

CALIFORNIA COASTAL COMMISSION

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316 (b)
Once Through Cooling
Deadline: 9/15/06 5pm



September 15, 2006

Chair Tam Doduc and Members of the Board
c/o Song Her, Clerk to the Board
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814



VIA E-MAIL: commentletters@waterboards.ca.gov

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

Dear Chair Doduc and Board Members:

Thank you for the opportunity to comment on the above-referenced proposed policy. These comments represent the position of the California Coastal Commission staff and are based in part on our involvement in the work of the State and Regional Boards, the Energy Commission, and other entities involved in reducing the effects of once-through cooling on California's coastal environment. We generally support the approach and the direction the State Board is taking with the proposed policy and we support most of its proposed provisions.

We have several recommended changes, however, that we believe are necessary for the policy to create actual, significant reductions in the adverse environmental effects of California's coastal power plants. By incorporating the comments from this letter into the policy, we believe the policy would more effectively help meet the state's goals of protecting California's coastal waters and providing for continued and increased electricity production.

BACKGROUND/ADMINISTRATIVE ISSUES

In addition to some changes to the proposed policy itself, we recommend you incorporate the following comments into the Policy's Background section

Background Section D – Other State Agency Authorities and Involvement: We recommend you include a brief description of Coastal Act provisions that apply to once-through cooling systems and their impacts. Among the Act's key provisions are those related to protection of the marine environment, biological resources, and water quality, as well as those that allow for the reasonable expansion of existing coastal-dependent facilities. This section should also relate that the Coastal Act provides for shared responsibility with the State and Regional Boards for implementing provisions of Section 13142.5 of the Porter-Cologne Act related to protection of coastal waters and minimizing the adverse effects of entrainment.

Additionally, while the section mentions the Coastal Commission's role in Energy Commission proceedings for thermal power projects with generating capacities of 50 megawatts or more, it should also state that the Coastal Commission has independent permit jurisdiction for thermal power projects of less than 50 megawatts.

Entrainment/Impingement Studies and Determining Effects: We recommend the policy include as part of its Background section citations of the numerous entrainment and impingement studies conducted here in California during the past several years, all of which identified significant impacts to the marine environment. These include studies done for power plants at Moss Landing, Morro Bay, Diablo Canyon, Huntington Beach, South Bay, and others. The policy should also cite the studies done by Energy Commission staff that identify broader issues associated with multiple coastal power plants, including the overall impacts due to once-through cooling, concerns about aging coastal power plants, and others. We note that these studies represent just a small portion of the research and policy development done at the state and federal level that have identified impacts related to once-through cooling.

GENERAL COMMENTS

As noted above, we generally concur with the proposed approach to this policy. We believe that first emphasizing the avoidance of impacts through structural and operational improvements, and then allowing restoration measures will provide a reasonable amount of flexibility for implementing the policy and will also result in overall water quality improvements.

Additionally, it is evident from reviewing various sources of information about California's energy network that implementing the policy will not substantially affect California's electricity supplies. Even though the 21 coastal power plants using once-through cooling represent an important part of the state's potential electricity supply, these coastal power plants overall provide much less electricity than their stated capacity and many could be retooled or replaced without causing an undue burden to the state. Although these plants have the capacity to produce up to about 30% of the in-state generating capacity, they have recently contributed closer to only 20% of the state's generation. When the two nuclear facilities are considered separately, the total contribution drops of the 19 remaining coastal plants drops to about 10%. This suggests that eliminating or curtailing most of these once-through cooling systems can be done without substantial effects on the state's economy.

SPECIFIC COMMENTS ON SECTIONS OF PROPOSED POLICY

Support of Provisions: As noted previously, we support most provisions of the proposed policy. Key provisions include Section 2.b.iii, which would prohibit the use of site-specific determination of Best Technology Available (40 CFR 125.94(a)(5)). Without this prohibition, the policy would like be rendered nearly useless as a tool for protecting the state's waters, since the site-specific determination provides what is essentially an immense loophole for compliance. Section 2g, which would require cumulative impact studies, is also important. Initial research suggests that some areas of the coast are experiencing significant cumulative impacts due to multiple power plant intakes with shared source water areas. We also believe Section 2h, addressing restoration, reflects the proper use of restoration, in that it is not the first mitigation

option, but is allowed only after the use of avoidance and minimization measures. We also concur with the use of Expert Review Panels, as identified in Section 4. Our experience here in California over the past several years has shown that use of such panels provides more rigorous and defensible studies. Finally, the requirement in Section 6 to assess impacts to all affected marine organisms is necessary to fully identify the scope of the impacts caused by once-through cooling systems.

Recommended Additional Provision – New once-through cooling as a last resort: Our one major recommendation for an addition to the policy is that include a provision stating that once-through cooling is to be used by new or replacement generating units only when alternative water supplies or alternative cooling sources are determined to be both environmentally undesirable and economically unsound. “Environmentally undesirable” means having a significant environmental impact, and “economically unsound” means economically infeasible.

This recommended provision is based on language adopted by the California Energy Commission in 2003 and applies to power plants proposing to use fresh water for cooling purposes. We believe the same provision is applicable and necessary for coastal power plants.

Recommended Changes to Policy Provisions:

Recommended Change to Policy Sections 1 & 2, and Definitions – “New” and “Existing” Plants:

We are concerned that the proposed definition of “new power plant” could significantly limit the effectiveness of the proposed policy in reducing once-through cooling impacts. The policy’s existing definition for a new power plant creates a loophole that could result in little or no impact reduction – it would allow plants to install units with higher generating capacity while using the same amount of cooling water or only slightly less. While this represents in one sense a more efficient generating method (i.e., more megawatts generated per million gallons of seawater used), it may not reduce the overall amount of seawater used for cooling and therefore would not reduce adverse effects to marine biology. In fact, the current proposed definition would likely result in greater impacts, since any new and more efficient generators would likely run more often than existing generators, and would therefore use more water overall.

We therefore recommend either of two changes to the proposed definition of “new power plant”:

- Change the definition’s second sentence to: “A major modification is a modification of the facility that increases electrical production capacity and **or** increases the intake flow rate”; or,
- Define “intake flow rate” the same way as it is used for the calculation baseline described in Policy Section 2e – that is, allow a new or modified unit to use no more water than was used by the unit it is replacing.

Recommended Change to Policy Section 2 – Performance Standards: We generally concur with the proposed requirement that cooling water intakes reduce their entrainment impacts by 90% and their impingement impacts by 95% (i.e., the high end of the federal performance standards). We also concur with your proposed two-step approach allowing restoration credit only after operational or structural controls have resulted in at least a 60% reduction. However, we recommend one additional change that would more effectively reduce environmental impacts and would focus more specifically on the cause of those impacts.

As written, the performance standards appear to apply to an entire facility, which may not be the most effective way of decreasing the amount of cooling water used and reducing impacts. We therefore recommend that the standards instead be applied to the individual generating units at a power plant rather than to an entire plant. This would likely result in an overall greater reduction in flows and impacts.

If this is somehow determined not to be feasible, we believe the standards at the very least should apply to each intake at a power plant – for example, if a power plant has two intakes that each provide cooling water for two generating units, the performance standards would apply separately to each intake. This is clearly in line with the U.S. EPA's definition of "Phase II facility", in which intake structures serve as part of the basis for describing a facility. This approach might also provide an incentive for a power plant to upgrade older and less efficient units more quickly.

Recommended Change to Policy Section 2b – Entrainment Reduction: We generally concur with this proposed provision, though we are concerned about the suggested 15% capacity utilization threshold. From reviewing various records associated with coastal power plant operations, it appears that of the 19 non-nuclear coastal power plants, three are already planning to switch from once-through cooling to dry cooling (Humboldt, Encina, and South Bay), and most of the rest operate at less than 15% annual capacity. It appears that only four would be subject to the proposed entrainment reduction requirements – Moss Landing, Haynes, Huntington Beach, and Scattergood. This suggests that a 15% threshold would have only a relatively modest effect in creating significant entrainment reductions along the California coast.

We therefore recommend either of two alternatives – either remove the 15% threshold entirely from the policy so that the entrainment reduction requirements would apply to all facilities, or apply the threshold to individual generating units rather than to entire facilities. The first option would clearly allow the policy to result in actual entrainment reductions. The second option, too, would likely result in substantial entrainment reductions and could additionally create other benefits. The most obvious is that applying the threshold to individual generating units would create an incentive to operate older and less efficient units less often in favor of the newer, more efficient units. It may also create an incentive for power plant operators to upgrade those older units more quickly.

On a related note, we observe that the four power plants that exceed the 15% capacity factor appear to have feasible options to once-through cooling. Three of them – Moss Landing, Haynes, and Huntington Beach – have large areas around the power plant on which to site dry cooling equipment, and Scattergood, while space-constrained, may have an alternative source of cooling water in the nearby Hyperion Treatment Plant.

Recommended Change to Policy Section 2c – Nuclear and Conventional Facilities: We generally concur with the proposed policy's approach that would allow nuclear facilities to meet entrainment performance standards using restoration only, if operational or technological measures would create safety risks as identified by the Nuclear Regulatory Commission. Although California's two coastal nuclear power plants represent a substantial percentage of the state's seawater intake volumes, they do not appear to have available to them feasible alternatives to replace their once-through cooling systems.

However, we note that nuclear facilities elsewhere in the country are apparently operating safely with various technological measures meant to reduce their marine resource impacts, so it is clearly feasible in some instances to include such measures, particularly those associated with impingement. Additionally, there may be opportunities soon at both Diablo Canyon and SONGS to install necessary structural mitigation measures without disrupting plant operations. Both plants are proposing to replace their steam generators, so changes to the once-through cooling systems could be implemented during a plant shutdown. This would allow the changes to be made without having them be the cause of the shutdown, so the cost/benefit analysis of the changes would not have to include making up for the lost power.

Recommended Change to Policy Section 2d – Water use tied to electricity generation: We concur with the intention of Section 2d to reduce the amount of seawater used when a power plant is not generating electricity. However, to ensure the provision actually results in less water use, we recommend making the following change to the provision's first sentence:

"If electrical energy will not be produced for distribution or sale on the state's energy grid for a period of two or more days..."

This change will ensure that large volumes of seawater are not being used unnecessarily when the plant is generating only small amounts of electricity for on-site use. It also provides a stronger tie between a power plant's use of a public resource – the ocean – and its creation of a public benefit – having electricity available on the state's power grid.

Recommended Change to Policy Section 2e – Calculation baseline: We generally concur with the proposal to establish the baseline cooling water use using actual flows rather than maximum permitted flows. However, to better identify the entrainment impacts associated with the baseline use, we recommend changing the provision to require that baseline flow rates be identified on a monthly or seasonal basis. Because the abundance and critical life stages of organisms subject to entrainment vary throughout the year, merely reducing cooling water use on an annual basis may not result in a concomitant reduction in entrainment.

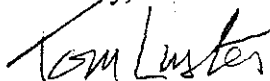
Recommended Change to Policy Section 5 – Reference Stations: Recent power plant entrainment studies done for both the Regional Boards and the California Energy Commission have required that samples be collected from locations related to the power plant intakes. This requirement is based on the recognition that the plankton community along the California coast is highly variable and that each intake's unique location in the water column affects a unique part of the plankton community. Intakes located at the same distance from shore and at the same water depth but are several miles apart are likely to entrain different sets of organisms.

The proposed policy states only that reference stations may be used if they provide the same habitat as the power plant, if determined by the proposed Expert Review Panel. If reference stations are to be used at all, we would prefer to have this provision specifically require that the stations be located within the source water area of a power plant. Since some of our coastal power plants have overlapping source water areas, there may be some instances where the Expert Review Panel would approve shared reference stations for those power plants.

CLOSING:

Thank you again for the opportunity to comment. We look forward to continued coordination with your staff on these issues and to your adoption of an effective policy that will provide environmental protection and continued energy generation.

Sincerely,



Tom Luster
Energy and Ocean Resources Unit