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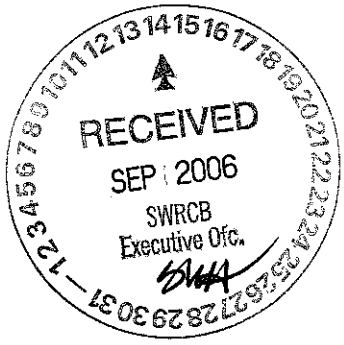
Once Through Cooling
Deadline: 9/15/06 5pm

TENERA Environmental



September 13, 2006

Ms. Song Her
Clerk to the Board
State Water Resources Control Board
1001 I St.
Sacramento, CA 95814

Subject: Comment Letter – Proposed Statewide Policy for Once-Through Cooling

Dear State Water Board Members:

We would like to submit the following comments on the proposed statewide policy on the use of seawater for once-through cooling (OTC) by California's power plants that is being considered for adoption by the California State Water Resources Control Board. Tenera Environmental has been involved with studies on the environmental effects of OTC by coastal power plants in California since 1975. Tenera scientists have been involved in most of the recent impingement mortality and entrainment (IM&E) studies in the state and have developed with input from federal and state agency, academic, and industry scientists and engineers the preferred approaches for assessing the effects of OTC. Our expertise and scientific credibility on this subject is reflected in our authorship of many publications and reports, and participation in hearings and workshops on OTC. Most notably, one of our scientists, John Steinbeck, was the principal author on a California Energy Commission funded report on the design and analysis of studies on the ecological effects of OTC and was one of the invited instructors at a recent State Board Training Academy workshop on OTC. Even though Tenera contributed to the extensive comments being submitted to the Board from several California utilities we felt compelled to submit our own comments because of our concern that the Board was considering adopting a policy that would result in serious problems with electrical supply to the state, serious financial consequences to electrical suppliers and their customers, and no environmental benefits to the state's coastal ecosystems.

The State Water Board staff's more stringent interpretation of the EPA's Phase II rule regulating seawater intakes for cooling water purposes has the intent of providing the maximum protection to California's ocean resources. While we fully support and encourage such good intent, it rarely comes without a price and in this case, as many experts have pointed out, a relatively significant one to our State's electrical supply system. With this potential for ratepayers absorbing the expense of large compliance solutions, we want to urge the Board to carefully examine the underlying scientific evidence for both the nature and extent of problems that are associated with the use of seawater for cooling water purposes. We are taking the time to write you on this matter,

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because when you consider the scientific evidence for effects, you will be convinced as we are that the field data Tenera and others has gathered not only provide little, if any, reason to expect effects on coastal populations of fish and shellfish, but none have been detected. Our opinion is also shared by a number of independent scientists who have also expressed similar views and opinions to the Board staff.

We believe that such a striking difference between the views of scientists and policymakers on effects of once-through cooling systems to a large degree is due to the unscientific connection of cause and effect. A general knowledge of the large and widespread declines in many of our commercial and recreational coastal and bay fisheries are being inappropriately linked to recent studies of power plant intakes, which have reported large numbers of larval fish being entrained. Some regard these reports on large numbers of larval fish being entrained as new and previously missing regulatory information that is the missing explanation for the declines in our fisheries. This conclusion ignores or overlooks the fact that the vast majority of larval fish entrained by once-through cooling are not recreational or commercial species. Recent reports present the total estimated entrainment of larval fish, but more importantly for several facilities, the entrainment estimates were compared to an estimate of local larval populations enabling a more realistic assessment of potential intake effects. With only a few exceptions, the fraction of local larval populations entrained by the cooling water intake was found to be so small that there was no reason to believe it could affect their adult populations. In fact, with or without the presence of the cooling water intake, ninety-nine percent or more of the larval fish that were entrained would otherwise die of natural causes.

Notwithstanding the fact that we and other scientists are unable to prove that there are no effects of entrainment, as small or as local as they might be, we have found evidence in both population science and field observations that the use of seawater for once-through cooling neither jeopardizes or harms fish and shellfish populations or ecosystems. In fact, adult populations of the fish species, such as gobies, that are most commonly entrained in their planktonic larval stage are thriving in their bay and estuarine habitats. In the few cases where comparable data were available from previous studies done over 25 years ago, the entrainment numbers were essentially unchanged despite the withdrawal of seawater for once-through cooling over the period between the two studies. At two locations where the estimated number of entrained larvae of striped bass was replaced with stocked fish, the population not only continued to decline after the fish stocking effort and to the present, even though the amount of cooling water withdrawn from their habitat has been dramatically reduced. Similar evidence from the east coast is found in the dramatic recovery of striped bass populations following a five-year moratorium on recreational and commercial fisheries, even though cooling water withdrawal continued during the moratorium.

We believe that given the present lack of evidence for real or potential impacts of cooling water intake systems it is prudent to delay the formulation of a statewide policy for implementation of the Phase II rule until the results of ongoing studies have been evaluated. The current draft policy would raise compliance performance standards and severely restrict the options available for compliance, particularly restoration. We have serious concerns that restricting the use of restoration, in whole or part, will short change our environment of an opportunity to make a real difference towards future habitat restoration and protection; from a ecologically point of view, closed cycle-cooling can make no such promise. At the State Board Training Academy workshop on August 21-22, 2006, staff members from the State and Regional Boards were presented information on the successful use of restoration to offset entrainment losses from the Moss Landing Power Plant by Mr. Michael Thomas, the Assistant Executive Officer at the Central Coast Regional Board. The academic scientists who had also worked on the project echoed Mr. Thomas' enthusiasm for the restoration program. The contribution of the Moss Landing Power Plant to the restoration of the Elkhorn Slough to offset the facility's intake effects should become a model for compliance. Nearly every other state resource and regulatory agency is actively employing restoration alternatives with great success to mitigate environmental impacts. Restoration for cooling intake effects offers a tremendous potential windfall for California's coastal habitats and marine populations, if it turns out, as is the present case, that cooling water intakes are not causing population impacts, or even if undectable impacts were occurring, restoration would offset any such uncertainties.

The issue of actual impacts from OTC was also discussed at the State Board Training Academy in reference to the Moss Landing Power Plant. The scientists involved in the workshop as instructors who had consulted to the Central Coast Board staff on the project all agreed that there was no evidence of significant effects to the environment from entrainment. There was disagreement on whether the results could be used to argue that there are no effects, but the results were used to convince the Central Coast Board that entrainment by Moss Landing was not seriously degrading the environment, and restoration was the most environmentally beneficial solution based on the data. It is important to point out that the results of the entrainment study from the Moss Landing Power Plant in Moss Landing Harbor showed much higher levels of entrainment mortality than we have calculated at power plants located in open coastal environments. Any effects of OTC at these facilities would be insignificant to coastal populations of fishes. The State will lose out on numerous real opportunities to improve coastal habitat and fish and shellfish populations if the proposed policy is implemented limiting the use of restoration.

We sincerely hope you will carefully consider our comments and the more detailed information we have presented with EPRI Solutions on behalf of several of California's utilities. We believe that with the correct application of science and a state policy that allows for flexible compliance with the Federal Phase II rule with an emphasis on

restoration will result in the greatest possible benefits for the coastal environment and the people of California.

Respectfully Submitted,

Dr. David L. Mayer
President

Mr. John Steinbeck
Vice President