

DOCKETED

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March 2, 2016

Mr. Matthew Lyons
Long Beach Water Department
1800 E. Wardlow Rd
Long Beach, CA 90807

Re: Alamitos Energy Center Water Supply Assessment dated January 21, 2016

Dear Mr. Lyons:

Thank you for preparing the Water Supply Assessment, dated January 21, 2016 (WSA) for the AES Alamitos Energy Center (AEC), as requested by the California Energy Commission (CEC) Staff. While we believe that a statutory WSA is not required for a project like AEC, we nevertheless appreciate your response to the CEC's request.

In reviewing the WSA, we note the need for a correction to the water demand identified for the AEC. The correction will provide for consistency with the maximum annual use identified in AES' Supplemental Application for Certification (Supplemental AFC) submitted to the CEC on October 23, 2015.¹ As explained below, AES expects to use a maximum of 130 acre-feet per year (afy) for the AEC, as shown in Table 2.1-1 on page 2-13 of the Supplemental AFC.

The maximum annual water use for AEC of 130 afy is less than the maximum water of 225 afy demand initially calculated in the requested WSA. The 225 afy calculated appears to have been derived from the assumption of peak water use rate of 195 gpm for the 4,600 hours per year of combined-cycle operation and peak water use rate of 161.6 gpm for the 2,000 hours per year of simple-cycle operation -- with all hours of operations assumed to be at peak ambient temperature conditions. However, peak water use rates only occur under a limited number of daytime hours annually when peak ambient temperature are reached, not during all hours of operations. As described in the Supplemental AFC:

The annual water requirements for operation of the AEC at maximum permit loads will be substantially less than the actual historical water consumption of the existing AGS as demonstrated from a comparison of actual water use at the AGS for 2013 and 2014. Figures 2.1-5a and 2.1-5b provide the water balances for the AEC, representing two operating conditions. Figure 2.1-5a represents AEC operations under average ambient temperature conditions with the turbines operating at 100 percent load with the inlet air evaporative cooling operating. For these conditions, AEC water use will be approximately 55 gallons per minute for the CCGT power block and 13 gallons per minute for the SCGT power block (see Table 5.15-4). *Figure 2.1-*

¹ The Supplemental AFC is available at: http://docketpublic.energy.ca.gov/PublicDocuments/13-AFC-01/TN206428-1_20151026T143702_Alamitos_Energy_Center_Supplemental_AFC.pdf

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5b shows AEC operations at peak temperature conditions with the turbines operating at 100 percent load with the inlet evaporative cooling operating. Under these conditions water use will be approximately 195 gallons per minute for the AEC CCGT and 162 gallons per minute for the AEC SCGT. The maximum annual water use is expected to be 130 acre-feet per year. Based on water volumes from 2012 through 2014, the AGS has historically used an average of approximately 441 acre-feet per year. (Supplemental AFC, p. 5.15-6; emphasis added.)

Because peak water use rates only occur during a few peak ambient temperature hours, these peak rates would not be sustained over the estimated annual operations of the combined-cycle and simple-cycle systems. As such, the maximum annual water use would be less than the water use would be if peak temperatures were assumed to be sustained year-round. Similarly, adding the peak flow rates of 195 gpm and 162 gpm and applying them uniformly over the entire year of operation (24 hours per day for 365 days per year) resulting in an calculated 575 afy is not an accurate projection, given, among other things, that actual ambient temperatures vary daily and seasonally, that planned outages result in operating hours well below 8,760 and that other Conditions similarly limit operations to less than 8,760 hours. The maximum annual water use of 130 afy, as described in the Supplemental AFC, is a realistic estimate of the maximum water use.

We recognize that these revised assumptions reflecting the information in the Supplemental AFC do not affect the WSA's ultimate conclusion that the City has sufficient supplies to serve the AEC. (WSA, p. 14.) Nevertheless, we would appreciate revisions to the WSA consistent with these comments and the Supplemental AFC.

Thank you for your work in confirming the water supply available to AEC. Please contact me with any questions or concerns you might have at 562-493-7891.

Sincerely,

A handwritten signature in blue ink, appearing to read "S. O'Kane".

Stephen O'Kane
Vice-President
AES Southland Development, LLC
Manager
AES Huntington Beach Energy, LLC

cc: Jennifer Didlo/AES
Jeff Harris/ESH
Jerry Salamy/CH2M HILL