Public Hearing (9/16/09)
Once Through Cooling
Deadline: 9/30/09 by 12 noon

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September 30, 2009

Ms. Jeanine Townsend
Clerk to the Board
State Water Resources Control Board
1001 I Street, 24th Floor
P.O. Box 100
Sacramento, CA 95812-0100

RE: *Proposed Water Quality Control Policy of the Use of Coastal and Estuarine Waters for Power Plant Cooling and the Associated Supplemental Environmental Document*

Dear Ms. Townsend:

AES Southland (AES-SL), the owner of the largest fleet of once-through-cooled (OTC) generating facilities in the state, appreciates the opportunity to provide comments on the staff's proposed "Water Quality Control Policy of the Use of Coastal and Estuarine Waters for Power Plant Cooling" (Policy) and the Supplemental Environmental Document (SED).

AES-SL owns the Redondo Beach, Alamitos and Huntington Beach generating stations, which together have over 4,200 MWs of installed capacity and 14 individual generating units. The facilities are located in the Los Angeles basin Local Capacity Requirement (LCR) area and represent approximately 18% of Southern California Edison's peak demand. Affiliates of AES-SL also own close to 200 MWs of nameplate wind capacity in California and are actively developing another 350 MWs of in-state wind resources.

AES-SL applauds the staff's decision to convene the multi-agency working group which contributed to an improved Policy compared to previous versions. AES-SL recognizes the enormous complexities associated with developing a Policy on OTC that protects our marine environment and also takes into account electric reliability, climate change, criteria pollutants, electricity rates, water supply and implementation feasibility.

While the current draft is an improvement over previous versions, AES-SL still has significant concerns about the consequences of the Policy as proposed. First, the proposed two track system does not leave any feasible compliance alternatives aside from shutting down or retrofitting to closed cycle cooling, which is not possible at many existing locations. Implementing a policy that essentially forces units to shut down prematurely is not equitable. Second, the Policy does not adequately consider the actual economic impact of what is being required, which results in a cost of compliance that is wholly disproportionate compared to the environmental benefits achieved. This is inconsistent with guidance given by the United States Supreme Court. Finally, AES-SL does not believe that the SED is sufficient to meet the California Environmental Quality Act (CEQA) and urges the Water Board to devote the necessary time to fully analyze the total impacts of the proposed policy to ensure that it is consistent with California law.

AES-SL acknowledges that other parties are filing extensive comments regarding the above points and hereby incorporates by reference the comments submitted by the California Council for Environmental and Economic Balance, Southern California Edison, Los Angeles Department of Water and Power, Dynegy, RRI, and NRG Energy.

AES-SL also appreciates that managing California's often conflicting policy objectives is extremely challenging. In consideration of this, and because we want to offer constructive suggestions that move us toward a more widely supported final policy, we respectfully offer the following recommendations:

The compliance schedule is not sufficient to allow for the orderly replacement of AES-SL's fourteen units.

Repowering and/or unit replacement are the preferred compliance paths for the generating units in the AES-SL portfolio. We do not believe Track 1 is possible or practical at any of our three sites given their location, the age of the facilities and the higher closed cycle cooling capacity needed for conventional thermal plants compared to combined cycle or peaking facilities. It is AES-SL's goal to be a long term supplier of choice for California and we intend to modernize our entire fleet through the installation of more efficient, fast-ramping, environmentally friendly gas-fired peaking and combined cycle technologies that do not rely on OTC. The compliance schedule outlined in the proposed policy may be feasible if we intended to retrofit our existing units or otherwise comply with Track 1 or Track 2, however due to the complexities of repowering as compared to retrofitting, a longer compliance timeline is needed.

Given the size of the AES-SL portfolio and existing contractual commitments that run through 2018, we would not be able to modernize our entire fleet before the expected compliance deadline of 12/31/2020 and would be forced to shutdown multiple units in an important LCR region even though we would be diligently working to modernize the fleet.

The Policy and SED acknowledge that targeted RFO's for the replacement or repowering of facilities in the Los Angeles basin would stem from the 2013 Long Term Procurement Proceeding (LTPP). This proceeding would not result in approved PPA's until 2015, at the earliest. Given the additional time that may be needed to complete permitting, secure financing and construct the new units, AES-SL would need to be repowering our entire portfolio virtually simultaneously. This is not realistic or achievable.

Furthermore, the AES-SL units are exempt from ERC requirements, including those for PM-10, under SCAQMD Rule 1304(a)(2) for repowering units such as ours with new advanced gas turbine peaking and combined cycle technologies. However, in order to make use of this exemption, the development of the new generating unit must be contemporaneous with the retirement of the existing OTC unit. If the Policy resulted in the untimely retirement of an OTC unit such that AES-SL became ineligible to use the exemption for that unit, then ERCs would need to be procured from the market in order to eventually complete the replacement. Even if you assume it would be possible to procure ERCs from the market, which is not feasible today, such a requirement would unnecessarily add millions of dollars to the cost of developing the new unit and those costs would need to be passed on to ratepayers. Additionally, it would put additional pressure on the ERC market for all subsequent permit seekers resulting in higher costs that would also be ultimately borne by the ratepayers. Given the current difficulties in Southern California with respect to ERCs, it is important to all stakeholders that AES-SL, and other eligible OTC asset owners, maximize the use of the exemption provided by Rule 1304(a)(2).

Recommendation – Revise the compliance schedule for AES-SL so that it is realistically achievable by making the following changes:

1. Rather than specifying the same compliance date for each of the facilities in their entirety, consider adopting a phased compliance schedule for each facility that is likely more consistent with how a modernization project would proceed. To clarify, there are multiple units at each of our three facilities. It is not reasonable to expect that all units at a facility will be able to repower simultaneously or achieve compliance with Track 1 or Track 2 on the same timeline.

2. Extend the compliance date for the final phases at each facility to be more consistent with what is reasonably feasible. It is unreasonable to expect a 2,000 MW, six-unit facility like Alamitos, to repower its fleet in ten years. The timeline required to modernize or replace a fleet of this size is likely 15 to 20 years, not 10 years.

If it would be helpful to the SWRCB, AES-SL can outline a compliance schedule that it believes would be possible to achieve. We have begun formulating the long term plan for our portfolio and should be ready to communicate our goals in the next 3 to 4 months.

The requirement to mitigate or offset impacts for units that have not complied within five years forces many facilities to comply twice.

Forcing a facility to mitigate for its impacts on an interim basis before full compliance with the Policy is achieved results in double compliance – the first time by funding a mitigation project and the second time by shutting down or taking other action to achieve full compliance with Track 1 or Track 2. The habitat production forgone methodology specified in the SED estimates the amount of habitat (in acres) it would take to offset the estimated loss of habitat due to the ongoing operation of a plant's OTC system. The estimated lost habitat is typically compensated for by completing a wetland restoration project or constructing an artificial reef. The type of project implemented depends on the predominant species entrained by the power plant. Notably, the expected length of time the plant intends to operate generally does not factor into the calculation of the acreage of lost habitat. All previous applications of the habitat production foregone methodology would have resulted in the same restoration requirement whether the facility intended to operate for one year or forty years even though once the wetland was restored or the reef constructed, the benefits would be produced indefinitely.

As an example, assume the lost habitat resulting from the ongoing operation of a power plant is estimated to be 50 acres and the species that were predominantly impacted resided in near shore wetlands. Under the typical application of mitigation, the generator owner would then fund a 50 acre wetland restoration project. The bulk of the cost of this project would be associated with the initial restoration effort. Once the wetland is created or restored, the ongoing cost to maintain the wetland is minimal compared to the initial investment. To reinforce this point, the mitigation project that the AES Huntington Beach facility has already funded cost nearly $5 million for the initial wetland restoration, but then only $52,000 a year to maintain. The inequity of requiring interim mitigation results from the fact that as long as the restoration project is maintained it will produce benefits indefinitely, while the impacts of the OTC system will be eliminated as soon as full compliance with the Policy is achieved. The elimination of impacts could occur as early as one year after the interim restoration project is funded while the project itself could go on producing benefits for 40, 50 or 100 years.

Recommendation – Eliminate mitigation as a required interim measure, especially since many facilities do not have the ability to achieve full compliance within five years given the need to ensure a sufficient supply of electricity in critical local reliability areas. If the SWRCB is unwilling to eliminate the interim requirement, the Policy needs to provide more clarity to the Regional Boards about how to determine the interim mitigation requirement so that plants are not forced to comply twice. AES-SL has two suggestions for how an equitable and simple interim mitigation requirement could be structured. One, rather than requiring a generator to identify a specific restoration project to fund, the SWRCB should establish an annual $/acre mitigation fee that would be paid into an overall state-wide fund and managed by one agency. Two, the required annual mitigation fee should be based on actual annual OTC flow rather than on a conservative forward estimate of expected flow. In addition, the habitat production foregone calculation must be scaled based on a typical power plant life of 30 years so that the annual mitigation fee is 1/30 of the calculated total habitat impacted by ongoing plant operation.

To provide an incentive for early action and additional compliance flexibility, the Policy should be modified to allow for the "banking" of entrainment and impingement reductions that are achieved prior to the required compliance date.

AES-SL proposes to alleviate the concerns regarding (1) the impracticality of repowering a large portfolio under the compressed compliance schedule, (2) the requirement to effectively comply twice through the compliance schedule and the requirement to fund interim mitigation, and (3) the inability to actually achieve compliance with Track 2 by allowing the owner of a facility to earn early action credits by achieving reductions before the applicable compliance date that can then be used to extend the compliance date for other reductions required at the same facility.

As an example, assume AES-SL repowered a unit pair at a facility a full five years before its compliance date, and the portion that was repowered accounted for 50% of the facility's overall entrainment and impingement (E&I) impacts. We propose that the facility could earn early action credits for the reductions achieved that could be applied to the remaining 50% of reductions required at the facility (in terms of E&I impacts, not in terms of installed megawatts). In this example, the compliance date for the remaining 50% of the required E&I reductions would be extended by five years since the first 50% of the reductions were achieved five years before the compliance due date. In this manner, the facility would achieve compliance with the policy *on average*. This structure would also be more consistent with the typical phasing of a plant modernization initiative on a multi-unit station.

To illustrate the banking concept using a more complicated example, if the repower or retirement was in place six years before the compliance due date and the percentage of E&I reductions achieved were 25%, the compliance date for the remaining 75% of the E&I reductions would be extended two years beyond the original compliance due date (25% x 6 years ÷ 75%). Similarly, if operational or structural controls were implemented at the facility four years before the compliance due date and these modifications reduced E&I impacts by 20%, then the compliance due date for the remainder of the facility could be extended one year (20% x 4 ÷ 80%). In this example, the cumulative reduction over four years would be 80% which is equal to the impacts the facility causes by running for one year after the operational or structural scheme is implemented. As a benefit to the environment, these percentages could be calculated, as in the examples above, against the full percentage of E&I impacts and not the 93% required by Track 1 or the 90% of 93% required by Track 2.

If the portion of the facility that remains in operation using OTC happens to exceed the historical flow rates that were used to determine the E&I reduction percentages achieved, then the credit for early compliance could be reduced proportionally. For example, if

AES-SL repowered or retired a portion of a facility a full five years before the compliance due date, and the portion that was repowered or retired accounted for 50% of the facility's E&I impacts, then the compliance schedule for the other 50% of the required reductions would be extended five years beyond the original compliance due date. However, if after the repowering or retirement, the remainder of the facility that continued to use OTC increased its use by 12.5% per year over its historical usage, then the five year early action credit would be reduced proportionally.

Such an intra-facility, pre-compliance credit or banking system would encourage owners to make significant impact reductions as soon as possible in order to (1) decompress the compliance schedule which would allow the eventual repowering of most of the units on an schedule that is actually achievable, (2) reduce the perceived need for imposing an interim mitigation tax on top of the compliance obligation because an incentive for early action would already be in place, and (3) alleviate the stringency of the Track 2 requirements by allowing owners to not only bank large impact reductions made before the due date but also smaller impact reduction schemes associated with operational or structural modifications. Under the current policy, facility owners do not have such an incentive.

The Policy does not fully consider the potential reduced environmental impacts of co-located desalination and power generating facilities.

The SED outlines why the staff determined that it is more appropriate to establish compliance requirements for desalination facilities in a separate policy. AES-SL agrees with this approach. However, we are concerned that the Policy as proposed may not allow a power generating facility to use the flow from a legally permitted and constructed desalination facility even if the power generator's joint use of the flow required for the desalination plant resulted in no incremental impacts to the marine environment.

As an example, let's assume that a desalination plant capable of producing 20 million gallons per day (MGD) of potable water is permitted and constructed in full compliance with the forthcoming policy on desalination facilities. A plant of this size requires a minimum sea water inlet flow of 40 MGD. Since the desalination plant is expected to operate nearly 24 hours a day, 7 days a week, 40 MGD of OTC flow would be available to a co-located power plant without causing any incremental impacts. Therefore, provided a power plant did not require more than 40 MGD of OTC flow, it could be combined with the desalination plant and not a single additional organism would be entrained or impinged.

If the power plant was unable to use the flow required by a desalination plant, then overall environmental impacts would not be minimized. The desalination facility would be operating as it was permitted and a wet or dry cooled power plant may be constructed next to it. Not only would this result in the environmental impacts of the desalination plant, but there would also be the unnecessary added environmental impacts of the closed cycle cooling system such as, reduced efficiency, more greenhouse gas emissions and criteria pollutants and the visual impact of the wet or dry cooling system. It is also not clear that this scenario would be able to pass an alternatives analysis under CEQA.

Recommendation – Modify Track 1 to make it clear that if a power plant is a secondary user of a volume of OTC flow that is at or below the volume required by a legally permitted and constructed primary user, provided the primary user is not also a power plant, then the power plant is in full compliance with the Policy.

The economic analysis summarized in the SED is inadequate and it fails to evaluate the cost of the most probable outcome of the Policy.

The staff appears to agree that unit repowering and replacement are the likely compliance alternatives for nearly all existing facilities, yet the cursory economic analysis in the SED makes no attempt to evaluate the cost of this compliance path. The analysis focuses almost entirely on the cost of retrofitting the existing facilities with wet-cycle cooling. Not only is retrofitting not feasible at many of the existing sites, it is not consistent with the preferred and expected compliance plan for all but the two nuclear plants and the few existing combined cycle units.

With the significant capital cost of new capacity, the state-wide impact of a policy that accelerates the retirement of the relatively inexpensive existing units should be carefully evaluated. Without a more thorough economic analysis, the SED is inadequate and the Board will not be able to make a fully informed decision that considers the true cost of the Policy.

Recommendation – Revise the economic analysis to include the cost of repowering or replacing the existing fleet. The staff acknowledges its intent to further support California's energy policy objectives by encouraging, or in this case, forcing the replacement of the existing coastal fleet. To be consistent and to allow the Board to make an informed decision, the SED must assess the economic impact of the most probable outcome, not the scenario that is the easiest to evaluate.

AES-SL believes that California is at a critical juncture in determining the long term future of its energy infrastructure. We urge the Board to be cautious about moving forward too quickly without regard to the significant reliability, environmental, societal, and economic impacts that will occur if the policy is not well thought out and feasible to implement. We have made several thoughtful and constructive recommendations that will improve the overall cost and implementation feasibility of the Policy yet still achieve the desired environmental benefits and support California's objective to modernize its existing fleet of conventional gas-fired units. We urge the SWRCB to carefully consider our suggestions. AES-SL has been and will remain a collaborative partner working hard to progress California's energy and environmental objectives, but the path forward must be supported by a thorough CEQA analysis and have a reasonable chance of success.

Please do not hesitate to contact me at (562) 493-7855 or Julie Gill at (916) 509-0598 with any questions.

Kindest regards,

Eric Pendergraft
President
AES Southland

cc: Members of the State Water Resources Control Board
Linda Adams, Secretary for CA Environmental Protection Agency
Cindy Tuck, Undersecretary, CA Environmental Protection Agency
Dan Pellissier, Assistant Secretary for Energy Policy Coordination for CA Environmental Protection Agency
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