

**STATE WATER RESOURCES CONTROL BOARD
BOARD MEETING/WORKSHOP SESSION – DIVISION OF WATER QUALITY
DECEMBER 1, 2009**

ITEM 8

SUBJECT

WORKSHOP ON A PROPOSED WATER QUALITY CONTROL POLICY ON THE USE OF COASTAL AND ESTUARINE WATERS FOR POWER PLANT COOLING AND ASSOCIATED CERTIFIED REGULATORY PROGRAM ENVIRONMENTAL ANALYSIS

DISCUSSION

There are 19 electrical power plants located in California that use marine or estuarine waters as a source of cooling water with the capacity to withdraw over 15 billion gallons of water per day. The intake structures for power plants that use once through cooling impinge (trap against screens) and entrain (draw through cooling water systems) marine life to the detriment of the marine environment. Annually, impingement currently results in mortality to over 2.6 million fish, and entrainment currently results in mortality to over 19 billion fish larvae. Clean Water Act Section 316(b) requires that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact. Section 316(b) is implemented through National Pollutant Discharge Elimination System (NPDES) permits, issued pursuant to Clean Water Act Section 402, which authorize the point source discharge of pollutants to navigable waters.

The purpose of the proposed Water Quality Control Policy (see Attachment 1) is to address the effects that the power plant intake structures have on the impingement and entrainment of marine life in a manner consistent with the federal Clean Water Act. The proposed policy also provides guidance to the Regional Water Quality Control Boards (Regional Water Boards) when reissuing the NPDES permits for coastal power plants. Through the implementation of this policy, the effect on the marine environment due to the impingement and entrainment of marine life will be minimized.

The proposed policy sets best technology available (BTA) on a statewide basis using best professional judgment; includes alternative means of compliance (for both fossil fuel fired generators and nuclear power plants); a compliance schedule; and monitoring provisions to ensure that the goals of the proposed policy are being met.

Because of the complexities associated with a policy implementing Section 316(b) requirements, this proposed policy was developed with input from a broad range of regulatory entities and organizations that deal with energy, including the California Energy Commission, the California Public Utilities Commission, the California Independent System Operator, the California Coastal Commission, the California State Lands Commission and the California Air Resources Board. These agencies, along with the State Water Board, form the core of an inter-agency work group that has developed the compliance schedule for the proposed policy, with the goal of reducing the impact that once-through cooling has on the marine environment, and protecting the stability of the state's electrical grid.

In addition to the efforts of the interagency work group, there have been a number of broader stakeholder meetings to discuss the impacts of implementation of the proposed policy on the power producers.

POLICY ISSUE

Should the State Water Board:

1. Certify the final Substitute Environmental Document, which includes the responses to comments, and direct the Executive Director or designee to transmit the Notice of Decision to the Secretary of Resources?
2. Adopt the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling?
3. Authorize the Executive Director or designee to submit the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling to the Office of Administration Law (OAL) for review and approval?
4. Direct the Executive Director or designee to make minor, non-substantive modifications to the language of the Policy, if during the OAL approval process, OAL determines that such changes are needed for clarity or consistency, and inform the Board of any such changes?

FISCAL IMPACT

If, at a future meeting, the State Water Board adopts the proposed Water Quality Control Policy, there will be costs associated with its administration. However, most of these costs are already incurred with the administration of the NPDES permits for coastal power plants.

REGIONAL WATER BOARD IMPACT

Yes. Regions 1, 2, 3, 4, 5, 8, and 9. The Regional Water Boards will have responsibility for implementing the Water Quality Control Policy through the NPDES permits for coastal power plants.

STAFF RECOMMENDATION

This is a workshop item only. The purpose of the workshop is to solicit comments and suggestions from stakeholders and the public regarding the proposed order. The State Water Board will not take any action on the proposed order at this meeting.

State Water Board action on this item will assist the Water Boards in reaching Goal 6 of the Strategic Plan Update 2008-2012 to enhance consistency across the Water Boards, on an on going basis to ensure our processes are effective, efficient, and predictable, and to promote fair and equitable application of laws, regulations, policies, and procedures.

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STATE WATER RESOURCES CONTROL BOARD RESOLUTION NO. 2009-

ADOPTION OF A WATER QUALITY CONTROL POLICY ON THE USE OF COASTAL AND ESTUARINE WATERS FOR POWER PLANT COOLING

WHEREAS:

1. There are 19 electrical power plants (including two nuclear-fueled plants) located in California that use marine or estuarine waters as a source of cooling water in a single-pass system, known as once-through cooling (OTC). These power plants combined have the capacity to withdraw over 15 billion gallons of water per day.
2. The withdrawal of marine and estuarine waters for the purposes of OTC results in the impingement and entrainment of marine life to the detriment of the marine environment. Impingement occurs when larger aquatic organisms are trapped against a facility's intake screen, resulting in injury or death to the animal. Entrainment occurs when smaller aquatic organisms are drawn into a plant's cooling system and killed.
3. Clean Water Act Section 316(b) has since 1972 required that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available (BTA) for minimizing adverse environmental impact. Section 316(b) is implemented through National Pollutant Discharge Elimination System (NPDES) permits, issued pursuant to Clean Water Act Section 402, which authorize the point source discharge of pollutants to navigable waters.
4. The State Water Resources Control Board (State Water Board) is designated as the state water pollution control agency for all purposes stated in the Clean Water Act, including water quality control planning and waste discharge regulation.
5. The State Water Board and Regional Water Quality Control Boards (Regional Water Boards) (collectively Water Boards) are authorized to issue NPDES permits to point source dischargers in California, including OTC power plants.
6. In 1976, U.S. Environmental Protection Agency (U.S. EPA) issued a rule implementing §316(b), which was challenged and withdrawn. In 1993, U.S. EPA was sued for its failure to adopt regulations implementing §316(b). Under a consent decree, U.S. EPA issued a rule in 2001 governing cooling water intake structures for new power plants. In 2004, U.S. EPA adopted regulation implementing §316(b) for existing power plants. This latter rule was suspended in 2007 in response to a remand decision by the U.S. Second Circuit Court of Appeals.
7. Currently, there are no applicable nationwide standards implementing Section 316(b) for *existing power plants*. Consequently, the Water Boards must implement Section 316(b) on a case-by-case basis, using best professional judgment. Due to the resources required to evaluate the complex technical and biological issues related to intake structures, this approach puts a heavy burden on the Regional Water Boards and provides the potential for inconsistency in regulating OTC power plants.

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8. The State Water Board is responsible for adopting state policy for water quality control, which may consist of water quality principles, guidelines, and objectives deemed essential for water quality control.
9. This Policy ([see Attachment 1](#)) establishes uniform requirements for the implementation of §316(b), using best professional judgment in determining BTA for cooling water intake structures at existing coastal and estuarine power plants that must be implemented in NPDES permits.
10. It is the intent of the State Water Board to ensure that this Policy protects the beneficial uses of the State's coastal and estuarine waters are protected while also ensuring that the electrical power needs essential for the welfare of the citizens of the State are met. The State Water Board recognizes it is necessary to develop replacement infrastructure to maintain electric reliability in order to implement this Policy.
11. It is further the intent of the State Water Board to promote statewide consistency in the implementation of §316(b) in the State's NPDES permit program. Establishing uniform requirements in the implementation of §316(b) for cooling water intake structures at existing coastal and estuarine power plants will make better use of Water Board resources and provide clear guidelines for dischargers and the public.
12. The Ocean Protection Council adopted a resolution on June 20, 2006 that urges the State Water Board "to implement Section 316(b) and more stringent state requirements requiring reductions in entrainment and impingement at existing coastal power plants and encourages the State to implement the most protective controls to achieve a 90-95 percent reduction in impacts"; and encourages the State Water Board to form "a technical review group to ensure the required technical expertise is available to review each power plant's data collection proposals, analyses and impact reductions and fairly implement statewide data collection standards needed to comply with section 316(b)."
13. The State Water Board held public workshops on OTC issues on September 26, 2005 in Laguna Beach and December 7, 2005 in Oakland.
14. The State Water Board held California Environmental Quality Act (CEQA) scoping meetings on July 31, 2006 in Sacramento, May 8, 2008 in San Pedro and May 13, 2008 in Sacramento.
15. The State Water Board co-sponsored a symposium on "Understanding the Environmental Effects of Once-Through Cooling" at the University of California, Davis on January 15 and 16, 2008.
16. The State Water Board formed an Expert Review Panel, which reviewed the scientific aspects of the proposed policy and provided final findings in August 2008 on questions related to the March 2008 Scoping Document ("Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling").
17. The State Water Board staff formed an Interagency Working Group (IAWG) that met regularly to develop realistic implementation plans and schedules for this Policy that will ensure that the beneficial uses of the State's coastal and estuarine waters are protected while also ensuring that the electrical power needs essential for the welfare of the citizens of the State are met. The IAWG included representatives from the California Air

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Resources Board, the California Coastal Commission, the California Energy Commission (CEC), the California Public Utilities Commission (CPUC), the California State Lands Commission, the California Independent System Operator (CAISO), and the State Water Board.

18. The compliance dates for this Policy were developed by the IAWG considering a report produced by the energy agencies (CEC, CPUC, and CAISO), titled "Implementation of OTC Mitigation Through Energy Infrastructure Planning and Procurement Changes," and the accompanying table, titled "Draft Infrastructure Replacement Milestones and Compliance Dates for Existing Power Plants in California Using Once-Through Cooling," included in the Substitute Environmental Document for this Policy. The energy agencies' approach seeks to address the replacement, repowering, or retirement of OTC power plants that (1) maintains reliability of the electric system; (2) meets California's environmental policy goals; and (3) achieves these goals through effective long-term planning for transmission, generation and demand resources. The energy agencies have stated that the dates specified in their report may require periodic updates.
19. To prevent disruption in the State's electrical power supply when this Policy is implemented, the State Water Board will convene a Statewide Advisory Committee on Cooling Water Intake Structures (SACCWIS), which will include representatives from the IAWG agencies. SACCWIS will review implementation plans and schedules submitted by dischargers pursuant to this Policy, and advise the State Water Board on the implementation of this Policy to ensure that the implementation schedule takes into account local area and grid reliability. The State Water Board recognizes the compliance dates in this Policy may require amendment based on, among other factors, the need to maintain reliability of the electric system as determined by the energy agencies included in the SACCWIS, acting according to their individual or shared responsibilities. The State Water Board retains the final authority over changes to the adopted policy. SACCWIS will meet regularly and report to the State Water Board as specified in this Policy. SACCWIS meetings will be noticed on the State Water Board's website and fully open to the Public.
20. While the CEC, CPUC and CAISO each have various planning or permitting responsibilities important to this effort, the approach relies upon use of competitive procurement and forward contracting mechanisms implemented by the CPUC in order to identify low cost solutions for most OTC power plants. The CPUC has authority to order the investor-owned utilities (IOUs) to procure new or repowered fossil generation for system and/or local reliability in the Long-Term Procurement Plan (LTPP) proceeding. In response to the Policy, the CPUC anticipates modifying its LTPP proceeding and procurement processes to require the IOUs to assess replacement infrastructure needs and conduct targeted requests for offers (RFOs) to acquire replacement, repowered or otherwise compliant generation capacity. LTPP proceedings are conducted on a biennial cycle and plans are normally approved in odd-numbered years. Once authorized to procure by a CPUC LTPP decision, the IOUs need approximately 18 months to issue an RFO, sign contracts, and submit applications to the CPUC for approval. Approval by the CPUC takes approximately nine months. If the contract involves a facility already licensed through the CEC generation permitting process, then financing and construction can begin. A typical generation permitting timeline is 12 months, but specific issues such as ability to obtain air permits can delay the process. IOUs often give preference to RFO bids with permits already (or nearly) in place. From contract approval, construction usually takes three years, if generation permits are

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approved, or approximately five years, if generation permits are pending or other barriers present delays. In total, starting from the initiation of an LTPP proceeding (2010 LTPP or 2012 LTPP), seven years are expected to elapse, before replacement infrastructure is operational. Due to the number of power plants affected, efforts to replace or repower OTC plants would need to be phased.

21. Because the Los Angeles region presents a more complex and challenging set of issues, it is anticipated that more time would be needed to study and implement replacement infrastructure solutions. A transmission solution is expected to require approximately the same timeframe, but could be delayed by a greater potential for significant local opposition. In order to assure that repowering or new power plant development in the Los Angeles basin addresses unique permitting challenges, the SACCWIS will assist the State Water Board in evaluating compliance for power plants not under the jurisdiction of the CPUC or operating within the CAISO Balancing Authority Area.
22. To conserve the State's scarce water resources, the State Water Board encourages the use of recycled water for cooling water in lieu of marine, estuarine or freshwater.
23. The State Water Board circulated its draft Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (Policy) and the supporting draft Substitute Environmental Document for public comment on July 9, 2009.
24. The State Water Board conducted a public hearing on the proposed Policy on September 16, 2009.
25. The State Water Board conducted a public workshop on the proposed Policy on December 1, 2009.
26. State Water Board staff has responded to significant oral and written comments received from the public and made revisions to the proposed Policy and Substitute Environmental Document as appropriate.
27. The Resources Agency has approved the State Water Board's water quality control planning process as a "certified regulatory program" that adequately satisfies the CEQA requirements for preparing environmental documents. State Water Board staff has prepared a "[Substitute Environmental Document](#)" for this project that contains the required environmental documentation under the State Water Board's CEQA regulations. (California Code of Regulations, title 23, section 3777.)
28. In preparing the Substitute Environmental Document, the State Water Board has considered the requirements of Public Resources Code section 21159 and California Code of Regulations, title 14, section 15187, and intends these documents to serve as a Tier 1 environmental review. The State Water Board has considered the reasonably foreseeable consequences of adoption of the draft Policy; however, potential site-specific project impacts may need to be considered in any subsequent environmental analysis performed by lead agencies, pursuant to Public Resources Code section 21159.1.

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29. Consistent with CEQA, the Substitute Environmental Document does not engage in speculation or conjecture but, rather, analyzes the reasonably foreseeable environmental impacts related to methods of compliance with the draft Policy, reasonably foreseeable mitigation measures to reduce those impacts, and reasonably feasible alternative means of compliance that would avoid or reduce the identified impacts.
30. The Policy incorporates mitigation that reduces to a level that is insignificant any adverse effects on the environment. From a program-level perspective, incorporation of the mitigation measures described in the substitute environmental document will foreseeably reduce impacts to less than significant levels.
31. A policy for water quality control does not become effective until adopted by the State Water Board and until the regulatory provisions are approved by the Office of Administrative Law (OAL).

THEREFORE BE IT RESOLVED THAT:

The State Water Board:

1. Certifies the final Substitute Environmental Document, which includes the responses to comments, which was prepared in accordance with the requirements of the State Water Board's certified regulatory CEQA process (as set forth in California Code of Regulations, title 23, section 3775, et seq.), Public Resources Code section 21159, and California Code of Regulations, title 14, section 15187, and directs the Executive Director or designee to transmit the Notice of Decision to the Secretary of Resources.
2. After considering the entire record, including oral testimony at the public hearing, adopts the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling.
3. Authorizes the Executive Director or designee to submit the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling OAL for review and approval.
4. Directs the Executive Director or designee to make minor, non-substantive modifications to the language of the Policy, if during the OAL approval process, OAL determines that such changes are needed for clarity or consistency, and inform the Board of any such changes.

CERTIFICATION

The undersigned Clerk to the Board does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on [TBD].

Jeanine Townsend
Clerk to the Board