

State Water Resources Control Board

FEB 09 2018

Mr. George Piantka
Director of Regulatory Environmental Services
NRG Energy, West Region
5790 Fleet Street, Suite 200
Carlsbad, CA 92008-4703

Dear Mr. Piantka:

RE: INTERIM MITIGATION MEASURES PAYMENT FOR ENCINA POWER STATION UNDER
THE ONCE-THROUGH COOLING POLICY

This letter serves as an invoice for interim mitigation payments for Encina Power Station for October 2015 through September 2016, provides the final determination for interim mitigation, and requests information to calculate payments for October 2016 through September 2017.

Background

The State Water Resources Control Board (State Water Board) Statewide Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (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 Once-Through Cooling (OTC) Policy. Section 2.C(3) of the Policy provides options for demonstrating compliance with the interim mitigation requirements.

On September 26, 2016, the State Water Board sent a letter requesting information to determine an interim mitigation payment pursuant to section 2.C(3)(b) for OTC impingement and entrainment impacts at the Encina Power Station. Under section 2.C(3)(b) NRG may demonstrate compliance with interim mitigation by providing funding to the Ocean Protection Council or California Coastal Conservancy to fund an appropriate mitigation project. Per Section 2.C(3)(e) of the Policy, it is the State Water Board's preference that this funding be for mitigation projects directed toward increasing marine life in marine protected areas in the geographic region of the facility. The State Water Board received your letter¹, dated November 29, 2016, with the requested information and a reduced intake flow volume that accounted for the volume of water flow required solely for operations of the Carlsbad Desalination Project.²

¹ Letter from George Piantka, NRG, to Thomas Howard, State Water Board. November 29, 2016.

<https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/powerplants/encina/docs/encina_imf16.pdf>

² Final Determination to Approve Mitigation Measures for the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling: Encina Power Station. State Water Board. February 16, 2017. <

https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/docs/eps_final_determination.pdf>

On December 12, 2017, the State Water Board posted for public comment the Draft Determination to Approve Mitigation Measures for the Encina Power Plant. No comments were received. Based on additional review of the draft, State Water Board staff corrected the impingement mass error in the conversion of kilograms to pounds.

Final Determination and Invoice

The State Water Board approves the use of funding as interim mitigation required by section 2.C(3)(b) of the Policy. 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. To calculate the interim mitigation payments, State Water Board staff used a facility-specific fee prepared by Dr. Peter Raimondi³ and the corrected impingement mass. The resulting total interim mitigation payment for Encina Power Station for the operating period from October 1, 2015, to September 30, 2016, is \$456,613.02.

Encina Power Station has sixty days from the receipt of this letter to make this payment to the Natural Resources Agency's Ocean Protection Council. Please make the check payable to the Natural Resources Agency and send to:

California Natural Resources Agency
Attn: Jenn Eckerle
1416 9th Street, Suite 1311
Sacramento, CA 95814

Request for Information

As described in Resolution No. 2015-0057, the State Water Board will continue to calculate the interim mitigation payments for each annual period until the Encina Power Station comes into compliance with the OTC Policy. In order to calculate the interim mitigation determination for the period of October 1, 2016, through September 30, 2017, please submit the following information applicable to your facility to the State Water Board within sixty days of receipt of this letter:

1. Monthly and total intake volume for October 1, 2016, through September 30, 2017;
2. Actual annual impingement data in total pounds from October 1, 2016, through September 30, 2017, or newly available impingement data since October 1, 2016.

³ Technical Memorandum from Dr. Peter Raimondi, University of California at Santa Cruz, to Rebecca Fitzgerald, State Water Resources Control Board. October 29, 2017. <
https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/powerplants/encina/docs/encina_technical_memo.pdf>

Contact Information

If you have questions regarding this invoice letter, please contact Katherine Faick at (916) 445-2317 (Katherine.Faick@waterboards.ca.gov) or Mariela Paz Carpio-Obeso at (916) 341-5858 (MarielaPaz.Carpio-Obeso@waterboards.ca.gov).

Sincerely,



Eileen Sobeck
Executive Director

Enclosure:
Attachment A - Final Determination for Encina Power Station

cc: Ms. Deborah Halberstadt
Executive Director
Ocean Protection Council
1416 9th Street, Suite 1311
Sacramento, CA 95814

Ms. Jenn Eckerle
Deputy Director
Ocean Protection Council
1416 9th Street, Suite 1311
Sacramento, CA 95814

cc: (via email):

Mr. Jonathan Bishop, Johnathan.Bishop@waterboards.ca.gov
Ms. Karen Larsen, Karen.Larsen@waterboards.ca.gov
Mr. Michael Lauffer, Michael.Lauffer@waterboards.ca.gov
Ms. Marleigh Wood, Marleigh.Wood@waterboards.ca.gov
Mr. Paul Hann, Paul.Hann@waterboards.ca.gov
Ms. Rebecca Fitzgerald, Rebecca.Fitzgerald@waterboards.ca.gov
Mr. John M. Robertson, John.Robertson@waterboards.ca.gov

FINAL 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):

ENCINA POWER 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.

In its April 1, 2011 Implementation Plan for compliance with the OTC Policy, NRG Energy, Inc. (NRG) proposed to comply with interim mitigation for its Encina Power 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 No. 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 Encina Power Station

Site-Specific Entrainment Cost

To calculate the interim mitigation payment to offset entrainment impacts, staff used a facility-specific payment. The State Water Board contracted Dr. Peter Raimondi to evaluate the information provided in NRG's information response letter¹ dated November 29, 2016, and to ensure current information was used to develop a site-specific entrainment cost for Encina Power Station. On October 29, 2017, Dr. Peter Raimondi submitted a Technical Memorandum² to the State Water Board, which included current costs for mitigation.

Dr. Raimondi calculated the facility-specific entrainment cost using two different site-specific entrainment cost estimates for Encina Power Station. One estimate was based on the restoration by Southern California Edison at San Dieguito Lagoon within the past ten years, and included an annual escalator of 3 percent per year, resulting in \$3.32 per million gallons (MG). The other entrainment cost estimate was based on a current estimate for simple wetland restoration, resulting in \$5.98 per MG. In the Technical Memorandum, Dr. Raimondi clarified that the differences between the two entrainment cost estimates likely reflect that the cost of restoration is increasing more rapidly than 3 percent per year and the restoration project at San Dieguito Lagoon was a relatively simple project in scope and effort. Since the two cost estimates bracket the likely cost of wetland restoration, it is appropriate to average the two entrainment cost estimates.

Entrainment Payment Calculation

The site-specific entrainment cost is calculated to be \$4.65 per MG as the average of two entrainment cost estimates, as shown below:

$$(\$3.32/\text{MG} + \$5.98/\text{MG}) \div 2 = \$4.65/\text{MG}$$

¹ Letter from George L. Piantka, NRG Energy, to Executive Director Tomas Howard, State Water Board. November 29, 2016.

<https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/powerplants/encina/docs/encina_imf16.pdf>

² Technical Memorandum from Dr. Raimondi, University of California at Santa Cruz, October 29, 2017

<https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/powerplants/encina/docs/encina_technical_memo.pdf>

To determine the intake volume, staff used the actual intake volume required for power generation and critical system maintenance at Encina Power Station minus the volume used solely for the Carlsbad Desalination Project for the period of October 1, 2015, to September 30, 2016. In their November 29, 2016 letter, NRG identified this volume as 80,125 MG. The State Water Board verified the intake volume through consultation with NRG.

$$80,125 \text{ MG} \times \$4.65/\text{MG} = \$372,581.25$$

Impingement Payment Calculation

In the November 29, 2016 letter, NRG provided two estimates for fish impingement, one impingement value based on the maximum design flow and one based on the actual intake flows from the period of the study. The latter estimate is representative of the annual total fishes impinged and is used for the impingement calculation. The impingement mass was incorrectly converted from kilograms to pounds in the November 29, 2016 letter. The correct impingement mass estimate is 9,912 pounds³. Staff calculated the impingement payment using the estimated total pounds of fish impinged during the impingement and entrainment study 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:

$$\$0.80/\text{pound} \times 9,912 \text{ pounds} = \$7,929.60$$

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.

$$0.20 \times (\$372,581.25 + \$7,929.60) = \$76,102.17$$

State Water Board's Final Determination for Encina Power Station

Based on the sum of the entrainment, impingement, and management and monitoring payment calculations, the total payment is \$456,613.02 to fulfill the interim mitigation obligation for NRG's Encina Power Station for the operating period of October 1, 2015, to September 30, 2016.

$$\$372,581.25 + \$7,929.60 + \$76,102.17 = \$456,613.02$$

³ The estimated impingement mass conversion error was corrected after the determination was released for public comment. The total interim mitigation payment for the operating period of October 1, 2015 to September 31, 2016, was adjusted from \$458,015.58 in the draft determination to \$456,613.02 in the final determination.