

**DRAFT 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 2016 THROUGH SEPTEMBER 2017**

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 (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.

The State Water Board approved Encina Power Station's request to comply with the interim mitigation measures described in Section 2.C(3)(b) of the OTC Policy in the Final Determination<sup>1</sup> for the October 1, 2015, to September 30, 2016, interim mitigation period (2015-2016 Final Determination). The 2015-2016 Final Determination also included the interim mitigation payment for the period of October 2015 through September 2016, comprised of an entrainment fee, an impingement fee, and a management and monitoring fee, consistent with Resolution No. 2015-0057<sup>2</sup>, the recommendations in the Expert Review Panel's Final Report<sup>3</sup>, and the Technical Memorandum<sup>4</sup> submitted to the State Water Board by Dr. Peter Raimondi on October 29, 2017.

The State Water Board calculated Encina Power Station's interim mitigation payment for October 1, 2016, through September 30, 2017, consistent with the methods and calculations applied in the 2015-2016 Final Determination.

Interim Mitigation Payment Calculation for Encina Power Station

Entrainment Payment Calculation

To calculate the interim mitigation payment to offset entrainment impacts, the State Water Board

---

<sup>1</sup> State Water Board 2015-2016 Final Determination for Encina Power Station.

<[https://www.waterboards.ca.gov/water\\_issues/programs/ocean/cwa316/docs/encina\\_1516mitigation\\_letter.pdf](https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/docs/encina_1516mitigation_letter.pdf)>

<sup>2</sup> State Water Board Resolution No. 2015-0057.

<[https://www.waterboards.ca.gov/board\\_decisions/adopted\\_orders/resolutions/2015/rs2015\\_0057.pdf](https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2015/rs2015_0057.pdf)>

<sup>3</sup> Final Report from the Expert Review Panel.

<[https://www.waterboards.ca.gov/water\\_issues/programs/ocean/desalination/docs/erp\\_intake052512.pdf](https://www.waterboards.ca.gov/water_issues/programs/ocean/desalination/docs/erp_intake052512.pdf)>

<sup>4</sup> 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](https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/powerplants/encina/docs/encina_technical_memo.pdf)>

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 2015-2016 Final Determination to 2017 dollars to account for inflation. The resulting entrainment cost for October 2016 through September 2017 increased from \$4.65 per million gallons (MG) to \$4.79/MG:

$$(\$4.65/MG \times 0.03) + \$4.65/MG = \$4.79/MG$$

In their April 4, 2018 letter<sup>5</sup>, NRG Energy provided the intake volume for Encina Power Station from October 2016 to September 2017, totaling 100,630 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:

$$\$4.79/MG \times 100,630 MG = \$482,017.70$$

#### Impingement Payment Calculation

In their April 4, 2018 letter, NRG Energy 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 letter<sup>6</sup> from NRG Energy. The latter estimate is representative of the annual total fishes 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 and April 4, 2018 letters from NRG. The correct converted mass of impinged fishes is 9,608 pounds. The State Water Board calculated the impingement payment using the total pounds of fish and shellfish impinged during the June 2004 through June 2005 impingement and entrainment study (9,912 pounds) 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:

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

---

<sup>5</sup> Letter from George L. Piantka, NRG Energy, Inc., to Eileen Soback, State Water Board on April 4, 2018. <[https://www.waterboards.ca.gov/water\\_issues/programs/ocean/cwa316/powerplants/encina/docs/encina\\_1617inf\\_orequest\\_resp.pdf](https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/powerplants/encina/docs/encina_1617inf_orequest_resp.pdf)>

<sup>6</sup> 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](https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/powerplants/encina/docs/encina_imf16.pdf)>

## Management and Monitoring Payment Calculation

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

$$0.20 \times (\$482,017.70 + \$7,929.60) = \$97,989.46$$

### State Water Board's Draft Determination for Encina Power Station

Based on the sum of the entrainment, impingement, and management and monitoring payment calculations, the total payment is \$587,936.76 to fulfill the interim mitigation obligation for NRG Energy's Encina Power Station for the operating period of October 1, 2016, to September 30, 2017.

$$\$482,017.70 + \$7,929.60 + \$97,989.46 = \$587,936.76$$