

**STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 2024-0014**

**REVISIONS TO THE INTERIM MITIGATION CALCULATION FOR THE WATER
QUALITY CONTROL POLICY ON THE USE OF COASTAL AND ESTUARINE
WATERS FOR POWER PLANT COOLING**

WHEREAS:

1. The State Water Resources Control Board (State Water Board) is designated as the state water pollution control agency for all purposes stated in the Clean Water Act, including water quality control planning and waste discharge regulation.
2. The State Water Board is responsible for adopting state policy for water quality control, which may consist of water quality principles, guidelines, and objectives deemed essential for water quality control.
3. On May 4, 2010, the State Water Board adopted the statewide “Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling” (Once-Through Cooling or OTC Policy) under [Resolution No. 2010-0020](#). The OTC Policy was approved by the Office of Administrative Law on September 27, 2010, and became fully effective on October 1, 2010. The OTC Policy was amended in 2011, 2013, 2015, 2017, 2020, 2021, and 2023.
4. The OTC Policy establishes uniform, technology-based standards to implement federal Clean Water Act section 316(b), which requires that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact.
5. The OTC Policy is implemented through National Pollutant Discharge Elimination System (NPDES) permits, issued pursuant to Clean Water Act section 402, which authorizes the point source discharge of pollutants to navigable waters.
6. Of the nineteen power plants originally affected by the OTC Policy, twelve have achieved final compliance by retiring, repowering, or retrofitting once-through cooling units.
7. OTC power plant operations are known to cause adverse impacts to marine life and habitat by impingement and entrainment. Impingement refers to when aquatic organisms are trapped against the OTC intake structure equipment. Entrainment refers to when aquatic organisms,

particularly larval or planktonic, are drawn into the OTC intake structures and exposed to high heat.

Interim Mitigation Requirements

8. Section 2.C(3) of the OTC Policy requires the owner or operator of an existing OTC power plant to implement measures to mitigate the interim impingement and entrainment impacts resulting from their cooling water intake structure(s), commencing October 1, 2015, and continuing up to and until the owner and operator achieve final compliance. An owner or operator may comply with this requirement by:
 - a. Section 2.C(3)(a): Demonstrating to the State Water Board's satisfaction 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, 2020; or
 - b. Section 2.C(3)(b): Demonstrating to the State Water Board's satisfaction that the interim impacts are compensated for by the owner or operator providing funding to the California Coast Conservancy which will work with the Ocean Protection Council to fund an appropriate mitigation project; or
 - c. Section 2.C(3)(c): Developing and implementing a mitigation project for the facility, approved by the State Water Board, which will compensate for the interim impingement and entrainment impacts. Such a project must be overseen by an advisory panel of experts convened by the State Water Board.
 - d. Section 2.C(3)(d): The habitat production foregone method, or a comparable alternate method approved by the State Water Board, shall be used to determine the habitat and area, based on replacement of the annual entrainment, for funding a mitigation project.
 - e. Section 2.C(3)(e): It is the preference of the State Water Board that the funding is provided to the California Coastal Conservancy, working with the Ocean Protection Council, for mitigation projects directed toward increases in marine life associated with the State's Marine Protected Areas in the geographic region of the facility.
9. On August 18, 2015, the State Water Board adopted [Resolution No. 2015-0057](#) (2015 Resolution), which delegated authority to the Executive Director of the State Water Board to approve, on a case-by-case basis, mitigation measures that owners or operators of OTC power

- plants shall undertake to comply with requirements for interim mitigation. The 2015 Resolution also established methods to calculate interim mitigation payments to comply with Section 2.C(3)(b) based on findings and recommendations by an Expert Review Panel that developed a scientifically defensible payment that was compensatory for the continued intake impacts due to entrainment and impingement.
10. The interim mitigation calculation is comprised of an entrainment payment, an impingement payment, and a management and monitoring payment for implementation and monitoring of the mitigation project and is based on each power plant's intake impacts. The entrainment payment is based on the annual volume of intake of once-through cooling water. The impingement payment is based on the annual biomass (in pounds) of fish impinged. The management and monitoring payment is twenty percent of the sum of the entrainment and impingement payments.
 11. Most owners and operators of OTC power plants required to comply with interim mitigation requirements have elected to comply by Section 2.C(3)(b) of the OTC Policy.
 12. In 2016, the State Water Board, Ocean Protection Council, and the California Coastal Conservancy entered a Memorandum of Understanding directing authority to the Ocean Protection Council and the California Coastal Conservancy to allocate and distribute collected funds from interim mitigation and providing guidelines on project selection to receive funds.

Interim Mitigation Payment Calculation Updates

13. In 2023, the Ocean Protection Council, in coordination with the State Water Board, contracted with Dr. Peter Raimondi from the University of California, Santa Cruz, to conduct an expert review of the interim mitigation payment calculation and provide recommendations for updating the calculation based on the cost of recent mitigation projects and considering fluctuations in inflation rates. The State Water Board and Ocean Protection Council requested Dr. Raimondi evaluate the inflation escalator, default costs for impingement and entrainment, and the site-specific costs for Diablo Canyon Nuclear Power Plant (Diablo Canyon). The Ocean Protection Council and the State Water Board received Dr. Raimondi's final report with findings and recommendations (2023 Expert Review Report) on August 4, 2023.
14. Based on the Habitat Production Forgone method, as required by Section 2.C(3)(d) of the OTC Policy, the cost of interim impacts to marine life was determined based on the estimated and actual costs of existing

mitigation projects. The most available data of cost per acre of compensatory habitat mitigation were adjusted to 2023 dollars and used in the analyses for the 2023 Expert Review Report.

15. The following revisions to the interim mitigation payment calculation are based on the information provided in the 2023 Expert Review Report as described in the Staff Report:

- a. **Default Cost for Entrainment:** The default cost for entrainment will be \$12.51 per million gallons (MG) of intake water. The default cost for entrainment derives from the upper 95th percentile value of the 2023 Expert Review Report's findings using a Default-Common Habitat approach (Table 1a in 2023 Expert Review Report) that consists of the rate per MG of intake water applicable to all facilities relative to creating or replacing resource loss from wetland and rocky reef habitats with available data.
- b. **Default Cost for Impingement:** The default cost for impingement will be \$102.73 per pound of fish impinged. The default cost is the average of the upper 95th percentile values for the two types of habitats (Table 2 in 2023 Expert Review Report). The significant increase is due to having a better estimate of the cost per acre of habitat to compensate for impingement compared to the analysis from the 2015 Resolution, which was solely based on an economic analysis conducted for Huntington Beach Generating Station. The increase is also due to calculating the cost information in 2023 dollar values.
- c. **Site-Specific Costs for Diablo Canyon:** Diablo Canyon is uniquely different from other OTC power plants in that it uses high intake volumes and a low intake velocity, and the surrounding marine habitat is primarily rocky reef. Due to the high amount of water intake and related high levels of entrainment at Diablo Canyon, 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. Additionally, marine species that are impinged are larger, usually juvenile or adult, and are more local geographically to Diablo Canyon's unique rocky reef habitat. Therefore, for Diablo Canyon, the site-specific cost for entrainment is discontinued and the default cost for entrainment shall apply, which is based on the costs of both wetland and reef restoration projects. Additionally, the site-specific cost of

impingement for Diablo Canyon will be \$33.46 per pound of fish impinged.

- d. Annual Inflation Escalator: The annual inflation escalator will be set to three percent or the California Consumer Price Index for urban consumers annual percent change for the latter year of the respective interim mitigation period, whichever is greater. The annual inflation escalator will be applied to both entrainment and impingement payments.
- e. The management and monitoring component will remain unchanged, as twenty percent of the sum of the entrainment and impingement components of the annual payments.

16. The 2015 Resolution directs in the cases where the entrainment costs are greater than \$6.50 per million gallons, the Executive Director shall bring these cases before the State Water Board for approval. As the revised default cost for entrainment exceeds this value and is expected to continue increasing, the threshold for case-by-case State Water Board approval shall also increase.

Disadvantaged Communities and Tribal Engagement and Outreach

17. Operations of the OTC power plants may result in continued adverse water quality and marine life impacts to the local communities, including the disadvantaged communities in which Harbor and Ormond Beach generating stations are located, and the ancestral lands of several California Native American Tribes.

18. The State Water Board conducted outreach to the community members and representatives of environmental and environmental justice groups surrounding the impacted generating stations to engage in and identify issues of environmental justice as early as possible. The State Water Board contacted 39 external groups and 46 tribal representatives in San Luis Obispo, Ventura, Los Angeles, and Orange Counties.

19. The State Water Board respectfully offered tribal consultations and conducted consultations upon request with the Ocean Protection Council and California Coastal Conservancy.

Public Process

20. The State Water Board held an information item on August 15, 2023, providing opportunity for oral comments and discussion between State

Water Board members and staff, the Ocean Protection Council staff, the California Coastal Conservancy staff, and the public on the development of the proposed resolution to update the interim mitigation payment calculation for the OTC Policy.

21. The State Water Board provided a written public comment period for the proposed Resolution from September 27, 2023, through noon on October 30, 2023.
22. The State Water Board hosted two public listening sessions with the Ocean Protection Council and the California Coastal Conservancy on October 2, 2023, and October 5, 2023.
23. The State Water Board reviewed and carefully considered all comments and testimony received during the public process.

Effective Date

24. The updates to the interim mitigation payment calculation will become effective immediately upon adoption of this resolution and will be applied to the interim mitigation period starting October 1, 2022, to September 30, 2023.

THEREFORE BE IT RESOLVED THAT:

The State Water Board:

1. Approves and adopts the updates to the calculation used to determine annual interim mitigation payments for owners and operators complying with Section 2.C(3)(b) of the OTC Policy as described in finding 14.a through 14.e above.
2. Continues to authorize the Executive Director of the State Water Board to approve, on a case-by-case basis, mitigation measures that owners or operators of OTC power plants shall undertake to comply with requirements for interim mitigation.
3. Shall continue to post draft determinations pursuant to the delegated authority for public comment for a period of twenty days and will circulate to persons who have requested public notice on matters related to the OTC Policy. After consideration of public comments received on draft determinations, the Executive Director shall consider whether, in light of unusual circumstances or significant controversy, the final approval of the determination shall be made by the State Water Board at a public meeting.

4. Directs the Executive Director, in circumstances where the entrainment cost is calculated to be greater than \$22.50 per million gallons, to bring these cases before the State Water Board for approval.
5. Directs that this authorization shall not be construed to eliminate the necessity of required approval or concurrence of any other state agency.
6. Directs that this authorization shall remain in full force and effect until modified or revoked by the State Water Board.
7. Directs State Water Board staff to coordinate with the Ocean Protection Council and California Coastal Conservancy to revise the Memorandum of Understanding on the future use of interim mitigation funds, future opportunities for engagement with the public and Tribes, and opportunities for external parties to propose mitigation projects for funding.

CERTIFICATION

The undersigned Clerk to the Board does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on April 17, 2024.

AYE: Chair E. Joaquin Esquivel
 Vice Chair Dorene D'Adamo
 Board Member Sean Maguire
 Board Member Laurel Firestone
 Board Member Nichole Morgan

NAY: None

ABSENT: None

ABSTAIN: None



Courtney Tyler
Clerk to the Board