

**DRAFT 2022-2023 DETERMINATION TO APPROVE MITIGATION MEASURES
FOR THE WATER QUALITY CONTROL POLICY ON THE USE OF
COASTAL AND ESTUARINE WATERS FOR POWER PLANT COOLING:**

**DIABLO CANYON NUCLEAR POWER PLANT
OCTOBER 1, 2022, THROUGH SEPTEMBER 30, 2023**

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 Cooling¹ (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.

Resolution No. 2015-0057² originally described the procedures for calculating mitigation payments for Once-Through Cooling power plants. This resolution was consistent with the recommendations in the 2012 Expert Review Panel's Final Report³. On April 17, 2024, the State Water Board adopted Resolution No. 2024-0014⁴, which revised the calculation to ensure annual payments continue to appropriately compensate for interim impacts to marine life based on current mitigation costs. Revisions to the interim mitigation calculation were based on findings in the 2023 Expert Review Panel's Final Report⁵.

The State Water Board approved Pacific Gas and Electric's continued request to comply with the interim mitigation measures described in Section 2.C(3)(b) of the OTC Policy in the Final Determination for Diablo Canyon Nuclear Power Plant for the October 1, 2021, to September 30, 2022 interim mitigation period. Pursuant to this continued request, in the sections below, State Water Board staff calculated Diablo Canyon Nuclear Power Plant's interim mitigation payment for October 1, 2022, through September 30, 2023 (also known as the 2022-2023 determination period). Consistent with Resolution No. 2024-0014, each interim mitigation payment is comprised of an entrainment payment, an impingement payment, and a management and monitoring payment.

¹ State Water Board. 2010. [Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling](#). Sacramento, CA: State Water Board.

² State Water Board. 2015. [Resolution No. 2015-0057](#). Sacramento, CA: State Water Board.

³ Cailliet, G.M. Callaway, J. Foster, M.S. Raimondi, P. Steinbeck, J. 2012. [Mitigation and Fees for the Intake of Seawater by Desalination and Power Plants](#) (2012 Expert Review Panel's Final Report). Sacramento, CA: State Water Board.

Sacramento, CA: State Water Board.

⁴ State Water Board. 2024. [Resolution No. 2024-0014](#). Sacramento, CA: State Water Board.

⁵ Dr. Peter Raimondi. 2023. [Recommendations to Update the Interim Mitigation Cost Calculation for Once-Through Cooling Intake Use Leading to Marine Life Entrainment and Impingement](#) (2023 Expert Review Panel's Final Report). Sacramento, CA: State Water Board.

Interim Mitigation Payment Calculation for Diablo Canyon Nuclear Power Plant

Entrainment Payment Calculation

To calculate the portion of the interim mitigation payment to offset entrainment impacts, State Water Board staff used the default average cost of entrainment determined in Resolution No. 2024-0014, which is \$12.51 per million gallons (MG). The usage of the default average cost of entrainment differs from interim mitigation determinations for Diablo Canyon Nuclear Power Plant in prior years, which employed a site-specific cost of entrainment. Due to the high volume of water intake and related high levels of entrainment at this power plant, and because entrained marine life is usually planktonic and more widely distributed geographically (e.g., not primarily limited to species found in the adjacent rocky reef habitat), the default cost for entrainment is a better estimate of compensatory mitigation costs than the previously used site-specific entrainment cost.

In its September 6, 2024 letter to the State Water Board, Pacific Gas and Electric provided the intake volume for Diablo Canyon Nuclear Power Plant for the 2022-2023 determination period of 862,028 MG. State Water Board staff verified the intake volume with the data submitted in the National Pollutant Discharge Elimination System permit monitoring reports for Diablo Canyon Nuclear Power Plant.

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

$$\$12.51/\text{MG} \times 862,028 \text{ MG} = \$10,783,970.28$$

Impingement Payment Calculation

To calculate the portion of the interim mitigation payment to offset impingement impacts, State Water Board staff used the site-specific cost of impingement for Diablo Canyon Nuclear Power Plant determined in Resolution No. 2024-0014, which is \$33.46 per pound of fish impinged. The usage of a site-specific cost of impingement differs from interim mitigation determinations for Diablo Canyon Nuclear Power Plant in prior years, which employed a default cost of impingement. The usage of a site-specific cost of impingement is based on the power plant's unique properties in comparison to other gas-fired OTC power plants, chiefly its high intake volumes, low intake velocity, and the rocky reef that comprises the surrounding marine habitat. Additionally, marine species that are impinged are larger, usually juvenile or adult, and are more local geographically to Diablo Canyon Nuclear Power Plant's unique rocky reef habitat.

In its September 6, 2024 letter to the State Water Board, Pacific Gas and Electric confirmed use of the established annual average of pounds of fish impinged stated in the Final Substitute Environmental Document⁶ associated with the OTC Policy, which is 710 pounds.

⁶ State Water Board. 2010. [Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling Final Substitute Environmental Document](#). Sacramento, CA: State Water Board.

To calculate the impingement payment, State Water Board staff multiplied the annual average pounds of fish impinged by the site-specific cost of impingement:

$$\$33.46/\text{pound} \times 710 \text{ pounds} = \$23,756.60$$

Management and Monitoring Payment Calculation

State Water Board staff calculated the management and monitoring payment by taking twenty percent of the sum of the entrainment and impingement payments, as determined by Resolution No. 2024-0014:

$$0.20 \times (\$10,783,970.28 + \$23,756.60) = \$2,161,545.38$$

State Water Board's Draft Determination for Diablo Canyon Nuclear Power Plant

Based on the sum of the entrainment, impingement, and management and monitoring payment calculations, the total payment to fulfill the interim mitigation obligation for Pacific Gas and Electric's Diablo Canyon Nuclear Power Plant for the interim mitigation period of October 1, 2022, to September 30, 2023, is \$12,969,272.26.

$$\$10,783,970.28 + \$23,756.60 + \$2,161,545.38 = \$12,969,272.26$$