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GOVERNOR



JARED BLUMENFELD
SECRETARY FOR
ENVIRONMENTAL PROTECTION

State Water Resources Control Board

September 9, 2019

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: INVOICE FOR THE 2017-2018 INTERIM MITIGATION PERIOD FOR ENCINA POWER STATION - ONCE-THROUGH COOLING POLICY

This letter serves as an invoice for Encina Power Station's interim mitigation payment for the operating period of October 1, 2017, through December 11, 2018 (2017-2018 interim mitigation period). The final determination calculating the interim mitigation payment is included as Attachment A.

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

NRG Energy, Inc. (NRG) retired Encina Power Station on December 11, 2018, and elected to have the interim mitigation payment for the final months of operation included with the 2017-2018 interim mitigation period invoice. After this payment, Encina Power Station will be fully in compliance with the interim mitigation requirement of the OTC Policy.

As stated in the 2015-2016 Final Determination for Encina Power Station¹, NRG elected to comply with interim mitigation requirements in Section 2.C(3)(b) of the OTC Policy. This option demonstrates compliance with the interim mitigation requirements by providing funding to the Ocean Protection Council or State Coastal Conservancy to fund appropriate mitigation projects.

E. JOAQUIN ESQUIVEL, CHAIR | EILEEN SOBECK, EXECUTIVE DIRECTOR

1001 I Street, Sacramento, CA 95814 | Mailing Address: P.O. Box 100, Sacramento, CA 95812-0100 | www.waterboards.ca.gov

The State Water Board calculated the interim mitigation payment for the 2017-2018 interim mitigation period using information provided by NRG in its January 14, 2019 information response letter². The annual interim mitigation payment is the sum of three components: an entrainment payment using a facility-specific fee, an impingement payment, and a management and monitoring payment. The interim mitigation payment for Encina Power Station for the operating period of October 1, 2017, through December 11, 2018, is \$725,702.18.

NRG has 60 days from receipt of this letter to make this payment to the Natural Resources Agency's Ocean Protection Council. When submitting this payment, include a cover letter that identifies the National Pollution Discharge Elimination System number for Encina Power Station and copy Karen Mogus, Director of the Division of Water Quality at the State Water Board. 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

Reference Account: Ocean Protection Trust Fund

If you have questions regarding this invoice letter, please contact Julie Johnson at (916) 341-5687 (Julie.Johnson@waterboards.ca.gov), or Katherine Walsh at (916) 445-2317 (Katherine.Walsh@waterboards.ca.gov).

Sincerely,



Eileen Sobeck
Executive Director

Enclosure:

Attachment A - Final Determination for Encina Power Station

cc: Mr. Mark Gold
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):

Ms. Sheila Henika, Sheila.henika@nrg.com

Mr. Jonathan Bishop, Johnathan.Bishop@waterboards.ca.gov

Ms. Karen Mogus, Karen.Mogus@waterboards.ca.gov

Mr. Michael Lauffer, Michael.Lauffer@waterboards.ca.gov

Ms. Marleigh Wood, Marleigh.Wood@waterboards.ca.gov

Mr. Phillip Crader, Phillip.Crader@waterboards.ca.gov

Ms. Rebecca Fitzgerald, Rebecca.Fitzgerald@waterboards.ca.gov

Mr. David Gibson, David.Gibson@waterboards.ca.gov

¹ 2015-2016 Final Determination for Encina Power Station:

https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/docs/encina_1516mitigation_letter.pdf

² NRG's January 14, 2019 Information Response Letter:

https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/docs/cwa_april/enc_im1718.pdf

Attachment A – Final Determination for Encina Power Station

**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
OCTOBER 1, 2017 THROUGH DECEMBER 11, 2018**

Interim Mitigation Requirements and Determinations

The State Water Resources Control Board's (State Water Board) Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (also known as the Once-Through Cooling or 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.

NRG Energy, Inc. (NRG) retired Encina Power Station's once-through cooling Units 2, 3, 4, and 5 on December 11, 2018. NRG elected to have the interim mitigation payment for the final months of operation of Encina Power Station's Units 2, 3, 4, and 5 included in this determination. Therefore, this determination contains the interim mitigation payment calculations for Encina Power Station from October 1, 2017, through December 11, 2018.

The State Water Board approved Encina Power Station's continued request to comply with the interim mitigation measures described in Section 2.C(3)(b) of the OTC Policy in the Final Determination¹ for the October 1, 2016 to September 30, 2017 interim mitigation period (2016-2017 Final Determination). Consistent with Resolution No. 2015-0057², the recommendations in the Expert Review Panel's Final Report³, and the Technical Memorandum⁴ submitted to the State Water Board by Dr. Peter Raimondi on October 29, 2017, the interim mitigation payment is comprised of an entrainment payment, an impingement payment, and a management and monitoring payment.

In the sections below, the State Water Board has calculated Encina Power Station's interim mitigation payment for October 1, 2017, through December 11, 2018. This calculation is consistent with the methods and calculations applied in the 2016-2017 Final Determination.

Interim Mitigation Payment Calculation for Encina Power Station

Entrainment Payment Calculation - October 1, 2017, through September 30, 2018:

To calculate the portion of the interim mitigation payment to offset entrainment impacts, the State Water Board used the facility-specific cost of entrainment for Encina Power Station as determined in the Technical Memorandum. Consistent with

Resolution No. 2015-0057, the Expert Review Panel's Final Report, and the Technical Memorandum, the State Water Board used a three percent escalator to update the facility-specific cost of entrainment from the 2016-2017 Final Determination to 2018 dollars to account for inflation. The resulting entrainment cost for October 1, 2017, through September 30, 2018, increased from \$4.79 per million gallons (MG) to \$4.93/MG:

$$(\$4.79/\text{MG} \times 0.03) + \$4.79/\text{MG} = \$4.93/\text{MG}$$

In its January 14, 2019 letter⁵, NRG provided the intake volume for Encina Power Station from October 2017 to September 2018, totaling 108,140 MG. The State Water Board verified intake volume with the data submitted in the National Pollution Discharge Elimination System permit monitoring reports for Encina Power Station.

To calculate the entrainment payment, the State Water Board multiplied the intake volume by the updated cost of entrainment:

$$\$4.93/\text{MG} \times 108,140 \text{ MG} = \$533,130.20$$

Entrainment Payment Calculation - October 1, 2018, through December 11, 2018:

To calculate the portion of the interim mitigation payment to offset entrainment impacts during the final months of operation at Encina Power Station, the State Water Board used a three percent escalator to update the facility-specific cost of entrainment from the October 1, 2017 through September 30, 2018 interim mitigation period (calculated above) to 2019 dollars to account for inflation. The resulting entrainment cost for October 1, 2018, through December 11, 2018, increased from \$4.93 per million gallons (MG) to \$5.08/MG:

$$(\$4.93/\text{MG} \times 0.03) + \$4.93/\text{MG} = \$5.08/\text{MG}$$

In its January 14, 2019 letter, NRG provided the intake volume for Encina Power Station from October 1, 2018, to December 11, 2018, totaling 12,210 MG. The State Water Board verified intake volume with the data submitted in the National Pollution Discharge Elimination System permit monitoring reports for Encina Power Station.

To calculate the entrainment payment for October 1, 2018, through December 11, 2018, the State Water Board multiplied the intake volume by the updated cost of entrainment:

$$\$5.08/\text{MG} \times 12,210 \text{ MG} = \$62,026.80$$

The total entrainment payment to offset entrainment impacts from October 1, 2017, through December 11, 2018, is \$595,157.00.

$$\$533,130.20 + \$62,026.80 = \$595,157.00$$

Impingement Payment Calculation

In its January 14, 2019 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 an impingement study conducted from June 2004 through June 2005, as discussed in the November 29, 2016 letter⁶ from NRG. The latter estimate is representative of the annual total fishes and shellfish impinged and is used for the impingement calculation. The impingement mass for fish was incorrectly converted from kilograms to pounds in the November 29, 2016, April 4, 2018, and January 14, 2019 letters from NRG. The correct converted mass of impinged fishes is 9,608 pounds. The total pounds of fish (9,608 pounds) and shellfish (304 pounds) impinged from October 2017 to September 2018 is 9,912 pounds.

$$9,608 \text{ pounds} + 304 \text{ pounds} = 9,912 \text{ pounds}$$

The State Water Board calculates that 2,065 pounds of fish and shellfish were impinged during the final months of Encina Power Station's operation (October 2018 to December 11, 2018), by multiplying the total yearly calculated pounds of fish and shellfish impinged by twenty-one percent, which is equivalent to the plant operating for the additional two-and-a-half months:

$$(2.5 \text{ months} / 12 \text{ months}) = 21\%$$

$$9,912 \text{ pounds} \times 21\% = 2,081.52 \text{ pounds}$$

Therefore, the total amount of fish and shellfish impinged from October 1, 2017, through December 11, 2018, is 11,993.52 pounds.

$$9,912 \text{ pounds} + 2,081.52 \text{ pounds} = 11,993.52 \text{ pounds}$$

The State Water Board calculated the impingement payment using the total pounds of fish and shellfish impinged from October 1, 2017, through December 11, 2018, and multiplied by the average indirect economic value of the fisheries as determined in the Expert Review Panel's Final Report of \$0.80 per pound:

$$\$0.80/\text{pound} \times 11,993.52 \text{ pounds} = \$9,594.82$$

Management and Monitoring Payment Calculation

The State Water Board calculated the management and monitoring payment by taking twenty percent of the sum of the entrainment and impingement payments:

$$0.20 \times (\$595,157.00 + \$9,594.82) = \$120,950.36$$

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 to fulfill the interim mitigation obligation for NRG's Encina Power Station for the interim mitigation period of October 1, 2017, to December 11, 2018, is \$725,702.18.

$$\$595,157.00 + \$9,594.82 + \$120,950.36 = \$725,702.18$$

¹ State Water Board 2016-2017 Final Determination for Encina Power Station.
<https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/docs/interim_mitigation/fdi1617_encina.pdf>

² State Water Board Resolution No. 2015-0057.
<https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2015/rs2015_0057.pdf>

³ Final Report from the Expert Review Panel.
<https://www.waterboards.ca.gov/water_issues/programs/ocean/desalination/docs/erp_intake052512.pdf>

⁴ 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>

⁵ Letter from George L. Piantka, NRG Energy, Inc., to Eileen Sobeck, State Water Board on January 14, 2019.
<https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/docs/cwa_april/enc_im1718.pdf>

⁶ Letter from George L. Piantka, NRG Energy, Inc., to Thomas Howard, State Water Board on November 29, 2016.
<https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/powerplants/encina/docs/encina_imf16.pdf>