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Energy and Ocean Resources
Staff: JJL, SMH—SF
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STATUS REPORT ON SONGS MITIGATION PROGRAM

Following is a brief status report 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 conditions originally were adopted by the Commission in 1991 to mitigate the adverse impacts of the power plant on the marine environment. The 1991 conditions 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.

STATUS OF SCE FUNDING

As of this writing, SCE representatives have indicated that planning for the wetland project is continuing and that first quarter 2001 funding is being provided for the Commission's oversight and monitoring program. However, future funding cannot be assured until the outcome of current efforts to avoid utility bankruptcies is known. Commission staff is monitoring the situation closely and will be taking all steps possible to ensure compliance with the Commission's permit conditions.

TECHNICAL REVIEW WORKSHOP

A public workshop was conducted by the Commission staff and contract scientists to review the status of the SONGS mitigation projects on January 30, 2001 at the City of San Clemente Community Center. The workshop covered presentations by the Commission's contract scientists, staff and consultants from SCE on all three major mitigation projects—wetland restoration, fish behavioral barriers and kelp reef mitigation. Discussion focused on the contract scientists' work on pre-restoration monitoring at San Dieguito Lagoon and other southern California wetlands and on the experimental reef monitoring program. The workshop was well-attended by SCE and its consultants, Commission staff and contract scientists, members of the Scientific

Advisory Panel, representatives of state and federal resource agencies, local government representatives, members of interested groups and organizations, and the general public.

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 impacts to 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 of perpetual inlet maintenance.

Progress Report

Wetland Restoration Planning. Following the Commission's November 1997 approval of SCE's preliminary wetland restoration plan, the wetland restoration mitigation project underwent a planning and environmental review process which incorporated the mitigation project into the overall San Dieguito River Valley Regional Open Space Park project and included additional wetland restoration required under the permittee's settlement agreement with the Earth Island Institute. The lead agencies for the CEQA/NEPA environmental review were the San Dieguito River Valley Regional Open Space Park Joint Powers Authority (JPA) and the U.S. Fish and Wildlife Service.

Following the review period on the January 2000 draft EIR/S, the final EIR/S was released on September 5, 2000. At a public hearing on September 15, 2000, the JPA certified the EIR and voted to support the EIR's designation of Mixed Habitat plan as the environmentally preferred alternative. The Commission's contract scientists attended the meeting and concurred with this decision. As required by NEPA, the availability of the final EIR/S was published in the Federal Register on September 15, 2000. The 30-day notice period concluded in mid-October, and the USFWS will prepare and issue a final Record of Decision. Lawsuits challenging the adequacy of the final EIR/S have been filed by the Del Mar Sandy Lane Association and Citizens United to Save the Beach.

SCE submitted an administrative draft of its final restoration plan to the JPA in mid-January 2001 for review of the plan's compliance with the EIR/S. Pending resolution of the issues involved in the final configuration of the least tern nesting sites, SCE will submit the final plan to the Commission. Staff is working with SCE, USFWS, the JPA, and the 22nd Agricultural District to bring these issues to closure as soon as possible.

Pre-restoration Monitoring. Commission contract scientists continued pre-restoration monitoring in San Dieguito Lagoon and in other southern California wetlands that may be used as reference sites in post-restoration monitoring. In recent months, this monitoring has focused on determining the appropriate number and spacing of sam-

ples for use in the post-restoration monitoring of intertidal epibenthic and infaunal invertebrates. Field work for this study, carried out in Tijuana Estuary, Mugu Lagoon, and Carpinteria Salt Marsh, was completed in early December 2000. Laboratory analysis of the samples is more than half-way completed. Contract scientists are continuing to monitor water quality in San Dieguito lagoon and Carpinteria Salt Marsh and will soon establish a station in Mugu lagoon.

KELP REEF MITIGATION

The Project

Condition C of the permit requires construction of an artificial reef that will consist 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 what combination of substrate type and substrate coverage will best 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 requirement.

Progress Report

Construction of the Artificial Reef. Construction of the 56-module experimental reef was completed in September 1999. Construction monitoring confirmed that the footprints and percentage covers of the modules conformed closely to the design specifications.

Kelp Transplanting Experiment. SCE completed an experiment to evaluate the logistical ease of transplanting kelp. In June and July 2000 staff scientists assisted SCE in outplanting small laboratory-grown plants directly to the artificial reef.

SCE laid out two objectives for its kelp transplant experiment: (1) to promote development of kelp on the reef if natural kelp recruitment was delayed or absent, so that performance of substrate types and coverage can be evaluated, and (2) to determine if transplantation is a cost-effective means of enhancing kelp abundance. In its mid-November report, SCE detailed its transplanting efforts to date.¹ The report notes the successful completion of the direct transplanting of small laboratory plants to the artificial reef. The report also notes that during maintenance activities conducted in September and October 2000, about two-thirds of the artificial transplant sites which received direct transplants from the laboratory supported small juvenile plants (ranging from 10 to 30 cm long).

¹ SONGS Mitigation Program--Update on the Kelp Transplanting Component of the San Clemente Experimental Kelp Project., dated November 13, 2000, from David W. Kay to Susan Hansch.

SCE concluded that the first objective was no longer relevant, in view of the heavy natural recruitment preceding the transplant, and that the costs for the experimental transplantation were quite high, at nearly \$40,000 per acre. Based on the results of this experiment, SCE believes the objectives have been met and plans no further transplantation experiments at this time.

Commission contract scientists will continue to monitor the outplants and to analyze the results of SCE's experiment, including SCE's kelp transplant costs. The scientists plan to monitor kelp in February/March 2001; however, because the plants will not have grown to sufficient size, even under ideal conditions, the scientists are not likely to be able to evaluate the effectiveness of the transplanting at producing adult plants until the July/August 2001 kelp survey.

Reef Monitoring. To date the reef monitoring staff, working under the direction of the Commission's contract staff scientists, have logged over 2,000 dives on the experimental artificial reef in completing a variety of tasks, including: (1) winter and summer surveys of giant kelp, which included measuring the size, fecundity and survivorship of all adult plants growing along 242 permanent 40 m x 2 m transects, (2) winter and summer surveys of 1,120 stakes used to measure rates of sand burial and/or accretion of the artificial reef, and (3) summer survey of the benthic algae, invertebrates and cryptic bottom fish living along the 242 permanent transects. Sampling the survivorship of transplanted kelp was concluded last November.

Protocols for sampling kelp bed fish have been developed and tested by the contract scientists. Fish were sampled on all 56 artificial reef modules and at all 18 reference reef locations in early October. An additional survey of all artificial reef modules and reference locations was completed in November.

Commission contract scientists continued work on maintenance of transects on the reef modules and the reference sites, as well as entering and performing quality assurance and control on the monitoring data. The scientists also completed analyses necessary for the public workshop conducted in January.

FISH BEHAVIORAL MITIGATION

The Project

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

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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, which result in a considerable reduction in fish impingement losses.

In October 2000, the Commission reviewed the conclusions on the effectiveness of the behavioral barriers (see staff report entitled *Executive Director's Determination that Fish Behavioral Barriers Tested at SONGS are Ineffective*, dated September 22, 2000) and concurred that (1) the fish behavioral barriers installed and tested at the plant were ineffective and unlikely to result in a two metric ton (MT) reduction in fish impingement losses as required by Condition B of the permit, (2) no currently available alternative behavioral barriers are likely to be effective or feasible in reducing fish losses as required by Condition B, and (3) a procedural modification made by SCE in the heat cleaning treatment of the cooling water intake systems of SONGS Units 2 and 3 has reduced fish losses on average by approximately 4.3 MT per year. Based on this determination, the Executive Director 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 and monitoring 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. Thus, the Executive Director determined, and the Commission concurred, that SCE is currently in compliance with Condition B of the SONGS permit.

