for review at the annual public review workshop currently scheduled for May 26, 2005 in San Clemente. Contract scientists continue to explore the suitability of different methods for evaluating the performance standard pertaining to fish production of the mitigation reef. On February 28 and March 1, 2005, the contract scientists, Commission staff and Science Advisory Panel met with three fish experts to discuss the pros and cons of different methods of estimating fish production and to develop a cost-effective plan for future work on this topic.

## **FISH BEHAVIORAL MITIGATION**

### **The Project**

Condition B requires the permittee to install and maintain behavioral barrier devices at SONGS to reduce fish impingement losses.

### **Progress Report**

SCE conducted a number of laboratory and in-plant experiments testing the behavioral response of fish to lights and sound devices from 1992 through 1999. None of the experiments showed evidence that these devices would reduce fish impingement losses as required by Condition B. At the same time, SCE continued its modified heat cleaning treatments at the plant (called the Fish Chase procedure), which result in a considerable reduction in fish impingement

In October 2000, the Commission reviewed the results and concluded that no further testing of alternative behavioral barriers should be required at this time, provided that (1) SCE continues to adhere to the operating, monitoring, and reporting procedures for the modified heat cleaning treatments and (2) SCE makes every effort to test and install, if feasible, future technologies or techniques for fish protection if such techniques become accepted industry standards or are required by the Commission in other power plant regulatory actions.

The contract scientists' review of the data and analyses on the fish chase procedure at SONGS contained in SCE's 2003 *Annual Marine Environmental Analysis* report indicated that the fish

chase procedure in 2003 was consistent with the Commission's requirements and that SCE continues in compliance with Condition B of the SONGS permit.