DRAFT DETERMINATION TO APPROVE MITIGATION MEASURES FOR THE WATER QUALITY CONTROL POLICY ON THE USE OF COASTAL AND ESTUARINE WATERS FOR POWER PLANT COOLING (ONCE-THROUGH COOLING POLICY):

ORMOND BEACH GENERATING STATION

Interim Mitigation Requirements of the Once-Through Cooling Policy

The Once-Through Cooling (OTC) Policy requires owners or operators of existing power plants to implement measures to mitigate interim impingement and entrainment impacts resulting from their cooling water intake structures. The interim mitigation period commenced on October 1, 2015, and continues up to and until owners or operators achieve final compliance with the OTC Policy. Section 2.C(3) of the Policy provides the following information for demonstrating compliance with interim mitigation:

(a) Demonstrate to the satisfaction of the State Water Resources Control Board (State Water Board) that the owner or operator is compensating for the interim impingement and entrainment impacts through existing mitigation efforts, including any projects that are required by state or federal permits as of October 1, 2010; or

(b) Demonstrate to the State Water Board's satisfaction that the interim impacts are compensated for by the owner or operator by providing funding to the California Coastal Conservancy which will work with the California Ocean Protection Council to fund an appropriate mitigation project; or

(c) Develop and implement a mitigation project for the facility, approved by the State Water Board, which will compensate for the interim impingement and entrainment impacts.

(d) Use the habitat production foregone (HPF) method, or comparable alternate method approved by the State Water Board in order to determine the habitat and area, based on replacement of the annual entrainment, for funding a mitigation project.

(e) The State Water Board preference is that funding be provided to the California Coastal Conservancy, working with the California Ocean Protection Council, for mitigation projects directed toward increases in marine life associated with the State's Marine Protected Areas (MPA) in the geographic region of the facility.

Consistent with the settlement agreement of October 9, 2014, with the State Water Board, NRG Energy, Inc. (NRG) proposed to comply with interim mitigation for its Ormond Beach Generating Station (Ormond Beach Station) by providing funding for mitigation projects directed towards increasing marine life in marine protected areas in the geographic region of the facility.

On August 18, 2015, the State Water Board adopted Resolution 2015-0057 (2015 Resolution), delegating to its Executive Director the authority to approve proposed measures for power plant owners or operators to comply with interim mitigation on a case-by-case basis. The 2015 Resolution also includes procedures for calculating a mitigation payment for the power plants that have selected the interim mitigation option of providing funding to the Coastal Conservancy for appropriate mitigation projects. As described in the 2015 Resolution and consistent with the recommendations of the Expert Review Panel on minimizing and mitigating intake impacts from power plants and desalination facilities, the State Water Board calculated interim mitigation payments to equal the sum of three components: an entrainment payment, an impingement payment, and a management and monitoring payment.

Estimate of Interim Mitigation Payment for NRG's Ormond Beach Station

Entrainment Payment Calculation

To calculate the interim mitigation payment to offset entrainment impacts, staff used the default average cost of entrainment of $4.60 per million gallons (MG) updated to 2016 dollars with a projection of one year for funding to be used in 2017. NRG proposed the use of the average cost rate and did not request a facility-specific rate. The updated average entrainment cost calculates to be $4.73/MG as shown in Table 1.

NRG submitted a January 2006 through January 2007 impingement mortality and entrainment study along with entrainment estimates dated December 29, 2010. Entrainment sampling and source water sampling were limited and did not include paired source water sampling. Therefore, the data were not sufficient to calculate a facility-specific entrainment cost.

To determine the intake flow volume, staff relied on data provided in NRG's letter dated November 29, 2016[1]. NRG stated that the maximum intake volume at Ormond Beach Station for the interim mitigation period of October 1, 2015, to September 30, 2016, was 26,821.36 MG. Verification of these volume data with the data submitted in the NPDES permit monitoring reports for Ormond Beach Generating Station showed that this volume data was accurate.

To estimate the entrainment payment, staff multiplied the intake volume by the calculated average cost of entrainment.

26,821.36 MG X $4.73/MG = $126,865.03

[1] Letter from George L. Piantka, NRG Energy, to Division of Water Quality Deputy Director Karen Larsen, State Water Board (Nov. 29, 2016) at < https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/powerplants/ormond_beach/docs/ormond_imf16.pdf>

Impingement Payment Calculation

In the November 29, 2016 letter, NRG provided estimated impingement fish count results and flow data from 2013 through 2016. Staff used these data to establish an average impingement rate. Staff then used this impingement rate and the actual flow for the 2015-2016 interim mitigation period to calculate an annual estimate impingement amount of 149 pounds. Staff calculated the impingement payment using the calculated annual estimate value, and the average indirect economic value of the fisheries as determined in the Expert Review Panel's final report of $0.80 per pound.

Therefore, the impingement calculation is as follows:

$0.80/pound X 149 pounds = $119.20

Management and Monitoring Payment Calculation

Staff calculated the management and monitoring fee by taking twenty percent of the sum of the entrainment and impingement payments.

0.20 X ($126,865.03 + $119.20) = $25,396.85

<u>State Water Board's Draft Determination for Ormond Beach Station</u>
The sum of the amounts for entrainment, impingement, and management and monitoring equals approximately $153 thousand dollars for the interim mitigation payment for NRG Ormond Beach Station. NRG shall be required to pay the amount of $152,381.08 to fulfill the interim mitigation obligation for its Ormond Beach Station for the operating period of October 1, 2015, to September 30, 2016.

$126,865.03 + $119.20 + $25,396.85 = $152,381.08

Table 1 Calculation of projected default entrainment cost for the 2015-2016 interim mitigation payment period.

Facility	Intake Volume (MGD)	APF (Acres)	Mitigation Type	Cost Estimate	Cost per Annual Intake (MG)	Notes	Years Between Assessment and 2016	Cost Escalator	Total Escalator	2016 Cost per MG	Estimated Half Life of the Project (Years)	Prorated 2016 Cost per MG	Estimated Cost at Time of Projection per MG	Estimated Annual Cost at Time of Projection per MG
Moss Landing Power Plant	360	840	Wetland	$15,100,000	$115	Based on max larval duration, dollars in year 2000	16	3.00%	$1.60	$184.41	30	$184.41	$189.94	$6.33
Morro Bay Power Plant	371	760	Wetland	$13,661,905	$101	Based on max larval duration, dollars in year 2001	15	3.00%	$1.56	$157.18	30	$157.18	$161.90	$5.40
Poseidon	304	37	Wetland	$11,100,000	$100	Based on max larval duration, dollars in year 2009 and cost per acre =300K (SONGS cost)	7	3.00%	$1.23	$123.03	30	$123.03	$126.72	$4.22
Huntington Beach Generating Station	126.5	66	Wetland	$4,927,560	$107	Based on max larval duration, dollars in year 2009 and cost per acre =74.66K (from Davis et al report and final permit (acres))	7	3.00%	$1.23	$131.25	30	$131.25	$135.19	$4.51
Diablo Canyon Nuclear Power Plant	2670	543	Rocky Reef	$67,875,000	$70	Based on125K per acre (SONGS) in 2006	10	3.00%	$1.344	$93.60	30	$93.60	$96.41	$3.21
							Average	3.00%				$137.89	$142.03	$4.73

Table 1 is based on the table in Appendix 1 of Resolution No. 2015-0057, modified for the 2015-2016 interim mitigation payment period, including a cost escalation of 3.00% to account for inflation. For the calculation, the following parameters are set: the estimated life of a project is 30 years, the estimated period of continued operation is 30 years, the projection is one year, and the assessment percentage is 10.00%.