CALIFORNIA OCEAN
PROTECTION COUNCIL

Staff Recommendation
February 8, 2007

Study of Grid Reliability and Resource Adequacy in Regions Currently Served by Coastal Power Plants using Once-through Cooling

Developed By: **Christine Blackburn**

RECOMMENDED ACTION: Consideration of a study to examine grid reliability and future resource adequacy for regions currently supplied by coastal power plants using once-through cooling and possible 1) determination that it is a high priority and 2) authorization for the council Secretary to take actions needed to provide up to $200,000 for its completion

OCEAN or COASTAL LOCATION: Statewide

AGENCY OR ENTITY RECOMMENDING PROJECT: Ocean Protection Council, in cooperation with the State Water Resources Control Board and the California Energy Commission

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EXHIBITS

Exhibit 1: **OPC Resolution on Once-through Cooling at Coastal Power Plants**

RESOLUTION

"The Ocean Protection Council finds pursuant to Sections 35600 *et seq.* of the Public Resources Code that assessing future grid reliability and resources adequacy for regions of the state which currently are supplied by coastal power plants that use once-through cooling, as herein described, is of high priority for ocean conservation; and authorizes the Secretary of the Council to take actions necessary for its completion, including the allocation of up to $200,000 for the purposes of this study."

PROJECT DESCRIPTION

Project Overview

Staff is recommending that the Ocean Protection Council (OPC) determine that the proposed study examining grid reliability and regional energy resource adequacy at coastal power plants is a high priority for ocean conservation due to the environmental impacts of once-through cooling technologies at these plants. The proposed study will help determine grid reliability under

different alternatives to the State Water Resources Control Board's (SWRCB) proposed statewide policy on once-through cooling. OPC is working in close coordination with SWRCB and the California Energy Commission (CEC) with a goal of providing SWRCB with the information it needs to make an informed regulatory decision regarding once-through cooling.

Energy Reliability Study

In June 2006, the SWRCB staff released its scoping document for the Proposed Statewide Policy on Clean Water Act Section 316(b) Regulations. The open comment period for this document ended on September 15, 2006, and since that time, the SWRCB staff has been reviewing 44 comment letters and seeking additional information from other state agencies that will inform the final policy proposed to the State Board.

As part of this final review, the SWRCB staff is determining the possible impacts of the proposed policy to the environment as well as to future energy supply. The latter part of this assessment is due to the concern that the new policy may limit energy production from some coastal facilities or increase the likelihood that operators of certain coastal plants would shut down if they were unable or unwilling to comply. The staff at the SWRCB approached the OPC to help collect data that would help determine the potential impacts to energy generation and supply reliability.

If plants reduce their capacity or retire, sufficient base load and peak capacity may not be available to keep the grid working properly or to meet regional energy needs. However, in some cases, it is possibly that energy replacement in the same region will be sufficient—meaning that on-site replacement is not necessary. At other locations, there may be no need for replacement at all and remote energy can be transferred in.

The proposed study will assess various scenarios of compliance with the proposed SWRCB policy and determine potential impacts to grid stability and energy reliability. One issue the proposed study may assess is the potential incremental decreases in energy production at each coastal plant caused by operational or infrastructure changes as a result of the proposed policy. For example, a unit's maximum sustainable output may decrease if it switches from once-through cooling to closed-cycle cooling. The study could then project whether these incremental decreases will affect the ability to meet regional base load and forecasted peak load requirements. Another option that may face some coastal plant is to choose to cease operations rather than assume the costs associated with compliance. The study may also look at the potential affects of one or more plants going offline and how these potential impacts could be mitigated by planning for the construction of new units, without once-through cooling, to meet regional demand.

There are many variables to consider when conducting such a study. The OPC staff plans to work with the SWRCB, CEC, and the California Independent System Operator in an iterative manner to ensure that reliable and usable data are produced. Most likely, the joint agencies will interview several qualified firms about potential approaches to the study and will determine the exact scope and study methodology following these interviews.

Project Background

At the April 2006 meeting, the OPC approved a resolution related to once-through cooling at coastal power plants in California. As a follow-up, in June 2006, the OPC approved $300,000 for

a study to examine engineering options for reducing the use of once-through cooling at each of the coastal plants.

The June 2006 staff recommendation, in a section titled Proposal for Future Action, mentioned the need for a companion study examining future resource adequacy for the coastal fleet.

> "This study will provide current data about each of the existing coastal plants and the available options for each plant to reduce environmental impacts associated with once-through cooling technologies. In addition to this type of information, the staff will pursue a companion study, in possible cooperation with the CEC, that would evaluate the operation of these plants and their contribution to grid reliability, both now and in the projected future. Taken together, the information from the two studies could provide a roadmap for California—creating long-term, coordinated goals for eliminating once-through cooling environmental impacts and ensuring reliable, clean energy production."

OPC staff has continued to work with the SWRCB and the CEC to ensure that needed information will be available to the State Water Board when it considers the proposed state policy, probably in late 2007. In addition, the OPC has organized interagency coordinating committee meetings on once-through cooling, bringing together personnel from the CEC, SWRCB, Department of Fish and Game, ISO, PUC, and State Lands Commission to discuss overlapping jurisdictions and to share information. It is through these coordinating activities that this proposed joint study with the SWRCB was developed.

PROJECT FINANCING

Funding Sources:

Ocean Protection Council	$200,000
State Water Resources Control Board	$100,000
Total Project Cost	**$300,000**

Funding for the proposed project would come from the Ocean Protection Council's Tidelands Oil funds, appropriated to the Secretary of Resources in the FY 04/05 for projects authorized pursuant to the Ocean Protection Act. The Resources Agency has entered into an interagency agreement with the Conservancy to administer these funds on behalf of the OPC and recommend projects for funding.

The State Water Board has committed up to $100,000 to the project to ensure its data needs are met and the CEC has provided and will continue to provide technical expertise of its staff for this project.

CONSISTENCY WITH THE OPC STRATEGIC PLAN:

A. Governance

Objective 2: Maximize the effectiveness of state agency efforts to protect and conserve ocean and coastal resources.

The proposed study is being designed and executed in partnership with several state agencies. The information it provides may inform future actions at the SWRCB, the OPC, and other partner agencies.

C. Ocean and Coastal Water Quality

Objective 3: Work to eliminate the harmful environmental impacts of once-through cooling at coastal power plants.

The information sought through the proposed study, in conjunction with other studies that are currently ongoing, can help the agencies devise policies and regulations that limit or eliminate the use of once-through cooling, while at the same time, ensuring energy reliability throughout the state.