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DOCKET
09-IEP-1O
DATE SEP 06 2009
RECD. SEP 07 2009

October 6, 2009

California Energy Commission
Dockets Office, MS-4
Docket No. 09-IEP-1O
1516 Ninth Street
Sacramento, CA 95814-5512

RE: *2009 IEPR Committee Workshop on the Potential Need for Emission Reduction Credits in the South Coast Air Quality Management District*

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 Energy Commission's IEPR Committee Workshop on the Potential Need for Emission Reduction Credits in the South Coast Air Quality Management District.

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 Energy Commission's decision to convene an IEPR Committee Workshop on the Potential Need for Emission Reduction Credits in the South Coast Air Quality Management District (SCAQMD). AES-SL recognizes the enormous challenges associated with the limitations on emission reduction credits in the south coast air basin particularly when also considering the State Water Resources Control Board's (SWRCB) development of a final policy on OTC that protects our marine environment and also attempts to take into account electric reliability, climate change, criteria pollutants, electricity rates, water supply and implementation feasibility.

AES-SL also appreciates that managing these often conflicting objectives is extremely challenging. In consideration of this, and because we want to offer constructive suggestions, we respectfully offer the following observations and recommendations:

Preserve and maximize the use of the ERC exemption for Electric Utility Steam Boiler Replacement as allowed under SCAQMD Rule 1304(a)(2), adopted October 5, 1979 and last amended June 14, 1996.

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 combined cycle and advanced gas turbine peaking technologies. There are several advantages to preserving and maximizing the use of the exemption in order to repower existing units that make use of OTC with new, efficient generation that does not use OTC.

Both SCE and LADWP described in detail at the September 24, 2009 workshop the significant difficulties of mitigating local reliability needs with transmission upgrades should a local reliability deficiency develop in the LA Basin as a result of OTC unit retirements. There is very little opportunity to upgrade existing transmission infrastructure, and there are acute difficulties in permitting, siting, and building new transmission lines in densely populated areas. Repowering the OTC units where they exist today eliminates the need for significant transmission upgrades.

The LA Basin area has limited import capabilities. This import limitation applies to renewable and conventional generation located outside of the LA Basin local reliability area. Both SCE and LADWP described in detail the importance of inertia located within the LA Basin area, especially in the western portion of the LA Basin due to structural limits on east-to-west flows. Additionally, inertia plays a critical role in grid stability. Siting new peakers in the eastern portion of the LA Basin area does very little to sustain the import capability of the area as the peaking generation has little to no inertia and is on the wrong side of the LA Basin area east-west divide. Repowering a portion of the existing OTC units with combined cycle units maintains the area's import capabilities and grid stabilizing effects through the inertia provided by the steam turbine(s). Repowering other portions of the OTC units with fast regulating peaking resources would allow the integration of intermittent renewable generation. Repowering the OTC units at their existing sites with a combination of new combined cycle and peaking units would allow both the import and integration of more renewable and conventional energy into the LA Basin, in addition to providing grid stability.

The environmental organizations that oppose the use of the Priority Reserve offsets for new power generation developments do not similarly oppose the use of Rule 1304(a)(2) for repowering qualifying OTC units. Certain of these organizations have publically supported the use of 1304(a)(2) for repowering existing OTC units. They are nearly unanimous in one opinion, that being that the siting of any new generation result in the direct, one-for-one, shutdown of an existing OTC unit. The siting of a new generation facility outside of the LA Basin area will not have such an effect. For the reasons detailed above, at most, the

OTC unit will have a diminished role in the wholesale electricity market but a resulting retirement is unlikely unless the new facility and the OTC unit retiring are under common ownership. Repowering the OTC units at their existing sites results in the direct retirement of an OTC unit, thus furthering the aims of the draft OTC policy and the CEC's stated objective to replace the aging fossil-fired plants.

Some competitors of AES-SL like to suggest that the 1304(a)(2) results in insufficient competition and thereby ratepayers will not pay the lowest cost of service. This argument is a thinly veiled attempt to make the higher costs of greenfield development more competitive with brownfield development. AES-SL will gladly compete with greenfield and brownfield developers in an open, competitive, fairly-structured RFO for new generation. The projects that are awarded contracts in a competitive RFO will inherently burden the ratepayers the least. AES-SL is confident that in any open, competitive, fairly-structured RFO for new generation we would be successful and benefit the ratepayers regardless of ERC costs because of the many cost advantages of brownfield versus greenfield development.

Furthermore, AES-SL believes the current manner and method of new generation solicitations is biased against OTC repowers and favors greenfield developments to the detriment of the ratepayers. This is because the greenfield developer can more readily size its development to the stated need in the RFO, and any award to a greenfield developer directly satisfies a portion of the defined need of the RFO. The brownfield developer that is repowering an OTC unit or unit pair has less flexibility on sizing because, for several reasons, the new unit needs to be approximately the same size as the unit being replaced. Additionally, the repower does not incrementally satisfy a portion of the stated need of the RFO due to the retirement of the unit being replaced. Therefore, it is possible that the repower could be discriminated against in favor of a more expensive greenfield development.

Recommendation - The current procurement process should include a mechanism to accommodate projects that are neither new incremental resources nor existing resources. Generator owners should be able to bid projects into RFOs that include both the shut down of an existing resource and the commercial operation of a new replacement resource. To accommodate this approach, the RFO process should be "adaptive" in that the amount of capacity an IOU is allowed to procure should adjust based on whether the resources they are procuring are truly new greenfield projects or simply replacement capacity that is being bundled with a unit retirement. This is especially true of OTC plants that are providing local reliability services in transmission constrained zones. These valuable additional attributes are difficult to value appropriately using typical methodologies that are applied to RFO bids, especially since the procurement group at the IOU's are prohibited from interfacing with the transmission personnel. For this reason, competitively priced brownfield projects that are relatively equal on a cost-benefit basis with greenfield projects should be given preference in any RFO. This position is supported by multiple California agencies, including the CEC, that have stated a preference for brownfield development. The legislature has also demonstrated its

preference for repowering by adopting AB 1576 which highlights the efficiency gains, increased reliability, displacement of older plants, utilization of existing infrastructure and the environmental improvements that can be achieved through the repowering of units needed for local reliability. AB 1576, signed into law in September of 2005, allows load serving entities (LSEs) to recover all costs associated with entering into a cost-of-service power purchase agreement for developments replacing OTC units. There is no shortage of readily available data that details the costs associated with developing, building and operating electrical generating facilities. AES-SL is willing to enter into such discussions with SCE and other LSEs for the replacement of its OTC fleet.

AES–SL will voluntarily submit to CEC jurisdiction in the repowering of its OTC units

At the September 24 workshop, Dr. Jaske expressed a concern that repowers could avoid CEC jurisdiction if the capacity of the new unit did not exceed the unit being replaced by 50 megawatts or more. AES-SL wants to clarify that it would choose to opt into the CEC permitting process for its repower developments even if not required to do so in order to attain the most robust, vetted, and defensible permit possible.

Any IEPR recommendations must address the link between the need for Emission Reduction Credits in the South Coast and the SWRCB draft OTC policy

AES-SL submitted comments to the SWRCB on September 30, 2009 regarding its *Proposed Water Quality Control Policy of the Use of Coastal and Estuarine Waters for Power plant Cooling and the Associated Supplemental Environmental Document.* Many of the OTC plants subject to the SWRCB proposed policy are located in the South Coast air basin and therefore we are reiterating specific points of our recommendations to the SWRCB in this letter.

The compliance schedule outlined in the SWRCB draft policy on OTC is not sufficient to allow for the orderly replacement of a majority 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, constraints on land availability, 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. Due to the complexities of repowering as compared to retrofitting, a longer compliance timeline is needed.

Given the size of our portfolio and existing contractual commitments that run through 2018, we would not be able to modernize the majority of our 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 draft policy and the SWRCB's Supplemental Environmental Document (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, as previously stated, 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 final OTC policy resulted in the untimely retirement of an OTC unit before a repower could be completed such that AES-SL became ineligible for the exemption for that unit, then ERCs would need to be procured from the market in order to eventually replace that unit. Even if you assume it was 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 that would need to be passed on to the 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, the SWRCB should adopt a phased compliance schedule for each facility that is likely more consistent with how a plant 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, such as Alamitos, to repower its fleet in ten years. The

timeline required to modernize a fleet of this size is likely 15 to 20 years, not 10 years.

If it would be helpful to the Committee that is advising the SWRCB on its OTC policy, 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 preferred timeline in the next 3 to 4 months.

To provide an incentive for early action and additional compliance flexibility, the OTC 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 this compressed compliance schedule, and (2) 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.

For 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 the facility reductions (in terms of 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 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% * 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% * 4 ÷ 80%). In this example, the cumulative reduction over four years would be 80% which is equal to the impacts of the facility 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 exceeds 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 was to repower or retire 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-company, 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.

AES-SL believes that California is at a critical juncture in determining the long term future of its energy infrastructure. We respectfully request that the IEPR, which informs many state agencies as they proceed in rulemakings, recommend a solution in the south coast air basin that helps to achieve the objectives of the many state agencies. Through collaboration and feasible compliance schedules, the CEC's vision for the retirement of aging plants and those using OTC can be accomplished in the least cost manner, achieving meaningful emission reductions while preserving the reliability of the region. AES-SL has been and will remain a collaborative partner working hard to progress California's energy and environmental objectives. 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

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