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November 18, 2016

Karen L. Larsen  
Deputy Director  
State Water Resources Control Board  
1001 I Street  
Sacramento, CA 95814

**RE: Once-Through Cooling Interim Mitigation Requirements for the Alamitos Generating Station**

Dear Ms. Larsen,

This letter is in response to your September 26, 2016 correspondence requesting information for determining interim mitigation fees for Once-Through Cooling (OTC) impingement and entrainment impacts at the AES Huntington Beach Generating Station (AES-AL). As stated in your letter, you requested the following information:

1. Valid entrainment data, if available;
2. Monthly and total intake volume for October 1, 2015 through September 30, 2016;
3. If considering installing an intake flow measuring device for measuring future intakes, feasibility and timeframe needed for completion; and
4. Actual annual impingement data in total pounds of fishes impinged from October 1, 2015 through September 30, 2016, or the annual total fishes impinged on previous years.

Our responses to your data request are detailed below:

**1. Valid entrainment data, if available**

There are no valid site-specific entrainment data available for AES-AL

**2. Monthly and total intake volume for October 1, 2015 through September 30, 2016**

Intake volumes for AES-AL are listed in the table below:

Month	Intake Volume <sup>1</sup> Units 1 & 2 (millions of gallons)	Intake Volume <sup>2</sup> Units 3 & 4 (millions of gallons)	Intake Volume <sup>3</sup> Units 5 & 6 (millions of gallons)	Intake Volume Total AES-AL (millions of gallons)
October 2015	2,430.11	7,682.27	8,773.43	18,885.81
November 2015	2,288.41	4,892.86	2,564.41	9,745.68
December 2015	1,416.34	2,067.17	83.66	3,567.17
January 2016	230.47	4,332.18	0.00	4,562.66
February 2016	1,394.39	5,324.24	1,174.36	7,892.99
March 2016	1,076.00	4,486.33	1,445.24	7,007.58
April 2016	1,051.00	4,876.95	610.95	6,538.90
May 2016	164.00	5,694.90	1,298.11	7,157.01
June 2016	1,656.56	5,888.95	3,146.82	10,692.33
July 2016	2,782.35	5,767.24	6,053.11	14,602.71
August 2016	2,751.41	7,145.30	6,902.23	16,798.94
September 2016	2,081.70	7,122.70	6,431.74	15,636.14
<b>Total</b>	<b>19,322.74</b>	<b>65,281.10</b>	<b>38,484.07</b>	<b>123,087.91</b>

There were no days during the period October 2015 through September 2016 when intake volume data was not available. Intake pumps were operational during the entire period and there were no days when intake flow was zero at AES-AL. At least one circulating OTC pump was required for either power generation or critical system maintenance at all times at AES-AL.

**3. If considering installing an intake flow measuring device for measuring future intakes, feasibility and timeframe needed for completion**

AES-AL is not considering installing any new equipment for measuring future intakes. It should be noted that flow measurement of OTC intake or discharge is accomplished in the same manner. Both flow intake and discharge is calculated by multiplying the OTC circulation pump operating hours by the pump flow rate. All AES Southland OTC circulation pumps are fitted with an integrator to electronically record operating run time. The run time is multiplied by the pump flow rate which provides both the intake and discharge volume.

**4. Actual annual impingement data in total pounds of fishes impinged**

Between October 2012 and September 2015, fish impingement was monitored quarterly at AES-AL. In 2016, biannual impingement monitoring was required per the new National Pollutant Discharge Elimination System (NPDES) permit No. CA0001139 and Order No. R4-2015-0173 from the Los Angeles Regional Water Quality Control Board which became effective January 1, 2016. Therefore, the 2012–2015 impingement data, which was sampled at a higher frequency, were used to derive the estimated quarterly impingement rate, or pounds of fish impinged per volume of water. The actual water volume circulated during the 24-hour impingement survey was used to derive the survey-specific impingement rate. The average rate per quarter (Jan-Mar, Apr-Jun, Jul-Sep, and Oct-Dec) was derived from these four

<sup>1</sup> Discharges to EFF-001

<sup>2</sup> Discharges to EFF-002

<sup>3</sup> Discharges to EFF-003

years of data. The actual cooling water flow data for the period from 1 October 2015 to 30 September 2016 for each of the three discharges was provided by AES Alamitos. These cooling water volumes were summed into quarters corresponding to the impingement rate estimates. The quarterly flows were multiplied by the quarterly impingement rates to derive the estimated quarterly impingement biomass in pounds for each intake. The quarterly biomass estimates for each intake were then summed to derive the total annual impingement for AES-AL.

Using the method described above, the resulting fish impingement biomass from October 2015-September 2016 are:

Units 1 & 2 Intake (to discharge EFF-001) = 50.1 lbs  
Units 3 & 4 Intake (to discharge EFF-002) = 289.0 lbs  
Units 5 & 6 Intake (to discharge EFF-003) = 168.3 lbs  
AES-RB Station Total Estimate = 507.4 lbs

If you have questions regarding this submittal, please contact Stephen O’Kane, AES-Southland, LLC at (562) 493-7840 or [Stephen.Okane@aes.com](mailto:Stephen.Okane@aes.com).

Sincerely



Jennifer Didlo  
President  
AES-Southland