



California Regional Water Quality Control Board

Central Coast Region



Linda Adams
Secretary for
Environmental
Protection

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Arnold Schwarzenegger
Governor

Sept 3, 2009

Joanna Jensen
Environmental Scientist
Ocean Unit, Division of Water Quality
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100

Dear Ms. Jensen:

COMMENTS REGARDING STATEWIDE WATER QUALITY CONTROL POLICY ON THE USE OF COASTAL AND ESTUARINE WATERS FOR POWER PLANT COOLING

Thank you for the opportunity to comment on the Statewide Water Quality Control Policy on the use of Coastal and Estuarine Waters for Power Plant Cooling (Statewide Policy). The Central Coast Regional Water Quality Control Board (Central Coast Water Board) regulates three large power plants (Moss Landing, Morro Bay, and Diablo Canyon) that use ocean and estuarine waters for once-through cooling (OTC) with National Pollutant Discharge Elimination System (NPDES) permits. Federal 316(b) regulations under the NPDES program are intended to address impingement and entrainment impacts that result from power plant intake of OTC water. The 316(b) regulations have been litigated and held up in the courts for years; and the uncertainty regarding how to address OTC has also held up power plant NPDES permitting decisions.

Central Coast Water Board staff supports the Statewide Policy to clarify how NPDES permits may address impacts of power plant OTC intakes on marine and estuarine environments. Central Coast Water Board staff appreciates that the Statewide Policy addresses the goal of statewide consistency while retaining some flexibility for the coastal Water Boards, as the consensus among marine scientists with extensive experience studying the effects of OTC are that impacts from ocean intakes are often site specific. Thank you for incorporating Central Coast Water Board staff's ongoing comments during the development of the Statewide Policy. Central Coast Water Board staff supports the Statewide Policy and provides the following comments to further improve the document.

Operational and/or Structural Controls Compliance Options

The draft Statewide Policy gives system owners/operators several compliance choices such as dry cooling and reduced water cooling. The Statewide Policy requires that an

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owner or operator of an existing once-through-cooling plant must protect marine life by either of two tracks:

- Track 1 - reduce each unit's intake flow rate to a level that is commensurate with a closed-cycle, wet cooling system by a minimum of 93% or, if that is not feasible,
- Track 2 - use operational or structural controls, or both, to reduce impingement mortality and entrainment of all life stages of marine life for the facility, as a whole at a comparable level to a closed-cycle wet cooling system.

Compared to the Track 1 option of essentially committing to closed-cycle cooling, the Track 2 option requiring operational and/or structural controls to reduce impingement and entrainment is not as straight forward. Marine life (e.g., plankton, larvae, etc.) occurs at such a small scale that entrainment cannot be reduced by filtering to a level any where near comparable to the benefits gained by closed-cycle cooling. Additionally, many of the operational and/or structural controls used to reduce impingement and entrainment in freshwater systems may have little meaning for coastal plants that the Statewide Policy is meant to address.

The draft Substitute Environmental Document for the Statewide Policy mentions some of the technologies that are considered reasonably foreseeable means of compliance. Many of the technologies to reduce entrainment are untested and/or are not applicable to estuarine or marine waters where conditions are vastly different than in lakes or rivers. For example, large waves would tear aquatic filter barriers apart in ocean environments and their enormous size, needed for sufficient power plant cooling flow, is a limitation in harbor environments. Likewise wedge wire screens may work in river environments where currents come in one direction, but this technology is untested in marine environments where currents vary in direction. Additionally, compared to freshwater environments, extremely high rates of biofouling in marine and estuarine environments would rapidly decrease the pore size of wedge wire screens, fine mesh screens, and aquatic filter barriers likely rendering such technologies useless.

Even if freshwater entrainment technologies could be deployed in a marine system, such technologies do not preserve or protect the environment if they simply trade one method of mortality for another. The question of whether filtering kills fewer organisms than entrainment has never been established for marine settings. The U.S. EPA just assumed filtering was better for organisms than entrainment and did not address this question when developing the federal 316(b) regulations. Reducing entrainment by filtering organisms with very small filters (e.g., fine mesh screens, aquatic filter barriers, wedge wire screens) may simply replace entrainment mortality with impingement mortality.

However, there are technologies that power plants can use to reduce OTC impacts in marine environments. Impingement is more easily addressed by technologies although, impingement is generally considered of minor concern with the exception of the open ocean intake at San Onofre. With regards to entrainment technologies, subsurface

intake wells designed to provide cooling water from below the sediment surface may be possible at certain facilities. In locations where underlying geologic conditions are favorable to provide adequate water for power plant cooling, a properly designed array of intake wells that spreads out and slows the intake of cooling water through diffuse subsurface sediment layers could potentially eliminate both entrainment and impingement.

On the OTC and subsurface intake technology related subject, there are currently several potentially beneficial research projects that propose using power plant OTC water to remove power plant atmospheric carbon dioxide emissions. For example, Calera proposes to precipitate "green cement" by combining OTC water with power plant carbon dioxide emissions. Unlike power plants converted to closed-cycle cooling, power plants with subsurface intakes would not prevent the co-location of such carbon dioxide sequestration projects. If successfully combined, the technologies (subsurface intakes and carbon sequestration) could help California in its efforts to reduce or eliminate OTC impacts and to meet greenhouse reduction levels (AB 32).

Mitigation During Interim Period

According to the Statewide Policy, beginning five years after the policy's effective date, the owner or operator of an existing power plant must implement interim measures (e.g., technology based and restoration) to lessen marine life impingement and entrainment, and must continue to do so until full compliance is achieved. Central Coast Water Board staff supports the Statewide Policy requirement that mitigation/compensation is achieved during the interim period. Additionally, Central Coast Water Board staff is pleased that the draft substitute environmental document allows Regional Water Boards to use the habitat production foregone method in the decision making process for restoration projects. Mitigation based on such approaches provides many environmental benefits. For example, with mitigation funds related to the Moss Landing Power Plant's withdrawal of OTC water, the Elkhorn Slough Foundation has preserved and enhanced thousands of acres of wetlands and surrounding watersheds in and around Elkhorn Slough.

Although not in the Statewide Policy, Central Coast Water Board staff supports the principal of establishing a water/organism use fee (e.g., so many dollars per million gallons) as interim mitigation for the use of the public resource and impacts caused by OTC. Central Coast Water Board staff suggests that if such an approach were adopted, appropriate fees should be directed to implement beneficial coastal environmental projects, including watershed projects.

Wholly Disproportionate Demonstration

In April of 2009, the U.S. Supreme Court reversed the Riverkeeper II decision, and held that Clean Water Act section 316(b) does allow some cost-benefit analysis in setting the national performance standards for existing OTC water intake structures and also for site-specific variances from those standards. Consistent with the Supreme Court decision, the Statewide Policy includes an allowance, in limited circumstances, for a wholly disproportionate demonstration. Page 9 of the Statewide Policy states,

“At the request of an owner or operator of any existing fossil-fueled power plant with generating units with a heat rate of 8500 British Thermal Units (BTUs) per Kilowatthour (KWhr) or less, or any existing nuclear-fueled power plant, a Regional Water Board may consider the establishment of alternative, less stringent requirements, than those specified in Track 1 and Track 2, above, if the Regional Water Board determines that the costs to comply with Track 1 or Track 2 are wholly disproportionate to the environmental benefits to be gained.”

During the process of developing a state OTC policy, experts testified that in some cases after-the-fact redesigning of large scale power plants to implement closed cycle cooling may not be possible and/or cost effective and that mitigation may be the only effective solution to address OTC effects. Central Coast Water Board staff supports that the Statewide Policy allows for mitigation both as an interim measure and to compensate for OTC impacts in certain circumstances where technological fixes such as closed cycle cooling are not possible and/or cost effective.

The Statewide Policy allows Regional Water Boards to decide what is considered wholly disproportionate. Although Central Coast Water Board staff appreciates this flexibility, permitting decisions may be strengthened and clarified if the Statewide Policy would include parameters the Water Boards could use to value and compare the loss of natural resources with the monetary costs of compliance. For example, what do the Water Boards use to compare the value of the natural resource to the monetary cost of compliance, in order to determine if the cost is wholly disproportionate?

The Statewide Policy requirement to mitigate and compensate for impacts that can not be addressed by technological “fixes” will avoid situations where OTC is "banned" while power plants continue to use OTC water for decades without any benefits to the environment. For example, power plants in New York State continue to use OTC rather than converting to closed-cycle cooling while in litigation. Allowing mitigation in certain circumstances will allow for compliance that has many other environmental benefits and thereby makes the Statewide Policy stronger and more protective of the environment than federal regulations. Thank you again for the opportunity to comment on the Statewide Policy, if you have questions please contact **Peter von Langen at (805) 549-3688** or pvonlangen@waterboards.ca.gov or Michael Thomas at (805) 542-4623 or mthomas@waterboards.ca.gov.

Sincerely,



Roger W. Briggs
Executive Officer

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