



LS Power Generation, LLC
 1290 Embarcadero Road
 Morro Bay, CA 93442
 (805) 595-5515 • (805) 595-5592 FAX

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

September 15, 2006

Song Her, Clerk to the Board
 State Water Resources Control Board

Submitted Via Fax: (916) 341-5620



SUBJECT: Comment Letter – Proposed Statewide Policy for Once Through Cooling

Dear Song Her:

LS Power Generation, LLC (LSP) respectfully submits the following comments on the State Water Resource Control Board (SWRCB) Scoping Document: Proposed Statewide Policy on Clean Water Act Section State 316(b) Regulation (proposed policy). These comments are being submitted on behalf of the following California-based LSP power plants: LSP Morro Bay LLC, in Morro Bay; LSP Moss Landing, in Moss Landing; and LSP South Bay, in Chula Vista. Together, these three power plants are capable of generating more than 4500 megawatts of electricity. Each of these power plants uses once-through cooling (OTC) and each would presumably be regulated under this policy.

Our primary and overarching concern about the proposed policy is that it mandates severe and inflexible restrictions on the use of OTC but has no scientific or technical basis to support those restrictions. It cannot be overstated that the proposed policy will have far-reaching economic and environmental impacts that have not been assessed. For these reasons, it is imperative that the SWRCB perform a thorough analysis of the impacts that will result from implementation of the final policy.

No Evidence to Warrant a More Restrictive Policy

In proposing a policy that is significantly more restrictive than the federal Phase II 316(b) rule, the SWRCB is marching directly into a swamp that EPA purposefully avoided: the debate over impacts. EPA realized early on that making universal assumptions about the effects and benefits of OTC was neither reasonable nor practical because there are simply too many variables to consider. Each power plant is unique in its design, location, and operation. And as a result, each power

Song Her, State Water Resource Control Board
LS Power Generation, LLC. - Comments on Proposed Statewide Policy for Once Through Cooling
September 15, 2006
Page 2 of 6

plant has a unique effect on the local environment. The federal rule seeks to reduce impingement and entrainment, largely through the use of technology, but was intentionally designed to allow for site-specific considerations in appropriate instances.

By contrast, the SWRCB's proposed policy—in absence of any scientific evidence—makes the sweeping conclusion that OTC results in unacceptable impacts at all locations in California, without exception. It's an astonishing conclusion both in its dubious basis and lack of consideration for the environmental and economic costs that would result from implementation of the policy.

The SWRCB staff appears to be persuaded by the arguments promoted by opponents of OTC that lump together various reports about threats to marine resources with raw statistics from impingement and entrainment monitoring results. This information is combined to create an assertion that OTC is responsible for the decline of marine resources in California. While that argument may sound intellectually appealing, it has no basis in fact.

For example, opponents of OTC have cited the Pew Commission Report, which identifies nine major threats to marine resources, as evidence that OTC must be eliminated. However, the Pew Commission did not identify OTC as a threat to marine resources and it is not mentioned in their report. In fact, the only power-industry-related threat the report does identify is acid rain resulting from air pollution—an impact that would likely increase if the SWRCB OTC policy is adopted as proposed.

Similarly, the scoping document selectively lists data from the impingement and entrainment monitoring results from three power plants (San Onofre Nuclear Generating Station, Diablo Canyon Nuclear Power Plant, and the South Bay Power Plant). Presumably, these data are included to illustrate the magnitude of harmful effects resulting from OTC. In other words, since the numbers are large, the impacts must be significant and the policy warranted. (It bears noting that the two nuclear power plants also happen to be the two largest cooling water users on the entire western coast of North America and operate at very high capacity factors. This makes them poor choices for represent the impacts of OTC at all 21 California power plants.)

The problem with this reasoning is that the impingement and entrainment monitoring results—regardless of their magnitude—are meaningless absent any context. Inherent in the process of setting environmental standards is the understanding that localized effects can and do occur; therefore the goal is sustainable protection of overall environmental quality. However, the proposed policy aims to reduce the use of OTC to the exclusion of all other considerations, such as beneficial uses, cost of compliance, and whether such reductions will result in any environmental benefit. Such an absolute approach is unique among regulatory policies. Indeed, the

Song Her, State Water Resource Control Board
LS Power Generation, LLC. – Comments on Proposed Statewide Policy for Once Through Cooling
September 15, 2006
Page 3 of 6

SWRCB's own anti-degradation policy (Resolution 68-16) requires consideration of water quality "consistent with maximum benefit to people of the State."

EPA recognized the importance of establishing a standard but also allowing consideration of the unique factors that determine whether that standard can be reasonably achieved. The proposed policy not only establishes much more restrictive standards than the federal rule, it also severely restricts consideration of site-specific circumstances. The consequences of this inflexibility can be illustrated by showing how the proposed policy would apply to the Moss Landing Power Plant.

Moss Landing Example

The Moss Landing Power Plant (MLPP) has been in operation since the 1940s. The plant is located on Moss Landing Harbor, off Monterey Bay and adjacent to the Elkhorn Slough. The power plant has been continuously operational since it was first constructed and all the electrical generation on site has been designed to utilize OTC. In 2001, two new gas-fired combined cycle units (units 1 & 2) came on-line at MLPP. These new units, in combination with the already existing units 6 & 7, make MLPP the largest power plant in the state of California in terms of electrical generating capacity.

At the request of the Central Coast Regional Water Quality Control Board (CCRWQCB), new entrainment studies were performed to determine the impacts that could be expected from the operation of units 1 & 2. Those entrainment studies were performed under the direction of a technical working group (TWG) that included state agency staff and their independent technical experts. The study found that 13% of the fish larvae in the Elkhorn Slough/Moss Landing Harbor are at risk of entrainment from operation of the new units.

The CCRWQCB staff and their independent scientists determined the impacts from the use of OTC at Moss Landing to be significant enough to warrant mitigation but not so significant as to require installation of the alternative cooling or other flow-reduction technologies that were evaluated. This conclusion is important because it is both recent and contrasts starkly with the reasoning that underlies the proposed state policy.

No discernable changes

In a 2003 staff report for an NPDES permitting hearing, the CCRWQCB staff dedicates considerable text to explain that the impacts from OTC cannot be reliably translated into impacts to adult populations and, further, that eliminating OTC at Moss Landing is unlikely to result in discernable changes to the populations of fishes in Elkhorn Slough and Moss Landing Harbor.

Song Her, State Water Resource Control Board
LS Power Generation, LLC. - Comments on Proposed Statewide Policy for Once Through Cooling
September 15, 2006
Page 4 of 6

The staff report cites independent studies that show the population of several species of fish in Elkhorn Slough has been stable or increasing over the past several decades:

"Since the 1970s, the abundance of both juvenile and adult fishes in Elkhorn Slough has decreased somewhat. However, in general, the species composition and overall densities of the dominant fish larvae appear to have remained fairly similar, with some species of fish larvae being considerably more abundant in 1999-2000 than in previous decades. The main categories of fish larvae exhibiting higher densities were gobies, the Pacific herring, Pacific sand lance, staghorn sculpin, white croaker, true smelts, and blennies." (emphasis added)

The entrainment assessment study for Moss Landing determined that the following assemblage of fishes made up 95% of all the fishes subject to entrainment by the power plant:

- Various gobies (87% of entrained larvae)
- Pacific staghorn sculpin (2 %)
- White croaker (2%)
- Blennies (2%)
- Pacific herring (1%)
- Longjaw mudsucker (1 %)

In other words, five of the six fish most at risk for entrainment—and representing 94% of all the fish species entrained by the power plant—have actually increased in abundance over the past several decades. Furthermore, this increase has occurred during a period of continued operation at the Moss Landing Power Plant.

The study found that the populations of some species of fish, specifically the longjaw mudsucker and northern anchovy, have declined over the study period. However, those changes in population appear to be habitat-related, not due to effects of the power plant:

"Thus, the main reason for these changes in the Elkhorn Slough fish assemblages is erosion and the subsequent shifting of sediment, which has influenced the ability of certain fishes to feed and successfully spawn and produce larvae or for immigrating larvae to survive in waters that may be increasingly turbid and fast moving."

Finally, after acknowledging the difficulty of linking population effects to impacts from the power plant, the staff report makes the following conclusion:

"Even if one assumes that MLPP has contributed to the potential decline in longjaw mudsucker and northern anchovy larval species, the assumed

Song Her, State Water Resource Control Board
LS Power Generation, LLC. – Comments on Proposed Statewide Policy for Once Through Cooling
September 15, 2006
Page 5 of 6

benefit would then be an increase in these larval species if closed cooling were implemented. However, it is difficult to conceive a scenario in which potential increases in these two larval species could possibly justify the costs of closed cooling alternatives."

In summary, the CCRWQCB staff along with their independent experts reviewed the site-specific data and decided that there were insufficient impacts to warrant the use of alternative cooling or flow reduction technologies given the costs of those systems and the immeasurable ecological benefit that would result from their use. However, the CCRWQCB staff did not conclude an absence of impacts from the use of OTC at MLPP; rather, they determined that despite the lack of evidence showing any population-level effects, the loss of larvae is by itself an impact. The staff used this conclusion to successfully argue in favor of requiring \$7.7 million be paid to fund habitat restoration projects aimed at improving habitat for the species most at risk for entrainment. Those funds have been paid and when considered in conjunction with leveraged funds, have helped to implement restoration projects in Elkhorn Slough valued at more than \$20 million.

No advances in science or technology

In the few years since units 1 & 2 were permitted, there have been no advances in the understanding of the impacts of OTC, no new data on fish populations, no significant advances in alternative cooling technology; nothing that would cause the CCRWQCB staff and their experts to reach a conclusion today that would be significantly different than the one they reached in 2003. In spite of this fact, the proposed policy would have forced the CCRWQCB to make very different findings regarding the use of OTC at Moss Landing units 1 and 2.

Meeting the proposed policy standards would require the installation of air cooled condensers (ACC) on units 1 and 2 since there are no other site-appropriate technologies that could achieve the minimum flow reduction of 60% required by the policy. (It should be noted that installation of ACC technology would require changes in land use ordinances, so it is not entirely certain that the technology is feasible at MLPP.) In 2003, the cost to retrofit units 1 and 2 with ACC was calculated to be \$140 million. At that time, the CCRWQCB evaluated the theoretical feasibility of several alternative cooling technologies and concluded that none (including technologies that, while not actually feasible at the site, cost "only" \$47 million to install) was justified given the high cost and low environmental benefit. The proposed state policy would prohibit the Regional Board staff and their independent experts from making such a site-specific determination as to whether there is sufficient environmental benefit to be gained by requiring alternatives to OTC.

It should be noted that this evaluation only compares the expected environmental benefit with the estimated financial cost of implementing the technology. It does not evaluate the negative environmental impacts associated with alternative cooling

Song Her, State Water Resource Control Board
LS Power Generation, LLC. – Comments on Proposed Statewide Policy for Once Through Cooling
September 15, 2006
Page 6 of 6

technologies, most notably the decreased generation efficiency and commensurate increase in air pollutants, including greenhouse gases.

Summary and Recommendations

It is evident that the additional restrictions and requirements of the proposed policy (in contrast to the federal rule) have not been justified. More importantly, there is no evidence on record to suggest that they ever can be justified. Properly evaluating and demonstrating why those additional restrictions are necessary—whether to satisfy state law or provide a required greater level of environmental protection—will be a substantial effort. Identifying and evaluating the economic impacts that will result from implementation of the final state policy will be a similarly substantial effort. The potentially severe impact to the state's economy and electric reliability ensure that the review and approval process will be subject to intense scrutiny.

Regardless of any action by the SWRCB, the power plants subject to EPA's Phase II rule must proceed to comply with the federal rule. As a result, reductions in the effects of OTC will occur even in the absence of scientific evidence supporting the need for those reductions. All of this begs the question of why a state 316(b) policy is even necessary.

Rather than develop a new policy, the SWRCB should focus its resources on ensuring that the federal rule is uniformly and consistently applied at affected facilities throughout the state. There is a need for technical support among the various Regional Boards and other state agencies that participate in NPDES permitting. The SWRCB can work with dischargers and Regional Boards to identify areas where the federal policy is unclear and develop guidance that facilitates implementation of the federal rule within the state. The SWRCB is already making progress in this area, as evidenced by the recent Water Boards Training Academy class on assessing the impacts of OTC. As we have in the past, LSP will continue to support such training by making our facilities available for tours and discussions on the technical issues related to OTC.

Thank you for the opportunity to provide comments on the proposed policy. Should you have any questions or require additional information, feel free to contact me at 805/ 550-4595.

Sincerely



James M. White
Manger, Environmental Health and Safety