

**STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 2020-0029**

AMENDMENT TO THE WATER QUALITY CONTROL POLICY ON THE
USE OF COASTAL AND ESTUARINE WATERS FOR POWER PLANT COOLING
TO REVISE COMPLIANCE SCHEDULES FOR
ALAMITOS, HUNTINGTON BEACH, ORMOND BEACH, AND REDONDO BEACH
GENERATING STATIONS AND DIABLO CANYON NUCLEAR POWER PLANT

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 Office of Administrative Law approved the OTC Policy on September 27, 2010, and the OTC Policy became effective on October 1, 2010.
4. The OTC Policy establishes uniform, technology-based standards to implement 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 impacts.
5. The OTC Policy applies to nine existing power plants located along the California coast, and is implemented through National Pollutant Discharge Elimination System (“NPDES”) permits, issued pursuant to Clean Water Act section 402, which authorize the point source discharge of pollutants to navigable waters. The OTC Policy originally affected nineteen once-through cooling power plants, and ten of those facilities have ceased all once-through cooling operations since adoption of the OTC Policy.
6. The OTC Policy establishes a schedule that provides the latest compliance date for the replacement, repowering, or retirement of each remaining power plant still utilizing once-through cooling operations while accounting for potential impacts to California’s electrical supply.
7. The OTC Policy was amended on July 19, 2011, making changes to compliance dates for power generating stations owned and operated by the Los Angeles Department of Water and Power (“LADWP”) on a unit-by-unit basis rather than a facility-wide basis. The OTC Policy was amended on June 18, 2013, authorizing the

Regional Water Quality Control Boards to issue NPDES permits to point source dischargers in California, including power plants subject to the OTC Policy. The OTC Policy was amended on April 7, 2015, to extend the compliance date for the Moss Landing Power Plant from December 31, 2017, to December 31, 2020. The OTC Policy was last amended on August 15, 2017, to extend the compliance date for Encina Power Station from December 31, 2017, to December 31, 2018.

8. Section 3.A of the OTC Policy requires the owner or operator of an affected fossil-fuel power plant to submit an implementation plan to the State Water Board by April 1, 2011, selecting one of two OTC Policy compliance tracks and describing the general design, construction, or operational measures to implement the compliance track. The State Water Board received implementation plans from all owners and/or operators as requested, including the implementation plans for AES-Southland, Inc. (“AES”) Alamitos Generating Station (“Alamitos”), AES Huntington Beach Generating Station (“Huntington Beach”), and AES Redondo Beach Generating Station (“Redondo Beach”) and the GenOn Energy, Inc. (“GenOn”) Ormond Beach Generating Station (“Ormond Beach”). Both AES and GenOn plan to comply with the OTC Policy through ceasing once-through cooling operations at the facilities listed above by the compliance dates.
9. The Statewide Advisory Committee on Cooling Water Intake Structures (“SACCWIS”) is composed of representatives from the California Air Resources Board, the California Coastal Commission, the California Energy Commission, the California Public Utilities Commission (“CPUC”), the California State Lands Commission, the California Independent System Operator (“CAISO”), and the State Water Board. The purpose of the committee is to review implementation plans and schedules and to advise the State Water Board on OTC Policy implementation, in order to ensure that the implementation schedule takes into account local area and grid reliability, including permitting constraints.

Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach Generating Stations

10. On June 20, 2019, the Assigned Commissioner and Administrative Law Judge in the CPUC Integrated Resource Planning proceeding (“[Rulemaking R.16-02-007](https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M302/K942/302942332.PDF)”) (<https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M302/K942/302942332.PDF>) issued a ruling that identified a potential system capacity shortfall of between 2,300 and 4,400 MW in the CAISO Balancing Authority Area beginning in the summer of 2021. The analysis found that the potential shortfall arises from several factors, including shifts in peak demand to later in the day (shifting from 4 p.m. - 6 p.m. to 7 p.m. - 9 p.m.) and later in the year (shifting from August to September) when solar and wind resources are not as reliably available to meet peak demand; changes in the method for calculating the qualifying capacity of wind and solar resources resulting in lower qualifying capacity for these resources than previously determined; uncertainty regarding the level of imports on which California can depend in the future as other states also shift towards using more renewable energy resources; and unanticipated retirements of five non-OTC generating units.

11. On August 23, 2019, the SACCWIS approved the *Local and System-Wide 2021 Grid Reliability Studies* report, which assessed electric system reliability under study assumptions and scenarios. The analyses showed that it is necessary for Alamos Units 3, 4, and 5 to be operational for two or more years to ensure local grid reliability, and for a portion of the available OTC units at Huntington Beach, Ormond Beach, and Redondo Beach to be operational for two or more years, but no longer than necessary, to address system-wide grid reliability concerns. The SACCWIS concluded that further information and analysis is needed before the committee could form a final recommendation on compliance date extensions for State Water Board consideration.

12. On November 7, 2019, the CPUC adopted Decision (["D."\)19-11-016](https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M319/K825/319825388.PDF) (<https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M319/K825/319825388.PDF>). In the decision, the CPUC directed 3,300 MW of new capacity to be procured by 2023, with 50% (1,650 MW) of this procurement targeted to come online by August 1, 2021; 75% (an additional 825 MW) by August 1, 2022; and 100% (an additional 825 MW) by August 1, 2023, to address the system-wide capacity shortfall. The decision also recommended the following phased extensions to the OTC Policy compliance dates for specific generating units to support the procurement schedule:

- a. Extend the compliance date of Alamos Units 3, 4, and 5 for up to three years to December 31, 2023;
- b. Extend the compliance date of Huntington Beach Unit 2 for up to three years to December 31, 2023;
- c. Extend the compliance date of Ormond Beach Units 1 and 2 for up to one year to December 31, 2021; and
- d. Extend the compliance date of Redondo Beach Units 5, 6, and 8 for up to two years to December 31, 2022.

These compliance date extensions would provide a "bridge" of roughly 3,740 MW in 2021, roughly 2,230 MW in 2022, and roughly 1,380 MW in 2023 as the 3,300 MW of new procurement comes online by 2023.

13. On January 23, 2020, the SACCWIS met and considered additional information and documents. The SACCWIS approved the *Recommended Compliance Date Extensions for Alamos, Huntington Beach, Ormond Beach, and Redondo Beach Generating Stations* report and acknowledged that the CPUC's D.19-11-016, as Alternative 3, is sufficient to maintain grid reliability.

14. Also on January 23, 2020, the SACCWIS recommended, as Alternative 4, the State Water Board consider the following compliance date extensions in order to ensure local and system-wide grid reliability as new procurement directed by the CPUC comes online over the next three years to offset the potential energy shortfall:

- a. Extend the compliance date of Alamitos Units 3, 4, and 5 for three years to December 31, 2023;
 - b. Extend the compliance date of Huntington Beach Unit 2 for three years to December 31, 2023;
 - c. Extend the compliance date of Ormond Beach Units 1 and 2 for three years to December 31, 2023; and
 - d. Extend the compliance date of Redondo Beach Units 5, 6, and 8 for one year to December 31, 2021.
15. The amendment to the OTC Policy extends the compliance dates for Alamitos Units 3, 4, and 5, Huntington Beach Unit 2, Ormond Beach Units 1 and 2, and Redondo Beach Units 5, 6, and 8 as recommended by the SACCWIS and as reflected in Attachment A. The amendment will be made to the implementation schedule as new lines for Milestones 30 and 34 of Table 1 in Section 3.E.
16. AES and GenOn, or future owners and operators of Alamitos, Huntington Beach, Redondo Beach, and Ormond Beach, will be required to continue complying with interim mitigation requirements up to and until final compliance with the OTC Policy.
17. The State Water Board adopted the OTC Policy with the explicit purpose of minimizing adverse environmental impacts to marine life resulting from use of coastal and estuarine waters for power plant cooling, and the State Water Board remains committed to timely compliance with the OTC Policy by owners and operators of affected power plants. Further, the State Water Board recognizes that OTC Policy compliance dates provide certainty to communities in planning for future land use.

In adopting the OTC Policy, the State Water Board recognized that power generating facilities are part of a state-wide electrical grid and that changes in generating capacity resulting from OTC Policy compliance may have an impact on the grid and power availability, requiring long-term planning for transmission, generation, and demand resources. The OTC Policy provided a lengthy compliance schedule based upon extensive consultation with the energy agencies in order to facilitate planning for potential replacement, repowering, or retirement of affected power plants while avoiding disruption in the state's electrical supply. The OTC Policy requires compliance as soon as possible, but no later than the dates set forth in the Policy Implementation Schedule (Policy Section 2.B.(1)), providing for State Water Board consideration of suspensions or revisions of compliance dates recommended by the energy agencies "based upon the need for continued operation of an existing power plant to maintain the reliability of the electrical system" (OTC Policy section 2.B.(2).) Provisions for NPDES permits implementing the OTC Policy further emphasize that compliance schedule revisions recommended by the SACCWIS are those "necessary to maintain reliability of the electric system." (OTC Policy section 3.C.(1).) The OTC Policy also directs that, where the energy

agencies make a unanimous recommendation for compliance date revisions based on grid reliability, the State Water Board “shall afford significant weight to the recommendation.” (OTC Policy section 3.B(5).)

18. The CPUC, CAISO, and CEC, in a joint submission to the State Water Board on May 27, 2020, affirmed the continued need for the extensions specified above. In August 2020, the CPUC, CAISO, and CEC updated the State Water Board on the progress of bringing new resources online to replace the affected facilities. The CPUC has established a process to track the procurement and development of the new projects fulfilling the 3,300 MW ordered by the CPUC in D.19-11-016. Currently, the process suggests that most projects needing to be developed by August 1, 2021, are meeting their development milestones. However, potential impacts from the coronavirus disease 2019 (“COVID-19”), shelter-at-home, and social distancing requirements may create new delay risks. Potential delays may also result from COVID-19-related supply chain issues and/or potential permitting or inspection delays resulting from agency staff, budget, or procedural constraints related to COVID-19.
19. The CPUC is continuing to monitor development of the new 1,650 MW of new resources targeted to come online by August 1, 2021, as set forth in Finding 12. However, if the CPUC’s tracking of project development indicates a significant risk of delay in project online dates that would put California’s electricity reliability at risk, the CPUC, CAISO, and CEC may return to the State Water Board in 2021 to request an additional one-year extension of OTC Policy compliance dates for units that are scheduled to comply at the end of 2021. The CPUC, CAISO, and CEC communicated that they will not make such a recommendation unless an extension is absolutely necessary for grid reliability. Therefore, in order to ensure transparency, the energy agencies will provide quarterly reports to the State Water Board providing the status of all projects that are anticipated to be online by August 1, 2021, their targeted online dates, and any identified risk of delays.
20. Portions of California were subject to rotating power outages during mid-August 2020 due largely to unexpectedly high peak energy demands during widespread extreme high temperatures. The CPUC, CAISO, and CEC may be revising their forecasting models to account for this scenario, and may determine that there is a need to request additional extensions of final compliance dates to maintain grid reliability and avoid similar blackouts in the future.
21. Should there be a need for additional extensions, the OTC Policy provides expedited relief from final compliance dates as necessary to maintain grid reliability. Section 2.B(2)(a) of the OTC Policy allows the CAISO to notify the State Water Board that CAISO is extending the compliance date by 90 days (e.g., to March 31, 2022) as long as neither the CEC nor CPUC object in writing within ten days. If CAISO notifies the State Water Board that an extension beyond March 31, 2022, is needed for grid reliability, Section 2.B(2)(b) of the OTC Policy requires the State Water Board to conduct an expedited hearing within 90 days of receiving the notification. At the conclusion of the hearing, Section 2.B(2)(b) authorizes the State Water Board

to suspend the final compliance date indefinitely, pending its full evaluation and consideration of an amendment to the OTC Policy's final compliance date. Pursuant to Section 2.B(2)(d) of the OTC Policy, the State Water Board, in considering whether to suspend or amend the final compliance dates, shall afford significant weight to the recommendations of the CAISO. The State Water Board commits to act expeditiously to evaluate whether to suspend or amend the final compliance date beyond 90 days.

22. The State Water Board's primary responsibility and jurisdiction is to implement CWA 316(b) and ensure that the beneficial uses of the state's coastal and estuarine waters are protected. The compliance schedule revisions for Huntington Beach, Alamitos, Ormond Beach, and Redondo Beach are adopted in order to provide for grid reliability needed in the short term and should not be interpreted in any way as the State Water Board retreating from its goal of phasing out adverse environmental impacts resulting from use of coastal and estuarine waters for once-through cooling.

Diablo Canyon Nuclear Power Plant

23. On January 17, 2020, the State Water Board received a letter from the Pacific Gas and Electric Company (PG&E) requesting amendment of the OTC Policy compliance dates for Diablo Canyon Nuclear Power Plant Units 1 and 2 to conform with the expiration dates of the current Nuclear Regulatory Commission (NRC) licenses for each unit and PG&E's plan to permanently retire the units as approved by the CPUC in 2018. During development of the OTC Policy, PG&E noted the discrepancy of the OTC Policy compliance date not matching the NRC license expiration dates of Units 1 and 2. Following PG&E's decision to not pursue renewal of the NRC licenses for Units 1 and 2 beyond 2024 and 2025, PG&E requested an amendment to conform the compliance dates in the OTC Policy. The CPUC, in their D. 18-01-002, supports the operation of Unit 2 through the end of its current NRC license as part of Diablo Canyon's retirement plan.
24. The amendment to the OTC Policy shortens the compliance date for Diablo Canyon Nuclear Power Plant Unit 1 by approximately two months from December 31, 2024, to November 2, 2024, and extends the compliance date for Unit 2 by approximately nine months from December 31, 2024, to August 26, 2025. As reflected in Attachment A, the amendment will be made to the implementation schedule as new lines for Milestones 36 and 38 of Table 1 in Section 3.E.
25. PG&E will be required to continue complying with interim mitigation requirements up to and until final compliance with the OTC Policy.

Administrative Amendments

26. Section 3.B(5) of the OTC Policy states that the State Water Board shall consider the SACCWIS' recommendations for compliance date extensions and direct staff to make modifications to the OTC Policy, if appropriate, for the State Water Board member's consideration. As reflected in Attachment A, the amendment to Section

3.B(5) of the OTC Policy modifies this process so that the State Water Board will consider the SACCWIS' recommendations and consider modifications to the OTC Policy, if appropriate, without first directing staff to make modifications to the OTC Policy. In order to expeditiously address compliance date revisions recommended by the SACCWIS, staff may use information items and briefings to apprise State Water Board members of SACCWIS' recommendations while simultaneously drafting an amendment for State Water Board consideration as soon as practicable.

27. On March 27, 2014, LADWP sent a letter to the State Water Board requesting to change the annual due date of its grid reliability report from December 31 of a given year to January 31 of a given year. The additional month provides time for LADWP to incorporate information from the Ten-Year Transmission Assessment and the Integrated Resources Plan, which are finalized by December 31, into their grid reliability report and present the report to the LADWP Board of Water and Power Commissioners prior to submittal to the SACCWIS. In a letter dated April 24, 2014, the State Water Board directed LADWP to submit its annual grid reliability report by January 31 of each year pursuant to a Water Code Section 13383 letter order, and LADWP has done so since 2014. The amendment to Section 3.B(3) of the OTC Policy changes the due date of LADWP's annual grid reliability report from December 31 to January 31 of a given year, as reflected in Attachment A.

28. The amendment to the OTC Policy will reformat and non-substantively revise text in the OTC Policy to improve readability and comply with California Government Code Section 11546.7 document accessibility requirements.

California Environmental Quality Act

29. The California Natural Resources Agency approved the State Water Board's water quality control planning process as a certified regulatory program that adequately satisfies the California Environmental Quality Act (CEQA) requirements for preparing environmental documents (California Code of Regulations, title 23, section 3777). A substitute environmental document (SED) is used in place of an environmental impact report as CEQA environmental documentation.

30. The "Amendment to the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling for Extension of Compliance Schedules of Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach Generating Stations Staff Report" ("Staff Report") contains the required environmental documentation under the State Water Board's CEQA regulations. The changes in compliance dates do not constitute a project within the meaning of CEQA. Nonetheless, the addendum to the Final SED adopted with the OTC Policy on May 4, 2010, concludes that revising compliance dates does not lead to new significant environmental impacts or a substantial increase in the severity of previously identified environmental effects. The addendum to the Final SED is included as Section 8 of the Staff Report.

31. Consistent with CEQA, the State Water Board finds the Staff Report does not engage in speculation, but rather analyzes the project and the alternatives to the project, and concludes that the project will not result in any additional environmental impacts.

Public Process

32. The State Water Board provided a written public comment period from March 18, 2020, through noon on May 18, 2020. During the comment period, the State Water Board held a public board workshop on April 21, 2020, providing an opportunity for open discussion between State Water Board members, staff, and the public on the proposed amendment to the OTC Policy.

33. The State Water Board carefully considered comments received and responded to comments. Based on the comments, the State Water Board revised the proposed amendment to the OTC Policy and the Staff Report. The responses to comments and revisions to the Staff Report do not add significant new information that is material to the State Water Board's decision or that would otherwise warrant action that is not a logical outgrowth of the proposed amendment that was previously subject to a written comment period. Therefore, it is not necessary to afford interested persons with another written comment period to address the responses to comments or revisions to the Staff Report.

34. The State Water Board conducted a public hearing in Sacramento on September 1, 2020, to solicit comments regarding the proposed amendment to the OTC Policy and has reviewed and carefully considered all comments and testimony received.

Effective Date

35. The amendment to the OTC Policy will become effective upon approval by the Office of Administrative Law.

THEREFORE BE IT RESOLVED THAT:

The State Water Board:

1. Approves and adopts the Staff Report and Addendum to the 2010 Final SED and directs the Executive Director or designee to transmit the Notice of Decision to the Secretary of Resources.
2. Adopts the amendment to the OTC Policy as reflected in Attachment A.
3. Authorizes the Executive Director or designee to submit the amendment to the Office of Administrative Law for review and approval.

4. If, during the approval process, Water Board staff or the Office of Administrative Law determines that minor, non-substantive modifications to the language of the amendment are needed for clarity or consistency, the Executive Director or designee may make such changes and shall inform the State Water Board of any such changes.

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 September 1, 2020.

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

NAY: None

ABSENT: Board Member Tam M. Doduc

ABSTAIN: None



Jeanine Townsend
Clerk to the Board

**AMENDMENT TO THE WATER QUALITY
CONTROL POLICY ON THE USE OF
COASTAL AND ESTUARINE WATERS FOR
POWER PLANT COOLING**

**TO REVISE COMPLIANCE SCHEDULES FOR
ALAMITOS, HUNTINGTON BEACH,
ORMOND BEACH, AND REDONDO BEACH
GENERATING STATIONS AND DIABLO
CANYON NUCLEAR POWER PLANT**

FINAL STAFF REPORT

**State Water Resources Control Board
September 1, 2020**



State of California

Gavin Newsom, *Governor*

California Environmental Protection Agency

Jared Blumenfeld, *Secretary*

State Water Resources Control Board

<https://www.waterboards.ca.gov/>

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Dorene D'Adamo, *Vice Chair*

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Sean Maguire, *Member*

Laurel Firestone, *Member*

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Abbreviations and Acronyms

| Abbreviation or Acronym | Full Name or Phrase |
|--------------------------------|---|
| AES | AES-Southland, Inc. |
| Alamitos | Alamitos Generating Station |
| BTA | Best Technology Available |
| CAISO | California Independent System Operator |
| CEC | California Energy Commission |
| CEQA | California Environmental Quality Act |
| CPUC | California Public Utilities Commission |
| CWA | Clean Water Act |
| Diablo Canyon | Diablo Canyon Nuclear Power Plant |
| GenOn | GenOn California South, GP |
| Huntington Beach | Huntington Beach Generating Station |
| IRP | Integrated Resource Planning |
| LADWP | Los Angeles Department of Water and Power |
| MGD | Million gallons per day |
| MW | Megawatt |
| NPDES | National Pollution Discharge Elimination System |
| NRC | United States Nuclear Regulatory Commission |
| Ormond Beach | Ormond Beach Generating Station |
| OTC | Once-through cooling |
| OTC Policy | Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling |
| PG&E | Pacific Gas & Electric Company |
| Redondo Beach | Redondo Beach Generating Station |
| Regional Water Board | Regional Water Quality Control Board |
| SACCWIS | Statewide Advisory Committee on Cooling Water Intake Structures |
| SED | Substitute Environmental Document |
| State Water Board | State Water Resources Control Board |
| TSO | Time Schedule Order |
| U.S. EPA | United States Environmental Protection Agency |

1. Executive Summary

The State Water Resources Control Board (State Water Board) proposes an amendment to the statewide [Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling](#) (Once-Through Cooling or OTC Policy) to extend the compliance dates for Alamitos, Huntington Beach, and Ormond Beach generating stations for three years until December 31, 2023, and Redondo Beach Generating Station for one year until December 31, 2021. Additionally, the State Water Board proposes administrative updates, including revisions regarding retirement of Diablo Canyon Nuclear Power Plant, and non-substantive changes.

The OTC Policy establishes uniform, technology-based standards to implement federal Clean Water Act (CWA) Section 316(b) and reduce the harmful effects associated with cooling water intake structures on marine and estuarine life. The State Water Board adopted the OTC Policy on May 4, 2010, under [Resolution Number \(No.\) 2010-0020](#), and the Office of Administrative Law issued its approval on September 27, 2010. The OTC Policy became effective on October 1, 2010, and was amended in 2012, 2014, 2016, and 2017.

Originally, nineteen power plants located along the California coast withdrawing coastal and estuarine waters for cooling purposes using a single-pass system known as once-through cooling (OTC) were required to comply with the OTC Policy. Cooling water withdrawals cause adverse impacts when larger aquatic organisms, such as fish and mammals, are trapped against a facility's intake screens (impingement) and when smaller marine life, such as larvae and eggs, are killed by being drawn through the cooling system and exposed to high pressures and temperatures (entrainment).

The joint-agency Statewide Advisory Committee on Cooling Water Intake Structures (SACCWIS) was created to advise the State Water Board on the implementation of the OTC Policy, ensuring the compliance schedule takes into account the reliability of California's electricity supply, including local area reliability, statewide grid reliability, and permitting constraints. The SACCWIS includes representatives from the California Energy Commission (CEC), California Public Utilities Commission (CPUC), California Coastal Commission (Coastal Commission), California State Lands Commission, California Air Resources Board, California Independent System Operator (CAISO), and the State Water Board.

The OTC Policy established compliance dates for the nineteen power plants based on the planning and electricity procurement processes of the CEC, CAISO, and CPUC. These compliance dates were scheduled with orderly retirements and planned replacement of capacity aimed at maintaining local and system-wide electrical grid reliability in the State of California. The SACCWIS meets at least annually to review grid reliability studies from CAISO and Los Angeles Department of Water and Power (LADWP) and receive status updates on compliance from coastal power plants. Ten of the original nineteen power plants have permanently retired since adoption of the OTC Policy. The nine remaining power plants are scheduled to comply by specific compliance dates within the next decade, as presented in Table 1 of the OTC Policy.

Several compounding recent events have resulted in concern for system-wide grid reliability starting in the summer of 2021. These events include shifts in peak demand to later in the day and later in the year when solar and wind resources are not as reliably available to meet peak demand; related changes in the method for calculating the qualifying capacity of wind and solar resources resulting in lower qualifying capacity for these resources than previously determined; a significant increase in projected reliance on imported electricity over historical levels; and earlier-than-expected closures of some non-OTC power generating facilities. Starting in the summer of 2021, additional power is likely needed for peak usage on hot days through 2023.

At the March 8, 2019 annual SACCWIS meeting, committee members concluded that further analysis was necessary to determine if delays in the Mesa Loop-In transmission project could cause local grid reliability issues in the Western Los Angeles Basin in 2021. The SACCWIS met again on August 23, 2019, and January 23, 2020, to consider technical studies from CAISO and the CPUC's final decision in a short-term Integrated Resource Planning (IRP) process regarding identified local and system-wide grid reliability concerns. On January 23, 2020, the SACCWIS adopted a report recommending the State Water Board consider extending compliance dates of four power plants to address system-wide grid reliability as follows:

- Alamitos Generating Station (Alamitos) Units 3, 4, and 5 for three years until December 31, 2023;
- Huntington Beach Generating Station (Huntington Beach) Unit 2 for three years until December 31, 2023;
- Ormond Beach Generating Station (Ormond Beach) Units 1 and 2 for three years until December 31, 2023; and,
- Redondo Beach Generating Station (Redondo Beach) Units 5, 6, and 8 for one year until December 31, 2021.

This proposed amendment to the OTC Policy includes these compliance date extensions. These proposed compliance date extensions are in support of and in conjunction with CPUC's final [Decision \(D.\)19-11-016](#), which ordered 3,300 megawatts (MW) of new procurement coming online in a phased schedule by the end of 2023.

Regarding mitigation of impacts to marine life, the OTC Policy includes a provision that existing power plants must implement measures to mitigate the interim impingement and entrainment impacts resulting from cooling water intakes during operation until final compliance with the OTC Policy (Section 2.C(3)). Accordingly, the continued use of OTC waters by Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach will be subject to continued interim mitigation requirements as detailed in [Resolution No. 2015-0057](#) until the power plants come into final compliance.

This amendment also includes proposed administrative compliance date and non-substantive changes to the OTC Policy, including:

- Amending the compliance dates for Diablo Canyon Nuclear Power Plant (Diablo Canyon) Units 1 and 2 by reducing Unit 1 by two months and extending Unit 2 by eight months to November 2, 2024, and August 26, 2025, respectively. These revisions match the expiration date of each unit's United States Nuclear Regulatory Commission (NRC) license. These changes were requested by owner and operator Pacific Gas & Electric Company (PG&E) in a letter dated January 17, 2020. The current compliance date for both units is December 31, 2024. Extension of Unit 2's compliance date by eight months will address a previously-known discrepancy while implementing the terms of an agreement approved by the CPUC to retire Diablo Canyon.
- Amending Section 3.B(5) of the OTC Policy to clarify the amendment process.
- Amending Section 3.B(3) of the OTC Policy updating LADWP's annual grid reliability report due date from December 31 of each year to January 31 of each year.
- Including non-substantive changes to the OTC Policy to improve readability and comply with [California Government Code Section 11546.7](#) requirements for document accessibility.

2. Regulatory Background

2.1. Regulatory Background and Authority

In 1972, Congress enacted the CWA to restore and maintain the chemical, physical, and biological integrity of the nation's waters. CWA Section 316(b) requires that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available (BTA) for minimizing adverse environmental impacts.

In 2001, the U.S. Environmental Protection Agency (U.S. EPA) adopted regulations for new power plants (Phase I) that established a performance standard for cooling water intakes based on closed-cycle wet cooling. In 2004, U.S. EPA published the Phase II rule applicable to existing power plants with a design intake flow greater than or equal to 50 million gallons per day (MGD), which was remanded following legal challenge.

On May 19, 2014, [U.S. EPA finalized regulations covering existing facilities](#) that withdraw at least 2 MGD of cooling water. Facilities select from options designed for reducing impingement to meet BTA requirements. Facilities that withdraw at least 125 MGD are required to conduct studies to investigate site-specific controls to reduce entrainment impacts. New units added to existing facilities are subject to similar requirements established for new facilities. The new regulation was published in the Federal Register on August 15, 2014, and became effective on October 14, 2014 (U.S. EPA, 2014).

The State Water Board is designated as the state water pollution control agency for all purposes under the CWA. The State of California's Porter-Cologne Water Quality Control Act of 1969 authorizes the State Water Board to adopt statewide water quality control plans and policies, which are implemented through National Pollution Discharge Elimination Systems (NPDES) permits and waste discharge requirements. The [OTC](#)

[Policy](#) adopted by the State Water Board on May 4, 2010, under [Resolution No. 2010-0020](#), established requirements for the implementation of Section 316(b) for existing coastal power plants in California, using best professional judgment in determining BTA for cooling water intake structures. The BTA was determined to be closed-cycle wet cooling, or equivalent. The OTC Policy is implemented through NPDES permits, issued pursuant to CWA Section 402, which authorizes the point source discharge of pollutants to navigable waters. The OTC Policy initially assigned the State Water Board as the entity responsible for issuing or modifying NPDES permits for power plants subject to the Policy. A subsequent OTC Policy amendment adopted pursuant to State Water Board [Resolution No. 2013-0018](#) returned responsibility for these NPDES permits to the power plant's corresponding Regional Water Quality Control Board (Regional Water Board).

All facilities subject to the OTC Policy are required to comply with applicable regulatory requirements that are designed to minimize environmental impacts and protect human health, including all state and local permits. If the compliance dates are extended, these OTC facilities would continue to be regulated by applicable air and water quality permits, therefore continuing to comply with requirements imposed in order to minimize environmental impacts and be protective of human health.

Because the OTC Policy requirements are equivalent to, if not more stringent than those contained in applicable U.S. EPA regulations, those requirements continue to govern the existing coastal power plants in California. The U.S. EPA rule explicitly states that it is within the states' authority to implement requirements that are more stringent than the federal requirements.

2.2. Requirements When Amending the OTC Policy

The State Water Board must comply with all state and federal public participation requirements and state laws governing environmental and peer review when amending the [OTC Policy](#).

The State Water Board is the lead agency for this project under the California Environmental Quality Act (CEQA) and is responsible for preparing any required environmental documentation for the amendment. The California Secretary of Resources has certified the State Water Board's water quality planning process as exempt from certain CEQA requirements when adopting plans, policies, and guidelines, including preparation of an initial study, negative declaration, and environmental impact report.

CEQA imposes specific obligations on the State Water Board when it establishes performance standards. Public Resources Code Section 21159 requires that an environmental analysis of the reasonably foreseeable methods of compliance be conducted. The environmental analysis must address the reasonably foreseeable environmental impacts of the methods of compliance, reasonably foreseeable alternatives, and mitigation measures.

In order to comply with CEQA an addendum to the [May 4, 2010 Final Substitute Environmental Documentation](#) (SED, hereafter referred to as the 2010 Final SED) is presented in Section 8 below.

Health and Safety Code Section 57004 requires external scientific peer review of the scientific basis for any rule proposed by any board, office, or department within the California Environmental Protection Agency. However, because this amendment does not establish a new regulatory level, standard or other requirement based on scientific findings, conclusions or assumptions, peer review requirements do not apply.

3. Project Description

The State Water Board is proposing an amendment to the [OTC Policy](#) to extend the compliance dates of four OTC power plants scheduled to retire on December 31, 2020, to address system-wide grid reliability concerns and to bridge the gap as new electrical resources come online through 2023. This amendment is based upon the SACCWIS' analysis of alternatives and recommended alternative in its final report adopted on January 23, 2020. This amendment would extend the compliance dates for Alamitos, Huntington Beach, and Ormond Beach for three years until December 31, 2023, and Redondo Beach for one year until December 31, 2021. If adopted, these changes would be reflected in Section 3.E, Table 1 of the OTC Policy.

Additionally, the State Water Board proposes the following amendments in order to update and improve the readability of the OTC Policy:

- Amending the compliance dates for Diablo Canyon Units 1 and 2 in Section 3.E, Table 1 from December 31, 2024, to match their respective NRC license expiration dates of November 2, 2024, for Unit 1 (two-month reduction) and August 26, 2025, for Unit 2 (eight-month extension);
- Clarifying the most expeditious amendment process in Section 3.B(3) so that owners or operators are able to stay in compliance with current permits while ensuring grid reliability;
- Revising the due date for annual grid reliability reports from LADWP in Section 3.B(5) from December 31 of each year to January 31 of each year, as directed by the State Water Board on April 24, 2014; and,
- Including non-substantive administrative changes to improve readability and comply with [California Government Code Section 11546.7](#) requirements for document accessibility.

Proposed language changes to the OTC Policy are presented in a draft amendment and are shown in red underline for added text and red strikeout for deleted text.

4. Environmental Setting

Section 2.1 of the [2010 Final SED](#) describes the environmental settings of regions with existing OTC power plants. Power plants recommended for compliance date extensions are located in the following regions: Central Coast – Region 3 (Section 2.1.3), Los Angeles – Region 4 (Section 2.1.4), and Santa Ana – Region 8 (Section

2.1.6) (State Water Board, 2010). As illustrated below, Sections 2.2 through 2.6 of the 2010 Final SED describe baseline environmental impacts associated with operation of coastal power plants using once-through cooling.

5. Rationale and Considerations for System-Wide Grid Reliability Compliance Date Extensions

5.1. Grid Reliability

The compliance date extensions are needed to ensure system-wide grid reliability. Starting in the summer of 2021, additional power is likely needed for peak usage on hot days through 2023.

The SACCWIS met on March 8, 2019, concluding in its annual [2019 Final SACCWIS Report](#) that no [OTC Policy](#) compliance date extensions were recommended at that time. However, the SACCWIS identified potential local grid reliability issues in the Western Los Angeles Basin related to delays in the Mesa Loop-In transmission project and determined that further analysis was needed to determine if local grid reliability would be impacted.

On June 20, 2019, the Assigned Commissioner and Administrative Law Judge in the CPUC IRP proceeding ([Rulemaking R.16-02-007](#)) issued a ruling that identified a potential system capacity shortfall of between 2,300 and 4,400 MW in the CAISO Balancing Authority Area beginning in the summer of 2021. The ruling asked interested parties to comment on the analysis leading to the determination of a potential capacity shortfall and to propose solutions to address a shortfall. The analysis found that the shortfall arises from several factors, including shifts in peak demand to later in the day (shifting from 4 p.m. - 6 p.m. to 7 p.m. - 9 p.m.) and later in the year (shifting from August to September) when solar and wind resources are not as reliably available to meet peak demand; changes in the method for calculating the qualifying capacity of wind and solar resources resulting in lower qualifying capacity for these resources than previously determined; uncertainty regarding the level of imports on which California can depend in the future as other states also shift towards using more renewable energy resources; and unanticipated retirements of five non-OTC generating units.

In July 2019, the CAISO completed its [2021 Limited Local Capacity Technical Study](#) in consultation with the CPUC and CEC in advance of the 2021 annual local resource adequacy study cycle. Although the baseline study did not show a need for Alamos to support local grid reliability in 2021, sensitivity studies in the report did show a potential need. CAISO concluded in the report that due to the risk associated with forecast uncertainty for higher demand and at-risk-of-retirement generation capacity, it would be prudent to seek an extension of Alamos' compliance date beyond December 31, 2020. Extending the compliance date for Alamos would also assist with the potential need for additional system-wide capacity starting in 2021. However, actual procurement levels and the need for system capacity depended on forthcoming technical studies and the CPUC's continuing short-term IRP process that began in June 2019.

The SACCWIS convened on August 23, 2019, to consider local grid reliability issues in the Western Los Angeles Basin and emergent system-wide grid reliability issues. Committee members approved the [Local and System-Wide 2021 Grid Reliability Studies](#) report (hereafter referred to as the August 23, 2019 SACCWIS Report), recommending the State Water Board consider extending the compliance date for Alamitos Units 3, 4, and 5 by two or more years to support local and system-wide grid reliability concerns, and some portion of the 2,579 MW available from Huntington Beach, Ormond Beach, and Redondo Beach to address system-wide grid reliability concerns. Without amending the OTC Policy, the compliance date for all four power plants is December 31, 2020. The SACCWIS acknowledged in the August 23, 2019 SACCWIS Report the need to reconvene to discuss a recommendation for system-wide grid reliability following additional research and conclusion of the CPUC's IRP process in [R.16-02-007](#).

After receiving comments, on November 7, 2019, the CPUC adopted [D.19-11-016](#). In the decision, the CPUC directed 3,300 MW of new capacity procured by 2023, with 50% of this procurement due to come online by August 1, 2021; 75% by August 1, 2022; and 100% by August 1, 2023, to address the system-wide capacity shortfall. The decision limits the amount of new natural gas that could be used to meet the procurement requirements. The decision also recommended the following phased extensions to the OTC Policy compliance dates for specific generating units to support the procurement schedule: an extension of Alamitos Units 3, 4, and 5 and Huntington Beach Unit 2 for up to three years, an extension of Redondo Beach Units 5, 6, and 8 for up to two years, and an extension of Ormond Beach Units 1 and 2 for up to one year. These compliance date extensions would provide a "bridge" of roughly 3,740 MW in 2021, roughly 2,230 MW in 2022, and roughly 1,380 MW in 2023 as the 3,300 MW of new procurement comes online by 2023.

A representative from the SACCWIS presented the recommendations and analysis from the [August 23, 2019 SACCWIS Report](#) to the State Water Board at an informational item on November 19, 2019, to apprise the State Water Board members of identified local and system-wide grid reliability concerns. The SACCWIS had stated its intent to reconvene and inform the State Water Board of its final recommendations for compliance date extensions in early 2020.

On January 23, 2020, the SACCWIS convened and approved the [Recommended Compliance Date Extensions for Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach Generating Stations](#) report (hereafter referred to as the January 23, 2020 SACCWIS Report), presenting alternatives and a preferred recommendation to the State Water Board to consider extending the aforementioned four power plants by up to three years to address system-wide grid reliability issues. The alternatives from the approved [January 23, 2020 SACCWIS Report](#) are listed below.

Alternatives from the January 23, 2020 SACCWIS Report

1. **No action:** In this alternative, there would be no changes to the OTC Policy. The four generating stations would stop using ocean water for once-through

cooling on or before December 31, 2020. California may experience black-outs or brown-outs during times when electrical demand is high and imports are unreliable due to similar high demands in other states or balancing authority areas.

- 2. Extend OTC Policy Compliance Dates for All Power Plants for Three Years:** Extend the compliance dates for all of the following available OTC units for three years, until December 31, 2023: Alamitos Units 3, 4, and 5 (1,163 MW); Huntington Beach Unit 2 (215 MW); Redondo Beach Units 5, 6, and 8 (848 MW); and Ormond Beach Units 1 and 2 (1,516 MW).

This alternative would maximize (at roughly 3,740 MW) the existing OTC capacity available to meet reliability needs as 3,300 MW of new capacity comes online pursuant to [D.19-11-016](#). This would also maximize the buffer of available capacity if there are delays in new procurement, at least through the end of 2023.

As discussed in [D.19-11-016](#), some stakeholders argued that Ormond Beach and Redondo Beach in particular have harmful impacts on local communities and extensions of these power plants may interfere with existing plans for redevelopment of the associated properties (see [D.19-11-016](#), page 20).

- 3. Extend OTC Policy Compliance Dates for All Power Plants with Phased Compliance Dates:** Extend the compliance dates for all available OTC units in the following phased approach: Alamitos Units 3, 4, and 5 for three years until December 31, 2023; Huntington Beach Unit 2 for three years until December 31, 2023; Redondo Beach Units 5, 6, and 8 for two years until December 31, 2022; and Ormond Beach Units 1 and 2 for one year until December 31, 2021.

Concluding each extension on December 31st of the proposed year would ensure the availability of capacity for contracting during peak months and could simplify contracting efforts by aligning with resource adequacy requirements and procurement timelines. This alternative would provide a “bridge” of roughly 3,740 MW in 2021, roughly 2,230 MW in 2022, and roughly 1,380 MW in 2023 as the 3,300 MW of new procurement comes online by 2023.

This alternative is recommended by the CPUC in [D.19-11-016](#) and is intended to minimize the harmful impacts on local communities near Ormond Beach and Redondo Beach expressed by stakeholders.

The SACCWIS recognized that Alternative 3 would address system-wide grid reliability needs.

- 4. Extend OTC Policy Compliance Dates for All Power Plants with Phased Compliance Dates Modified from Alternative 3:** Extend the compliance dates for all available OTC units in a phased approach with different compliance dates for Ormond Beach and Redondo Beach than Alternative 3. Extend Alamitos Units 3, 4, and 5 for three years until December 31, 2023; Huntington Beach Unit 2 for three years until December 31, 2023; Ormond Beach Units 1 and 2 for three

years until December 31, 2023; and Redondo Beach Units 5, 6, and 8 for one year until December 31, 2021.

Similar to Alternative 3, this alternative would ensure the availability of capacity for contracting during peak months and could simplify contracting efforts by aligning with resource adequacy requirements and procurement timelines. This alternative would provide a “bridge” of roughly 3,740 MW in 2021 and roughly 2,892 MW in 2022 and 2023 as the 3,300 MW of new procurement comes online by 2023.

This alternative is partly responsive to comments from the city mayors of Redondo Beach and Hermosa Beach to the State Water Board on November 19, 2019. Both cities expressed opposition to an extension of Redondo Beach’s OTC Policy compliance date. Extending Redondo Beach for one year would ensure the availability of that capacity for contracting during 2021.

Additionally, the State Water Board received a comment from the Oxnard City Manager on November 18, 2019, noting support for an extension of Ormond Beach Units 1 and 2 if Oxnard City Council and GenOn California South, GP (GenOn) agree on a plan to perform comprehensive decommissioning, dismantling, and remediation of the site. A representative from the City of Oxnard provided comment at the January 23, 2020 SACCWIS meeting stating that the Oxnard City Council unanimously approved a proposed plan for the decommissioning and remediation of Ormond Beach.

At the January 23, 2020 meeting, the SACCWIS approved Alternative 4 as its preferred recommendation to the State Water Board. In formulating alternatives for the Amendment, the recommendations of the SACCWIS were afforded significant weight due to the unanimous recommendation of the energy agencies in accordance with Section 3.B.(5) of the OTC Policy. The proposed extensions of Alternative 4 are part of a “least regrets” strategy to minimize the risk of an electrical shortage, which is consistent with the CPUC’s responsibility to ensure safe and reliable electric service. The CPUC determines the difficult balance of having too few system resources, which could lead to actual energy shortages or and/or market manipulation opportunities for owners of system resources (leading to risk of additional ratepayer costs) versus having an excess of system resources available, which also could lead to unnecessary ratepayer costs. Therefore, the SACCWIS, informed by the CPUC and the CAISO’s analyses, is fulfilling its responsibility under the OTC Policy by recommending extensions to the compliance dates of the four OTC facilities mentioned above to bridge the gap of the projected electrical shortfall while new procurement comes online to ensure grid reliability through 2023.

In addition to the technical studies, decisions, and reports listed above that were reviewed in developing the SACCWIS alternatives, other factors and new information acquired after preparation of the [January 23, 2020 SACCWIS Report](#) that should be considered are discussed below.

In March 2020, the CPUC updated its recommendation for Ormond Beach from a one-year extension to a three-year extension in D.20-03-028, consistent with SACCWIS' Alternative 4. It should be noted that GenOn filed a joint Petition for Modification with the City of Oxnard asking the CPUC to change D.19-011-016 so that it recommended a three-year extension for Ormond Beach rather than a one-year extension. The CPUC denied the Petition for Modification, finding in D.20-03-028 that it is ultimately not necessary for the CPUC to amend D.19-011-016 to change its recommendation on the Ormond Beach OTC Policy compliance deadline because the SACCWIS had already recommended that the State Water Board accept the three-year extension negotiated by the City of Oxnard with GenOn.

The need to extend the four OTC facilities to address system grid reliability concerns as specified in SACCWIS Alternative 4 above was reconfirmed in a May 27, 2020 joint letter submitted by the CAISO, the CPUC, and the CEC to the State Water Board. The energy agencies reiterated that during proceedings of the CPUC IRP, the CAISO submitted a detailed analysis that suggests an RA deficiency of up to 2,300 MW during the gross peak demand hour in 2021. This projection only takes into account the qualifying capacity of available resources. When taking into account reduced solar generation available to meet peak demand from 4 PM to 9 PM, this deficiency may be as high as 4,400 MW.

Furthermore, the CAISO analysis is based on the average historical capacity of all other available resources, such as wind, hydroelectric, and imports, and it assumes that there will be no transmission or generation outages that exceed the planning reserve margin. This analysis also did not account for other factors that may impact available capacity, such as drought, climate change, increased competition for imports, risk of higher load than 1-in-2-year forecast load, or risk to transmission systems due to wildfires.

Taken together, the above factors support extending the compliance deadlines. As stated in the May 27, 2020 letter, while the CPUC, CEC, and CAISO cannot confirm that all capacities of the four OTC facilities will be dispatched to meet system-wide grid reliability needs in 2021, the capacity of these OTC resources, both individually and combined, is needed to compensate for the band of uncertainty and projected supply shortfalls that have been identified in 2021.

The ongoing coronavirus disease 2019 ("COVID-19") pandemic has increased uncertainty in numerous ways. Potential impacts from COVID-19, including the potential for disruption to manufacture, shipment, or delivery of equipment; labor disruptions from quarantines; travel restrictions; shelter-at-home and social distancing requirements; or other areas as a result of the pandemic, may create new delay risks. Potential delays may also result from other COVID-19-related supply chain issues and/or potential permitting or inspection delays related to agency staff, budget, or procedural constraints.

In response to concerns regarding the effects of COVID-19, the CPUC, CAISO, and CEC assessed potential impacts of COVID-19 on the progress of new resource development as ordered in the CPUC's D.19-11-016. The CPUC established a process to track the procurement and development of the new resources. Currently, the process suggests that most projects needing to be developed by August 1, 2021, are meeting

their development milestones. The CPUC is continuing to monitor development of the new 1,650 MW of new resources targeted to come online by August 1, 2021. However, if the CPUC's tracking of project development indicates a significant risk of delay in project online dates that would put California's electricity reliability at risk, the CPUC, CAISO, and CEC may return to the State Water Board in 2021 to request an additional one-year extension of OTC Policy compliance dates for units that are scheduled to comply at the end of 2021. The CPUC, CAISO, and CEC have communicated that they will not make such a recommendation unless an extension is absolutely necessary for grid reliability. Therefore, in order to ensure transparency, the energy agencies will provide quarterly reports to the State Water Board providing the status of all projects that are anticipated to be online by August 1, 2021, their targeted online dates, and any identified risk of delays.

The State Water Board will assess additional recommendations pursuant to existing provisions in the OTC Policy, including, if necessary, compliance date suspension options in Section 2.B(2).

5.2. Frequency of Power Plant Operation

System-wide grid reliability requires that power supply and demand must be equal at any given moment so as to avoid placing unnecessary stresses on the electrical transmission system. To effectively maintain balance within a Balancing Authority Area, the responsible balancing authority continuously forecasts, monitors, and adjusts electrical supply to meet demand. Balancing supply and demand can be achieved through several processes, one of which is the dispatch of generation assets by the responsible balancing authority.

As power demand is variable and production is tied to an array of factors, some types of electrical generation assets are dispatched to serve load more frequently than others, while other generation assets are generally reserved for peak demand, or contingency, periods. The power plants reserved for peak demand periods are colloquially referred to as "peaker plants" or "peakers." To demonstrate an example of the role peakers play in maintaining grid reliability, energy usage typically spikes during heat waves, when air-conditioning usage is widespread. These periods often require the dispatching of peakers to serve load. Because conventional generators often take time to reach their allocated output and serve load, it is sometimes necessary to dispatch multiple units in a similar time frame to meet demand. In the context of OTC facilities, this means that one OTC facility generally cannot produce as much energy as multiple OTC generators in a short time frame, thus necessitating the need to extend the compliance dates for the four OTC facilities included in the Amendment to address grid reliability concerns starting in 2021. Peakers also play a role in maintaining grid reliability during emergency scenarios, such as natural disasters that damage, destroy, or otherwise require the shutdown of electrical generation or transmission infrastructure.

Since 2016, Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach power plants have primarily been used like peakers and have operated on average over the last three years at 4.8% of capacity. If the compliance date for Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach are extended, the power plants would

continue to primarily be used like peakers and would be expected to run at or below their current operating capacity.

Additionally, the dispatch order of generation resources is generally driven by marginal costs of operation, where resources with lower marginal costs are typically dispatched before those with higher costs. The age of older OTC units means they have higher marginal costs of operation. Since resources are generally dispatched when demand drives energy prices above those resources' costs, newer and more efficient existing resources are generally used before resorting to using the OTC power plants. As replacement procurement comes online over the next three years, the OTC units will likely be used less frequently.

If future IRP processes by the CPUC show that the OTC units are no longer necessary to ensure system-wide grid reliability during the approved extended compliance date periods, owners and operators could elect to retire the units early.

5.3. Impacts to Marine Life

Sections 2.2 and 2.3 of the [2010 Final SED](#) established baseline impacts to marine life through analysis of impingement and entrainment studies conducted from 2000-2005 at eighteen of the nineteen coastal OTC power plants. The consensus among regulatory agencies at both the state and federal levels is that OTC systems contribute to the degradation of aquatic life in their respective ecosystems. Installation of reasonably foreseeable methods of compliance were found to reduce either impingement or entrainment impacts by 90% to 97%, depending on the technology selected.

The [2010 Final SED](#) showed that OTC units among the nineteen power plants operated at varying efficiencies (volume of cooling water in millions of gallons required per megawatt-hour generated), depending on the type of boiler system and general age of the unit. For example, combined-cycle units were found to be up to 50% more efficient than steam boilers. Alamitos Units 3, 4, and 5, Huntington Beach Unit 2, Ormond Beach Units 1 and 2, and Redondo Beach Units 5, 6, and 8 are all steam boilers, with Redondo Beach Units 5 and 6 being the oldest at 1954 and 1957, respectively. Of the four power plants, Redondo Beach is the least efficient, requiring more OTC intake water to produce a megawatt-hour than the other power plants, and resulting in potential impacts to marine life (Figure 11 in the 2010 Final SED).

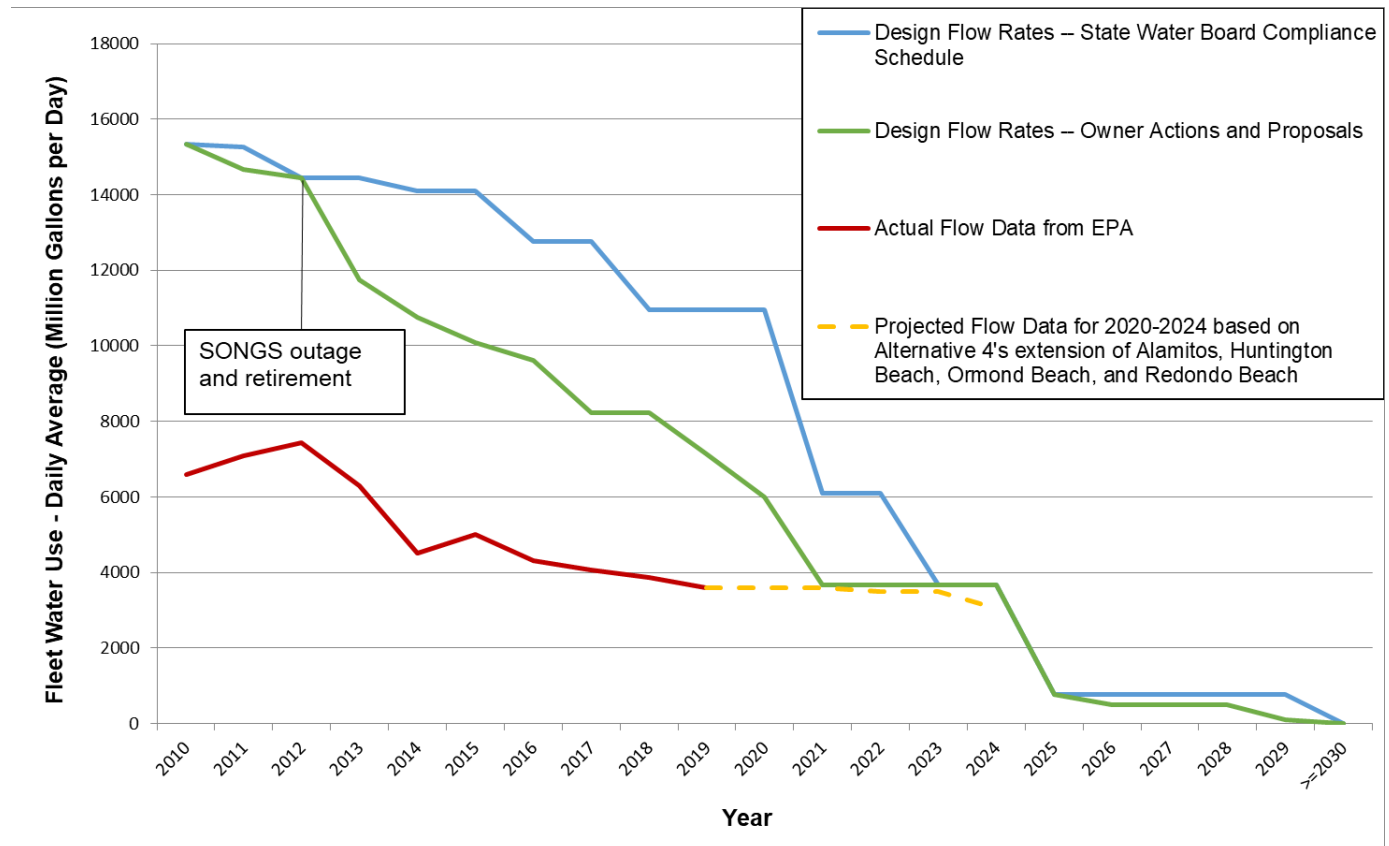
Since adoption of the OTC Policy, Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach have operated at decreasing capacities, with average annual capacity factors decreasing from 7.7% in 2012 to 4.4% in 2018. If extended, these four OTC power plants are expected to be operated at or below annual average capacity factors from 2018, thereby minimizing impingement and entrainment impacts.

As shown in Figure 1, if the compliance dates for Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach are extended as recommended in the SACCWIS' Alternative 4 and the plants operate at current capacity, the daily average OTC water use on a statewide scale is projected to be at or below design flow rates from the

original OTC Policy compliance schedule. Projected flow rates for the four power plants are based on the average daily flow rates for 2019.

Based on the discussion above, impacts to marine life are expected to be at or below the baseline established in the [2010 Final SED](#) if the compliance dates for Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach are extended for up to 3 years.

Figure 1: Historic and Projected OTC Fleet Water Use – Daily Average Flow Rate in Million Gallons per Day



5.4. Mitigation of Impingement and Entrainment Impacts

The OTC Policy includes a provision that existing power plants must implement measures to mitigate the interim impingement and entrainment impacts resulting from cooling water intakes during operation commencing October 1, 2015, and continuing up to and until the owner or operator achieves final compliance. Section 2.C(3) of the [OTC Policy](#) provides options for owners or operators to demonstrate compliance with the interim mitigation requirements.

AES, owner and operator of Alamitos, Huntington Beach, and Redondo Beach, elected to comply with the interim mitigation requirements through Section 2.C(3)(b) by providing funding to the Ocean Protection Council or California Coastal Conservancy to fund appropriate mitigation projects. After purchasing Ormond Beach from NRG Energy, Inc. in 2018, GenOn elected to continue complying with interim mitigation

requirements for the power plant through Section 2.C(3)(b). Accordingly, the continued use of OTC waters from Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach will be subject to continued interim mitigation requirements as detailed in [Resolution No. 2015-0057](#) up to and until the power plants come into compliance with the OTC Policy.

Since October 1, 2015, \$3.52 million in interim mitigation funds have been paid by the owners and operators of Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach to fund appropriate mitigation projects. Payments are calculated in determinations prepared by State Water Board staff on an annual basis, from October 1 through September 30 of a given year. The calculations are based on the total volume of intake water and pounds of marine life impinged in accordance with [Resolution No. 2015-0057](#). Since use of the aforementioned power plants is expected to be at or below recent levels, the interim mitigation requirements currently in place are sufficient to offset impingement and entrainment impacts incurred during the extended operation of the power plants, if approved. Additional mitigation would be above and beyond what was determined as appropriate in [Resolution No. 2015-0057](#), implementing the findings of the OTC Policy.

5.5. Land Use Impacts

The [2010 Final SED](#) concluded that no land use impacts were identified regarding OTC power plant compliance with requirements of the OTC Policy. This conclusion was based on the 2008 report by Tetra Tech, which evaluated the technical and logistical feasibility of retrofitting 15 of the State's fossil-fueled coastal OTC power plants with closed-cycle wet cooling systems (pages 104 and G-229, 2010 Final SED). Revisions to OTC Policy compliance dates based upon non-marine impacts to local communities, including land use concerns and environmental justice, may be considered but are largely beyond the scope of the State Water Board's authority under Clean Water Act section 316(b) and the OTC Policy.

Power generation is expected to be ongoing at both the Alamitos and Huntington Beach sites. To date, AES has retired Alamitos Units 1, 2, and 6; Huntington Beach Unit 1, and Redondo Beach Unit 7 to enable the new combined cycle gas turbines at Alamitos and Huntington Beach to be placed in service (SACCWIS, 2019a). Power generation is expected to cease at the Ormond Beach and Redondo Beach sites after the power plants retire. Post-retirement community considerations for the Ormond Beach and Redondo Beach sites are discussed below.

Ormond Beach

The Ormond Beach facility is located within City of Oxnard in Ventura County, where many persons of color and low-income populations work in high outdoor exposure agricultural areas. The facility is situated within an area that is designated as a disadvantaged community on the Office of Environmental Health and Hazard Assessment's CalEnviroScreen 3.0 Map (OEHHA, 2018). According to the CalEnviroScreen, the facility is located in a census tract considered by the State of California to have a higher pollution burden than 98% of other areas in the state.

Public comments were heard at the State Water Board meeting on November 19, 2019, following the SACCWIS's presentation on the [August 23, 2019 SACCWIS Report](#). A representative from GenOn informed the State Water Board that GenOn and the City Manager of Oxnard were in negotiations regarding demolition and remediation plans in [Agreement Number \(No.\) A-8207: Agreement for Demolition and Remediation of the Ormond Beach Generating Station](#) for consideration by the Oxnard City Council.

[Agreement No. A-8207](#) establishes a timeline and financial plan for the demolition and remediation of Ormond Beach, funded by GenOn up to \$25 million, if the State Water Board approves a compliance date extension through 2023. On January 21, 2020, the [Oxnard City Council](#) unanimously approved and authorized the Mayor to execute [Agreement No. A-8207](#) (City Council of Oxnard Meeting Minutes, 2020). A representative of the Oxnard City Council spoke to this approved agreement at the January 23, 2020 SACCWIS meeting. The representative shared the City Council's support for SACCWIS Alternative 4, which would extend the compliance date of Ormond Beach Units 1 and 2 for three years until December 31, 2023.

Additionally, a 3-year extension of Ormond Beach's compliance date would be most beneficial to Oxnard, as section 3.a of Agreement No. A-8207 indicates that GenOn commits to completing demolition and remediation of the Ormond Beach site by December 31, 2025 if the power plant's compliance date is extended until 2023 and Ormond Beach is the subject of resource adequacy or other market-based contracts for all or any portions of calendar years 2021, 2022, and 2023. If Ormond Beach's compliance date is extended for shorter periods of time, GenOn will provide less funding towards demolition and remediation (since the power plant would not be operating as long) and post-retirement work would be completed one to two years later.

GenOn filed a joint Petition for Modification with the City of Oxnard asking the CPUC to change D.19-11-016 so that it recommended a three-year extension for Ormond Beach rather than a one-year extension. The CPUC denied the Petition for Modification, finding in D.20-03-028 that since the SACCWIS had already recommended the three-year extension for Ormond Beach to the State Water Board that was negotiated by the City of Oxnard and GenOn, it was not necessary to amend D.19-11-016 to change its recommendation on the Ormond Beach compliance date extension. Furthermore, the CPUC updated its recommendation for Ormond Beach from a one-year extension to a three-year extension in D.20-03-028, consistent with SACCWIS' Alternative 4.

The State Water Board acknowledges that disadvantaged communities often disproportionately experience environmental impacts and is committed to taking environmental justice concerns into account. For more information on the Water Board's environmental justice program, please see https://www.waterboards.ca.gov/water_issues/programs/outreach/education/justice.shtml.

Redondo Beach

Several public comments were heard at both the November 19, 2019 State Water Board meeting and the January 23, 2020 SACCWIS meeting regarding extension of the compliance date for Redondo Beach Units 5, 6, and 8.

Starting in 2018, AES entered into negotiations for the sale of the Redondo Beach property to developer SLH Fund, LLC (SLH). As stated by both the owner of SLH and AES, an agreement is in place for AES to lease back the property and continue operating Redondo Beach if the power plant's compliance date is extended by the State Water Board. In its comment letter to the SACCWIS for the January 23, 2020 meeting, SLH supported SACCWIS Alternative 3 to extend the compliance date for Redondo Beach for two years until December 31, 2022. In its May 18, 2020 comment letter to the State Water Board on the proposed amendment, SLH revised its support to be in favor of a three-year extension of Redondo Beach through December 31, 2023. SLH stated that during any extension of the power plant's compliance date, AES would provide it access to unused portions of the site for remediation and continuing operation of the power plant would not delay redevelopment efforts. Additionally, SLH stated that any extension of the compliance date would provide additional funding towards site clean-up.

The City of Redondo Beach is working with SLH to purchase approximately half of the Redondo Beach property for wetland restoration and developing parkland for public use, as stated in four comment letters. Last year, the City of Redondo Beach received a grant from the California Natural Resources Agency for \$4.8 million for the partial purchase of 15 acres of the Redondo Beach property, including historical wetlands, for restoration as part of a regional park. The California Natural Resources Agency confirmed that if the power plant's compliance date is extended beyond December 31, 2020, this grant funding will be retained by the City of Redondo Beach.

In 2015, the Coastal Commission confirmed jurisdictional wetlands exist in the former tank basin area on the Redondo Beach property, totaling 5.93 acres. In 2017 and 2018, AES submitted applications for and received three emergency coastal development permits to dewater the former tank basin and was denied a fourth. The pumping, or dewatering, occurred due to safety concerns regarding water near utility and electrical lines. Sometime before May 2020, AES stopped using the groundwater pumping system and installed portable sump pumps in utility vaults. The pumping occurred due to safety concerns regarding water near utility and electrical lines.

The Coastal Commission issued a Notice of Violation to AES and SLH on May 26, 2020, for illegally dewatering the wetlands through the unpermitted installation and use of groundwater pumps in the former tank basin area and the installation and use of new portable pumps to dewater utility vaults that may be hydrologically connected to the wetlands in the former tank basin. To resolve the violation, AES was asked to complete the following: cease any unpermitted dewatering of the former tank basin area; submit by June 30, 2020, a complete Coastal Development Permit application to the City of Redondo Beach seeking authorization to remove the dewatering system in the former tank basin and either retain or remove the vault pumping system; and submit to the City of Redondo Beach and the Coastal

Commission by June 30, 2020, a response to information requests in the Notice of Violation related to the vault pumping system.

According to information provided by the Coastal Commission, a member agency of the SACCWIS, the Coastal Commission received AES' Coastal Development Permit application on June 30, 2020, providing alternatives and seeking authorization to permanently retire or remove the groundwater dewatering system from the former tank basin area. If the compliance schedule extension is granted, neither AES or SLH are absolved from complying with existing state and local permits, laws, and regulations.

The NOV issued by the Coastal Commission and this proposed Amendment do not impede the State Water Board or the Coastal Commission from acting according to their individual responsibilities and legal requirements. The Coastal Commission will continue to its role in ensuring that fulfills the other requirements of the NOV so that the facility is operated in compliance with all applicable laws and regulations. Additionally, it should be noted that any litigation between the Coastal Commission and AES will proceed separately from regulation of AES pursuant to the proposed OTC Policy amendment and the State Water Board's authority.

5.6. Air Quality Impacts

Extending the operation of the four power plants will extend the existing air, noise, and aesthetic impacts; however, impacts are expected to remain less than the baseline established in the [2010 Final SED](#). Noise and aesthetic impacts related to compliance with the OTC Policy were determined to be less than significant in the [2010 Final SED](#). The State Water Board found in the [2010 Final SED](#) that it could not accurately assess air quality impacts related to compliance with the OTC Policy because it was difficult to estimate the method of compliance owners and operators would select for each power plant.

To date, most OTC owners and operators have elected to comply with the OTC Policy by retiring the OTC units, except for Moss Landing Power Plant, which is complying through Track 2 by implementing mechanical upgrades and seasonal operation to reduce OTC intake flow rates equivalent to what would be achieved through Track 1 compliance (Section 2.A(2) of the [OTC Policy](#)). Some OTC sites have been repowered with new, more efficient combined-cycle gas turbines to replace retired capacity. Due to the combination of OTC unit retirements in a phased schedule and replacement of capacity with newer, more efficient resources that produce fewer emissions, as was investigated as a potential compliance scenario in the [2010 Final SED](#), implementation of the OTC Policy is expected to show a modest reduction of existing air quality impacts caused by operation of OTC units.

All operating power plants producing emissions are permitted to run by local air quality management districts, which require scheduled monitoring and reporting from the operators to ensure compliance and public safety. If compliance dates are extended, the OTC power plants would likely be used as peakers. Air impacts are expected to be at or below recent levels, which are typically within permitted limits.

There are environmental justice concerns regarding pollution from plants into the air basin and the potential impacts this may have on human health. The Air Toxics Hot Spots Information and Assessment Act (see California Health and Safety Code Section 44360(b)(2)) requires facilities to do a health risk analysis every four years to determine whether citizens will be exposed to any harmful pollutants. Facilities will additionally conduct toxic emissions evaluations as required by the South Coast Air Quality Management District. If there is a visible pollution event, there are guidelines and permit regulations in place to account for these emissions. Ormond Beach is currently in compliance with all permits and regulations and has not seen any violations or exceedances of their air quality permits for the past two years. Redondo Beach is also currently in compliance with all permits, local, regional, and state regulations that were developed to be protective of human health including ambient air quality standards and Title V. The latest breakdown and/or deviation at Redondo Beach causing excess emissions was the breakdown of a fan feeding oxygen to Unit No. 6 resulting in visible emissions (black smoke) that occurred on July 25, 2019; the breakdown was rectified, and the event stopped in 8 minutes. This black smoke event did not result in an NOV and Redondo Beach has not received any NOVs for excess emissions in the past 10 years.

The State Water Board may consider these pollution issues; however, the State Water Board is primarily responsible for implementing Section 316(b) of the Clean Water Act while taking into account local area and system-wide grid reliability in California. The State Water Board relies upon the energy agencies within the SACCWIS to inform recommendations on grid reliability and extensions of compliance dates for existing OTC facilities. The SACCWIS recommendations were informed by CPUC proceedings to avoid forecasted shortfalls in energy supplies. Revisions to OTC Policy compliance dates based upon non-marine impacts to local communities, including air quality, may be considered but are largely beyond the scope of the State Water Board's authority under Clean Water Act section 316(b) and the OTC Policy. Additionally, continued operation of Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach is not expected to result in air impacts greater than those reported as baseline air emissions in Section 2.6 of the 2010 Final SED.

5.7. OTC Policy Amendment Preferred Approach

The State Water Board proposes an amendment to the OTC Policy consistent with the SACCWIS' Alternative 4, extending the compliance dates for Alamitos Units 3, 4, and 5, Huntington Beach Unit 2, and Ormond Beach Units 1 and 2 for three years until December 31, 2023, and Redondo Beach Units 5, 6, and 8 for one year until December 31, 2021. This amendment balances the need for grid reliability with marine life, land use, and air quality concerns.

Other Regulatory and Permitting Requirements

An amendment of the OTC Policy with compliance date extensions will necessitate changes to associated NPDES permits, time schedule orders (TSO), total maximum

daily loads, if applicable, and air permits. An up-to-date description of air permit needs is included in the [January 23, 2020 SACCWIS Report](#).

Alamitos, Redondo Beach, and Ormond Beach are located within the Los Angeles Regional Water Board's jurisdiction. Huntington Beach is located within the Santa Ana Regional Water Board's jurisdiction. The State Water Board is coordinating with Regional Water Boards on developing amendments to the OTC Policy and regional regulatory documents. The Los Angeles Regional Water Board intends to consider reopening and amending the TSO, NPDES permit, and San Gabriel River Metals Total Maximum Daily Load for Alamitos; the TSO and NPDES permit for Redondo Beach; and the NPDES permit for Ormond Beach. Additionally, the Santa Ana Regional Water Board may need to consider reopening and amending the NPDES permit for Huntington Beach.

6. Administrative Compliance Updates and Non-Substantive Changes

6.1. Administrative Compliance Date Changes

On January 23, 2020, the State Water Board received a letter from PG&E requesting that the State Water Board amend the compliance dates for Diablo Canyon Units 1 and 2 by reducing Unit 1 by two months and extending Unit 2 by eight months to match each unit's respective NRC license expiration date. The current compliance date in the OTC Policy for both Diablo Canyon units is December 31, 2024. The NRC license expiration date is November 2, 2024, for Unit 1 and August 26, 2025, for Unit 2. It is PG&E's preference to operate both units up to the end of the current NRC licenses (PG&E, 2020).

In 2018, PG&E formally withdrew its applications to renew the NRC licenses for Units 1 and 2 in accordance with CPUC [D.18-01-022](#), which approved the retirement of Diablo Canyon for resource planning purposes. Unit 1 will cease operations by November 2, 2024. If Unit 2's OTC Policy compliance date is not amended to conform with its NRC license expiration date, it will not operate beyond December 31, 2024.

PG&E requests amending the compliance dates for Diablo Canyon Units 1 and 2 to conform with the current NRC license expiration dates for each unit for the following reasons:

- **Discrepancy acknowledged during OTC Policy development in 2010:** During development of the OTC Policy and the adoption process, PG&E identified the discrepancy between the NRC license expiration dates for both units and the compliance date listed in Section 3.E, Table 1 of the OTC Policy. The State Water Board acknowledged the discrepancy and said that compliance dates could be updated to match the NRC license expiration dates in a future amendment.
- **CPUC approval of Diablo Canyon retirement:** In 2016, PG&E submitted a [Joint Proposal to Retire Diablo Canyon Nuclear Power Plant at Expiration of the Current Operating Licenses and Replace It With a Portfolio of GHG Free Resources](#) with six other parties to the CPUC for consideration of a plan to retire Diablo Canyon and replace the capacity with preferred greenhouse gas-free

resources (PG&E, 2016). In the proposal, PG&E planned to operate Diablo Canyon until the expiration of the NRC licenses for Units 1 and 2, on November 2, 2024, and August 26, 2025, respectively. In Section 6.2 of the proposal, PG&E stated that in order to clarify the authority of Diablo Canyon Unit 2 to operate beyond December 31, 2024, it would ask the State Water Board for an amendment to the OTC Policy to conform the compliance dates for Diablo Canyon Units 1 and 2 to the actual expiration of the respective NRC operating licenses (PG&E, 2016). On January 11, 2018, the CPUC adopted [D.18-01-022](#), which approved the retirement of Diablo Canyon Unit 1 by 2024 and Unit 2 by 2025 (CPUC, 2018).

- **Baseline support for grid reliability:** Diablo Canyon’s approximately 2,200 MW capacity of greenhouse gas-free energy are a benefit to the state’s ongoing effort to combat global climate change. Extension of Unit 2 to its NRC license expiration date of August 26, 2025, would provide eight additional months of greenhouse gas-free power as new preferred resources are constructed and come online in accordance with the procurement ordered by the CPUC in [D.19-11-016](#).
- **Continued interim mitigation requirements:** Section 2.C.(3) of the OTC Policy requires that existing power plants must implement measures to mitigate the interim impingement and entrainment impacts resulting from using OTC technology during operation prior to final compliance with the OTC Policy. If Unit 2’s compliance date is amended to August 26, 2025, impacts to marine life from impingement and entrainment would be offset in accordance with [Resolution No. 2015-0057](#).

The State Water Board considers the proposed amendment to the compliance dates of Diablo Canyon Units 1 and 2 to conform with current NRC license expiration dates of November 2, 2024, for Unit 1 and August 26, 2025, for Unit 2 to be administrative. During development of the OTC Policy, PG&E noted the discrepancy of the OTC Policy compliance date not matching the NRC license expiration dates of Units 1 and 2. Compliance with the OTC Policy by the nuclear-fueled power plants was the subject of a review committee established to oversee special studies investigating compliance alternatives for the two plants. Following PG&E’s decision to not pursue renewal of the NRC licenses for Units 1 and 2 beyond 2024 and 2025, and establishing retirement as the chosen compliance option, they decided to request an amendment to conform the compliance dates. Operation of Unit 2 to the end of its current NRC license is supported by CPUC [D.18-01-022](#) and plays an important role in ensuring effective implementation of PG&E’s retirement plan for Diablo Canyon.

Amending Unit 2’s compliance date from December 31, 2024, to August 26, 2025, will provide an additional eight months of approximately 1,100 MW of capacity with zero-carbon emissions. Although Diablo Canyon uses large volumes of water compared to the other OTC power plants, impingement impacts are relatively low due to the environmental setting and Diablo Canyon’s intake structure design. With the retirement of Unit 1 by November 2, 2024, the volume of intake water and associated entrainment impacts of Unit 2 if extended to August 26, 2025, are expected to be approximately half

of current use. Therefore, operating Diablo Canyon Unit 2 for an additional eight months is expected to be at or below baseline impacts to marine life and other environmental impacts established in the [2010 Final SED](#).

Considerations

1. **No action:** If the OTC Policy compliance date for Units 1 and 2 is unchanged, Unit 1 will cease operations early by November 2, 2024, on the date of its NRC license expiration date and Unit 2 will cease operations by December 31, 2024.
2. **Conform the compliance dates with NRC license expiration dates:** Table 1 of the OTC Policy will be amended, changing the compliance date of Diablo Canyon Units 1 and 2 from December 31, 2024, to match the NRC license expiration dates of November 2, 2024, for Unit 1 and August 26, 2025, for Unit 2. Both units will cease operations by the dates planned for by PG&E and in full compliance with established permits and operating licenses.

OTC Policy Amendment Preferred Approach

The State Water Board proposes to amend the OTC Policy consistent with Consideration 2 to reduce the compliance date of Diablo Canyon Unit 1 by two months to November 2, 2024 and extend the compliance date of Unit 2 by eight months to November 2, 2024. This change would conform the compliance dates of both units with the NRC license expiration dates and would allow operation of both units to the end of the licenses. Furthermore, this is in line with the CPUC's [D.18-01-022](#) and supports future procurement processes by providing certainty for approximately 1,100 MW of zero-carbon energy from Unit 2 until August 26, 2025.

6.2. Clarifying the Extension Process

Section 3.B(5) of the [OTC Policy](#) states that the State Water Board shall consider the SACCWIS' recommendations for compliance date extensions and direct staff to make modifications to the OTC Policy, if appropriate, for the State Water Board member's consideration. In practice, this would require multiple public meetings rather than a single public hearing and adoption meeting to consider a proposed amendment to the OTC Policy. Owners and operators of OTC power plants facing compliance date extensions require certainty to balance their compliance plans, permitting, and operation needs with the need for continued operation of the OTC units to support grid reliability. A shorter process for developing proposed amendments and bringing them to the State Water Board for consideration best accomplishes this.

In order to expeditiously address compliance date revisions recommended by the SACCWIS, State Water Board staff has used information items and briefings to apprise Board Members of the SACCWIS recommendations while simultaneously drafting an amendment for Board consideration as soon as practicable.

OTC Policy Amendment Preferred Approach

The State Water Board proposes to amend Section 3.B(5) to state that the State Water Board will consider the SACCWIS' recommendations and consider modifications to the

OTC Policy, if appropriate. This clarifying language reflects the most expeditious process in developing amendments for the State Water Board's consideration.

6.3. LADWP Reporting Process Update

Section 3.B(3) of the [OTC Policy](#) requires the CAISO and LADWP to each submit to the SACCWIS, by December 31 of each calendar year, a grid reliability study for their respective jurisdictions that has been developed pursuant to a public process and approved by their governing bodies. These grid reliability studies are reviewed by the SACCWIS and used as sources in the SACCWIS' annual update to the State Water Board on the implementation of the OTC Policy and grid reliability.

On March 27, 2014, LADWP requested that the due date for the annual grid reliability report be changed from December 31 of each year to January 31 of each year. The primary reason for its request to change the date is that two reports, the Ten-Year Transmission Assessment and the Integrated Resources Plan, that the annual grid reliability report relies upon are not completed and finalized until December 31 of each year. Therefore, LADWP requested an extension of the annual report due date by one month to January 31 of each year in order to produce the annual grid reliability report and bring it to the LADWP Board of Water and Power Commissioners for approval before submittal to the SACCWIS.

In order to effectuate the requested change in a timely manner, the Executive Director of the State Water Board, in a letter dated April 24, 2014, directed LADWP to submit its annual grid reliability report by January 31 of each year pursuant to a Water Code Section 13383 letter order.

The proposed revision is administrative and is meant to conform the OTC Policy with the approved change in due date of LADWP's annual grid reliability reports. CAISO's annual grid reliability reports due date will remain unchanged.

OTC Policy Amendment Preferred Approach

The State Water Board proposes to amend Section 3.B(3) of the OTC Policy to update LADWP's annual grid reliability report due date from December 31 of each year to January 31 of each year as directed in the State Water Board's April 24, 2014 letter.

6.4. Non-Substantive Administrative Changes

The State Water Board proposes an amendment to the OTC Policy with non-substantive administrative updates in the OTC Policy to improve readability and comply with [California Government Code Section 11546.7](#) accessibility requirements.

7. Analysis of Alternatives

This section presents alternatives of the proposed amendments to the OTC Policy.

- **Alternative 1** – No action. The four generating stations would stop using ocean water for once-through cooling on or before December 21, 2020. California may experience black-outs or brown-outs during times when electrical demand is high and imports are unreliable due to similar high demands in other states or

balancing authority areas. None of the administrative compliance updates or non-substantive changes discussed above would be made to the OTC Policy.

- **Alternative 2** – The OTC Policy would be updated with compliance date extensions to support system-wide grid reliability in accordance with SACCWIS Alternative 3 and CPUC [D.19-11-016](#). The compliance dates for Alamitos and Huntington Beach would be extended for three years until December 31, 2023; Redondo Beach would be extended for two years until December 31, 2022; and Ormond Beach would be extended for one year until December 31, 2021. The administrative compliance updates and non-substantive changes discussed above would not be made to the OTC Policy.
- **Alternative 3** – The OTC Policy would be updated with compliance date extensions to support system-wide grid reliability in accordance with SACCWIS Alternative 4. The compliance dates for Alamitos, Huntington Beach, and Ormond Beach would be extended for three years until December 31, 2023, and Redondo Beach would be extended for one year until December 31, 2021. The administrative compliance updates and non-substantive changes discussed above would not be made to the OTC Policy.
- **Alternative 4** – The OTC Policy would be updated with compliance date extensions to support system-wide grid reliability in accordance with SACCWIS Alternative 3 and CPUC [D.19-11-016](#). The compliance dates for Alamitos and Huntington Beach would be extended for three years until December 31, 2023; Redondo Beach would be extended for two years until December 31, 2022; and Ormond Beach would be extended for one year until December 31, 2021.

The administrative compliance updates and non-substantive changes discussed in Section 6 would be made in the OTC Policy. The compliance dates for Diablo Canyon Units 1 and 2 would be amended from December 31, 2024, to conform with the NRC license expiration dates of November 2, 2024, for Unit 1 (two-month reduction) and August 26, 2025, for Unit 2 (eight-month extension). Changes would be made to Sections 3.B(3) and 3.B(5) with clarified language and the approved due date for LADWP annual grid reliability reports. Non-substantive changes to improve readability and comply with [California Government Code Section 11546.7](#) document accessibility requirements would be made to the OTC Policy.

- **Alternative 5** – The OTC Policy would be updated with compliance date extensions to support system-wide grid reliability in accordance with SACCWIS Alternative 4. The compliance dates for Alamitos, Huntington Beach, and Ormond Beach would be extended for three years until December 31, 2023, and Redondo Beach would be extended for one year until December 31, 2021.

The administrative compliance updates and non-substantive changes discussed in Section 6 would be made in the OTC Policy. The compliance dates for Diablo Canyon Units 1 and 2 would be amended from December 31, 2024, to conform with the NRC license expiration dates of November 2, 2024, for Unit 1 (two-

month reduction) and August 26, 2025, for Unit 2 (eight-month extension). Changes would be made to Sections 3.B(3) and 3.B(5) with clarified language and the approved due date for LADWP annual grid reliability reports. Non-substantive changes to improve readability and comply with [California Government Code Section 11546.7](#) document accessibility requirements would be made to the OTC Policy.

OTC Policy Amendment Preferred Alternative

The State Water Board proposes an amendment to the OTC Policy consistent with Alternative 5. Alternative 5 would extend the compliance dates for Alamitos, Huntington Beach, and Ormond Beach for three years until December 31, 2023, and would extend Redondo Beach for one year until December 31, 2021. Diablo Canyon Unit 1's compliance date would be shortened to November 2, 2024, and Unit 2's compliance date would be extended to August 26, 2025, matching the NRC license expiration date of each unit. Additionally, all administrative compliance updates and non-substantive changes discussed above would be made to the OTC Policy. The need to extend the four OTC facilities to address system grid reliability concerns as specified in SACCWIS Alternative 4 was reconfirmed in a May 27, 2020 joint letter submitted by the CAISO, the CPUC, and the CEC to the State Water Board. In accordance with Section 3.B.(5) of the OTC Policy, the State Water Board shall afford significant weight to the unanimous recommendation of the energy agencies.

8. Addendum to the 2010 Final SED

Title 23, California Code of Regulations, Sections 3720-3782 requires the State Water Board to evaluate potential environmental impacts that may be caused by complying with the amendment with one or more of the reasonably foreseeable compliance methods. The [2010 Final SED](#) for the OTC Policy describes and evaluates potential environmental impacts associated with installation of better technologies, closed-cycle wet cooling or equivalent, and potential mitigation measures for associated impacts. An addendum to a previously certified environmental impact report or equivalent such as a substitute environmental document is appropriate if some changes or additions are necessary but none of the conditions requiring preparation of a subsequent environmental document have occurred.

Section 5.1 above describes new developments concerning the need for continued operation of Alamitos, Huntington Beach, Ormond Beach and Redondo Beach to ensure grid reliability. This includes the CPUC proceeding reflecting potential shortfalls due to shifts in demand and unexpected retirements of other power generation. Section 6.1 describes changed circumstances relative to the original OTC Policy with regard to plans for retirement of Diablo Canyon. This additional information provides updates and clarifications to the 2010 Final SED.

Following is a summary of the major findings of the 2010 Final SED.

Water Quality and Biological Resources

The [2010 Final SED](#) concluded that less than significant (where the effect will not be significant and mitigation is not required) to no environmental impacts would result from implementation of the evaluated reasonably foreseeable methods of compliance with the OTC Policy. The State Water Board evaluated potential changes in effluent limitations in the case of installation of cooling towers to comply with the OTC Policy. Water quality impacts were considered less than significant for Alamitos and two others out of the nineteen OTC power plants. Although these three power plants could face difficulty meeting effluent limitations as a retrofitted facility, the State Water Board did not consider these impacts significant because each power plant is already unlikely to meet effluent limitations; compliance with the OTC Policy does not cause the impact. Complying with the OTC Policy was determined to result in no impacts to water quality beyond the established baseline at the other sixteen OTC power plants.

AES and GenOn intend to retire all OTC units at Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach by the compliance dates adopted by the State Water Board, which will significantly reduce OTC-related impacts to marine life and water quality from the baseline conditions established in the [2010 Final SED](#) (SWB, 2018 and GenOn, 2019).

Utilities and Service Systems

Impacts to the electrical grid due to implementation of the OTC Policy were considered to be less than significant with mitigation. Disruptions to utility services and grid reliability would be most effectively mitigated by establishing a statewide policy that included provisions to consult with the state's energy agencies and coordinate implementation among the Regional Water Boards. The SACCWIS, established by the OTC Policy, monitors statewide grid reliability to identify potential electrical shortages potentially brought about by implementation of the OTC Policy. Due to projected electrical shortfalls starting in 2021, in its January 23, 2020 SACCWIS Report, the SACCWIS recommended the State Water Board consider extending the compliance dates of Alamitos Units 3, 4, and 5; Huntington Beach Unit 2; and Ormond Beach Units 1 and 2 for three years until December 31, 2023, and Redondo Beach Units 5, 6, and 8 for one year until December 31, 2021.

Air Quality

The State Water Board evaluated potential impacts to air quality in three scenarios assuming that all OTC units deemed feasible are retrofitted to either closed-cycle wet cooling or closed-cycle dry cooling systems and new combined-cycle generation or increased capacity at retrofitted OTC units replaces the nuclear OTC units at Diablo Canyon and San Onofre Nuclear Generating Station. It was determined that air quality impacts related to complying with the OTC Policy could not accurately be assessed because it was difficult to estimate the method of compliance owners and operators would select for each power plant. The [2010 Final SED](#) concluded that complying with the OTC Policy with a combination of OTC unit retirements and replacement of capacity

with newer, more efficient resources that produce fewer emissions would be expected to show no change to a modest reduction of existing baseline air quality impacts caused by operation of OTC units.

Aesthetics and Noise

Noise and aesthetic impacts related to compliance with the OTC Policy were determined to be less than significant in the [2010 Final SED](#). If cooling towers were installed as a method of compliance with the OTC Policy, appropriate mitigation would be required to offset aesthetic and noise impacts.

This proposed amendment would not affect the identified reasonably foreseeable methods of compliance with the OTC Policy, nor would it result in any new significant environmental impacts or a substantial increase in the severity of previously identified significant effects beyond what was identified in the [2010 Final SED](#), as illustrated by the above discussion, together with sections 5.3, 5.5, 5.5, and 6.1. Therefore, continued operation of Alamitos, Huntington Beach, Ormond Beach, Redondo Beach and Diablo Canyon under their current operational configuration does not constitute an increase in impacts relative to the baseline identified in the [2010 Final SED and does not require subsequent or supplemental environmental analysis](#).

9. Water Code Section 13140 and Other Required Considerations

9.1. Economic Analysis

The [2010 Final SED](#) provides information on the costs of compliance with the OTC Policy. In the event of extension of the compliance dates for Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach, some cost to the owners and operators is anticipated for maintaining trained staff and resources to continue operations and interim mitigation payments for up to three years beyond December 31, 2020. These costs are considered as cost of compliance with the OTC Policy and are consistent with those discussed in the [2010 Final SED](#).

9.2. The Human Right to Water

Once-through cooling water use is not included in [Resolution No. 2016-0010](#), which adopted the human right to water as a core value of the State and Regional Water Boards. The primary goal of the OTC Policy is to protect marine life from the harmful impacts of impingement and entrainment associated with the use of cooling water intake structures. Therefore, the directives of Resolution No. 2016-0020 are not applicable to this proposed amendment to the OTC Policy.

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**FINAL AMENDMENT TO THE
WATER QUALITY CONTROL POLICY ON
THE USE OF
COASTAL AND ESTUARINE WATERS
FOR POWER PLANT COOLING**

**State Water Resources Control Board
September 1, 2020**

**WATER QUALITY CONTROL POLICY ON THE
USE OF COASTAL AND ESTUARINE WATERS FOR
POWER PLANT COOLING**

1. Introduction

- A. Clean Water Act Section 316(b) requires that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available (BTA) for minimizing adverse environmental impact. Section 316(b) is implemented through National Pollutant Discharge Elimination System (NPDES) permits, issued pursuant to Clean Water Act Section 402, which authorize the point source discharge of pollutants to navigable waters.
- B. 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.
- C. The State Water Board and Regional Water Quality Control Boards (Regional Water Boards) (collectively Water Boards) are authorized to issue NPDES permits to point source dischargers in California.
- D. Currently, there are no applicable nationwide standards implementing Section 316(b) for *existing power plants*^{*1}. Consequently, the Water Boards must implement Section 316(b) on a case-by-case basis, using best professional judgment.
- E. 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.
- F. This Policy establishes requirements for the implementation of Section 316(b), using best professional judgment in determining BTA for cooling water intake structures at existing coastal and estuarine power plants that must be implemented in NPDES permits.
- G. The intent of this Policy is to ensure that the beneficial uses of the State's coastal and estuarine waters are protected while also ensuring that the electrical power needs essential for the welfare of the citizens of the State are met. The State Water Board recognizes it is necessary to develop replacement infrastructure to maintain electric reliability in order to implement this Policy and in developing this policy considered costs, including costs of compliance, consistent with state and federal law.

¹ An asterisk indicates that the term is defined in Section 5 of the Policy.

- H. During the development of this Policy, State Water Board staff has met regularly with representatives from the California Energy Commission (CEC), California Public Utilities Commission (CPUC), California Coastal Commission (CCC), California State Lands Commission (SLC), California Air Resources Board (ARB), and California Independent System Operator (CAISO) to develop realistic implementation plans and schedules for this Policy that will not cause disruption in the State's electrical power supply. The compliance dates for this Policy were developed considering a report produced by the energy agencies (CEC, CPUC, and CAISO), titled "Implementation of OTC Mitigation Through Energy Infrastructure Planning and Procurement Changes," and the accompanying table, titled "Draft Infrastructure Replacement Milestones and Compliance Dates for Existing Power Plants in California Using Once Through Cooling (OTC)," included in the Substitute Environmental Document for this Policy. The energy agencies' approach seeks to address the replacement, repowering, or retirement of power plants currently using OTC that (1) maintains reliability of the electric system; (2) meets California's environmental policy goals; and (3) achieves these goals through effective long-term planning for transmission, generation and demand resources. The energy agencies have stated that the dates specified in their report may require periodic updates.
- I. To prevent disruption in the State's electrical power supply when the Policy is implemented, the State Water Board will convene a Statewide Advisory Committee on Cooling Water Intake Structures (SACCWIS), which will include representatives from the CEC, CPUC, CAISO, CCC, SLC, ARB, and State Water Board. SACCWIS will review implementation plans and schedules submitted by dischargers pursuant to this Policy, and advise the State Water Board on the implementation of this Policy to ensure that the implementation schedule takes into account local area and grid reliability, including permitting constraints. The State Water Board recognizes the compliance dates in this Policy may require amendment based on, among other factors, the need to maintain reliability of the electric system as determined by the energy agencies included in the SACCWIS, acting according to their individual or shared responsibilities. The State Water Board retains the final authority over changes to the adopted policy.
- J. While the CEC, CPUC and CAISO each have various planning or permitting responsibilities important to this effort, the approach relies upon use of competitive procurement and forward contracting mechanisms implemented by the CPUC in order to identify low cost solutions for most OTC power plants. The CPUC has authority to order the investor-owned utilities (IOUs) to procure new or repowered fossil-fueled generation for system and/or local reliability in the Long-Term Procurement Plan (LTPP) proceeding. In response to the Policy, the CPUC anticipates modifying its LTPP proceeding and procurement processes to require the IOUs to assess replacement infrastructure needs and conduct targeted requests for offers (RFOs) to acquire replacement, repowered or otherwise compliant generation capacity. LTPP proceedings are conducted on a biennial cycle and plans are normally

approved in odd-numbered years. The next cycle, the 2010 LTPP, is estimated to result in a decision by 2011. The subsequent cycle, the 2012 LTPP, would in turn result in a decision by 2013. Once authorized to procure by a CPUC LTPP decision, the IOUs need approximately 18 months to issue an RFO, sign contracts, and submit applications to the CPUC for approval. Approval by the CPUC takes approximately nine months. If the contract involves a facility already licensed through the CEC generation permitting process, then financing and construction can begin. A typical generation permitting timeline is 12 months, but specific issues such as ability to obtain air permits can delay the process. IOUs often give preference to RFO bids with permits already (or nearly) in place. V From contract approval, construction usually takes three years, if generation permits are approved, or approximately five years, if generation permits are pending or other barriers present delays. In total, starting from the initiation of an LTPP proceeding (2010 LTPP or 2012 LTPP), seven years are expected to elapse, before replacement infrastructure is operational. Due to the number of plants affected, efforts to replace or repower OTC power plants would need to be phased.

- K. Because the Los Angeles region presents a more complex and challenging set of issues, it is anticipated that more time would be needed to study and implement replacement infrastructure solutions. Therefore, total elapsed time is expected to begin in 2010 and end in 2017 for the Greater Bay Area and San Diego regions, which would be addressed beginning in the 2010 LTPP. For the Los Angeles region, which would be addressed beginning in the 2012 LTPP, total elapsed time is expected to begin in 2012 and end in 2020. A transmission solution is expected to have approximately the same timeframe, but could be delayed by greater potential for significant local opposition. In order to assure that repowering or *new power plant** development in the Los Angeles basin addresses unique permitting challenges, the SACCWIS will assist the State Water Board in evaluating schedules for power plants not under the jurisdiction of the CPUC or operating within the CAISO Balancing Authority Area.
- L. The Global Warming Solutions Act of 2006 requires California to reduce greenhouse gas emissions to 1990 levels by 2020 and then to maintain those reductions. California presently has two *nuclear-fueled power plants** that provide approximately 4,600 megawatts of baseload electricity and do not emit greenhouse gases during energy generation. Energy generation by facilities that do not emit greenhouse gases will be critical to meeting the mandates of the Global Warming Solutions Act and emerging national and international greenhouse gas reduction requirements. The *nuclear-fueled power plants** are entering into United States Nuclear Regulatory Commission (Commission) license renewal proceedings unique to the nuclear power industry and relicensing may extend the plants operating lives to approximately 2045. Unlike older era fossil-fueled plants, if the *nuclear-fueled power plants** undergo modernization as part of relicensing or cooling structure upgrades, that modernization will not reduce greenhouse gas

emissions, and in fact, extended downtime during modernization may result in short-term increases in greenhouse gases as other greenhouse gas emitting facilities provide makeup power. In recognition of these considerations and others, this Policy requires special studies for the *nuclear-fueled power plants** to address their unique issues, and to evaluate appropriate requirements for those plants.

- M. To conserve the State's scarce water resources, the State Water Board encourages the use of recycled water for cooling water in lieu of marine, estuarine or fresh water.
- N. The Regional Water Boards are responsible for all NPDES permit actions for *existing power plants** subject to this Policy, including without limitation action to issue, modify, reissue, revoke, and terminate NPDES permits after October 1, 2010. In order to ensure a high level of statewide consistency in implementing Section 316(b), the State Water Board Division of Water Quality (DWQ) staff will provide technical support in all issues related to implementation of the OTC Policy.
- O. Nothing in this Policy precludes the authority of the State Water Board and the Regional Water Board to regulate discharges from *existing power plants** through NPDES permits, consistent with water quality standards.

2. Requirements for *Existing Power Plants**

- A. Compliance Alternatives. An owner or operator of an *existing power plant** must comply with either Track 1 or Track 2, below.
 - (1) Track 1. An owner or operator of an *existing power plant** must reduce *intake flow rate** at each unit, at a minimum, to a level commensurate with that which can be attained by a *closed-cycle wet cooling system**. A minimum 93 percent reduction in *intake flow rate** for each unit is required for Track 1 compliance, compared to the unit's design *intake flow rate**. The through- screen intake velocity must not exceed 0.5 foot per second. The installation of closed cycle dry cooling systems meets the intent and minimum reduction requirements of this compliance alternative.
 - (2) Track 2. If an owner or operator of an *existing power plant** demonstrates to the State Water Board's satisfaction that compliance with Track 1 is *not feasible**, the owner or operator of an *existing power plant** must reduce impingement mortality and entrainment of marine life for the facility, on a unit- by-unit basis, to a comparable level to that which would be achieved under Track 1, using operational or structural controls, or both.
 - (a) Compliance for impingement mortality shall be determined either:

- (i) For plants relying solely on reductions in velocity, by monthly verification of through-screen intake velocity not to exceed 0.5 foot per second, or
 - (ii) By monitoring required in Section 4.A, below. For measured reductions determined by monitoring, the owner or operator must reduce impingement mortality to a comparable level to that which would be achieved under Track 1. A “comparable level” is a level that achieves at least 90 percent of the reduction in impingement mortality required under Track 1.
- (b) Compliance for entrainment shall be determined either:
- (i) For plants relying solely on reductions in flow, by recording and reporting reductions in terms of monthly flow, in which case a minimum of 93% reduction in flow, as compared to the average actual flow for the corresponding months from 2000 – 2005, must be met, or
 - (ii) For plants relying in whole or in part on other control technologies (e.g., including but not limited to screens or re-location of intake structures), by measured reductions in entrainment determined by monitoring required in Section 4.B, below. The owner or operator must reduce entrainment to a comparable level to that which would be achieved under Track 1. A “comparable level” is a level that achieves at least 90 percent of the reduction in entrainment required under Track 1. If screens are employed to reduce entrainment, compliance shall be determined based on *ichthyoplankton**, and on the crustacean phyllosoma and megalops larvae, and squid paralarvae fractions of *meroplankton**.
- (c) Technology-based improvements that are specifically designed to reduce impingement mortality and/or entrainment and were implemented prior to October 1, 2010 may be counted towards meeting Track 2 requirements.
- (d) The owner or operator of an *existing power plant** with *combined-cycle power-generating units** installed prior to October 1, 2010 may achieve compliance in accordance with this paragraph.

The owner or operator may count prior reductions in impingement mortality and entrainment resulting from the replacement of steam turbine power-generating units with *combined-cycle power-generating units**, towards meeting Track 2 requirements. Reductions shall be based on reductions in intake flows, calculated as the difference between:

- (i) The maximum permitted discharge (expressed as million gallons per day (MGD)) for the entire power plant as identified in the plant's prior NPDES permit that authorized the steam turbine power-generating units which were subsequently replaced with the *combined-cycle power-generating units**, and
- (ii) The maximum permitted discharge (expressed as MGD) for the entire power plant, including the combined cycle units, as identified in the plant's NPDES permit authorizing the *combined-cycle power-generating units**.

B. Final Compliance Dates

- (1) *Existing power plants** shall comply with Section 2.A, above, as soon as possible, but no later than, the dates shown in Table 1, contained in Section 3.E, below.
- (2) Based on the need for continued operation of an *existing power plant** to maintain the reliability of the electric system, a final compliance date may be suspended under the following circumstances:
 - (a) **Suspension of Final Compliance Date for Less Than 90 Days for *Existing Power Plants** Within CAISO Jurisdiction.** If CAISO determines that continued operation of an *existing power plant** is necessary to maintain the reliability of the electric system in the short-term, CAISO shall provide written notification to the State Water Board, the Regional Water Board with jurisdiction over the *existing power plant**, and the SACCWIS. If the Executive Directors of the CEC and CPUC do not object in writing within 10 days to CAISO's written notification, the notification provided pursuant to this paragraph will suspend the final compliance date for the shorter of 90 days or the time CAISO determines necessary to maintain reliability. In the event either CEC or CPUC objects as provided in this paragraph, then the State Water Board shall hold a hearing as expeditiously as possible to determine whether to suspend the compliance date in accordance with paragraph (d).
 - (b) **Suspension of Final Compliance Date for Longer Than 90 Days, or consecutive less than 90 day suspensions, for *Existing Power Plants** Within CAISO Jurisdiction.** If CAISO determines that continued operation of an *existing power plant** is necessary to maintain the reliability of the electric system, CAISO shall provide written notification to the State Water Board, the Regional Water Board with jurisdiction over the *existing power plant**, and the SACCWIS. If the Executive Directors of the CEC and CPUC do not object in writing within 10 days to CAISO's

determination, the notification provided pursuant to this paragraph will suspend the final compliance date for 90 days. During the 90-day time suspension or within 90 days of receiving a written notification from CAISO, the State Water Board shall conduct a hearing in accordance with paragraph (d) to determine whether to suspend the final compliance date for more than the original 90 days pending, if necessary, full evaluation of amendments to final compliance dates contained in the policy.

- (c) **Suspension of Final Compliance Date for *Existing Power Plants** Within Los Angeles Department of Water and Power (LADWP) Service Area.** If the LADWP Commission determines, through a public process, that continued operation of an *existing power plant** operated by LADWP is necessary to maintain the reliability of the electric system in the short-term, LADWP shall provide written notification to the State Water Board, the Regional Water Board with jurisdiction over the *existing power plant**, and the SACCWIS. Within 45 days of receiving a written notice from LADWP, the State Water Board shall conduct a hearing in accordance with paragraph (d) to determine whether to suspend the final compliance date. In considering whether to suspend or amend the final compliance dates the State Board shall consult with the CAISO.
- (d) **State Water Board Hearings on Suspension of Final Compliance Dates.** In considering whether to suspend or amend the final compliance dates, the State Water Board shall afford significant weight to the recommendations of the CAISO.

C. Immediate and Interim Requirements

- (1) No later than October 1, 2011, the owner or operator of an *existing power plant** with an *offshore intake** shall install large organism exclusion devices having a distance between exclusion bars of no greater than nine inches, or install other exclusion devices, deemed equivalent by the State Water Board.
- (2) No later than October 1, 2011, the owner or operator of an *existing power plant** unit that is not directly engaging in *power-generating activities**, or *critical system maintenance**, shall cease intake flows, unless the owner or operator demonstrates to the State Water Board that a reduced minimum flow is necessary for operations.
- (3) The owner or operator of an *existing power plant** must implement measures to mitigate the interim impingement and entrainment impacts resulting from the cooling water intake structure(s), commencing October 1, 2015 and continuing up to and until the owner or operator achieves final compliance. The owner or operator must include in the

implementation plan, described in Section 3.A below, the specific measures that will be undertaken to comply with this requirement. An owner or operator may comply with this requirement by:

- (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, 2010; or
 - (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 Coastal Conservancy which will work with the California Ocean Protection Council to fund an appropriate *mitigation project**; or
 - (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) 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) It is the preference of the State Water Board that funding is 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 in the geographic region of the facility.
- (4) Owners or operators of fossil fueled units that have submitted implementation plans to comply with this Policy under Section 2.A(1) and have requested compliance dates after December 31, 2022 that are approved by the State Water Board as provided in Section 3.E shall:
- (a) Commit to eliminate OTC and seawater use for cooling water purposes for all units at the facility.
 - (b) Conduct a study or studies, singularly or jointly with other facilities, to evaluate new technologies or improve existing technologies to reduce impingement and entrainment.

- (c) Submit the results of the study and a proposal to minimize entrainment and impingement to the Chief Deputy Director no later than December 31, 2015.
- (d) Upon approval of the proposal by the Chief Deputy Director, complete implementation of the proposal no later than December 31, 2020.

D. *Nuclear-Fueled Power Plants**

If the owner or operator of an existing *nuclear-fueled power plant** demonstrates that compliance with the requirements for *existing power plants** in Section 2.A, above, of this Policy would result in a conflict with any safety requirement established by the Commission, with appropriate documentation or other substantiation from the Commission, the State Water Board will make a site-specific determination of best technology available for minimizing adverse environmental impact that would not result in a conflict with the Commission's safety requirements. The State Water Board may also establish alternative, site-specific requirements in accordance with Section 3.D (8).

3. Implementation Provisions

- A. With the exception of *nuclear-fueled power plants**, which are covered under 3.D, below, no later than April 1, 2011, the owner or operator of an *existing power plant** shall submit an implementation plan to the State Water Board.
 - (1) The implementation plan shall identify the compliance alternative selected by the owner or operator, describe the general design, construction, or operational measures that will be undertaken to implement the alternative, and propose a realistic schedule for implementing these measures that is as short as possible. If the owner or operator chooses to repower the facility to reduce or eliminate reliance upon OTC, or to retrofit the facility to implement either Track 1 or Track 2 alternatives, the implementation plan shall identify the time period when generating power is infeasible and describe measures taken to coordinate this activity through the appropriate electrical system balancing authority's maintenance scheduling process.
 - (2) If the owner or operator selects *closed-cycle wet cooling** as a compliance alternative, the owner or operator shall address in the implementation plan whether recycled water of suitable quality is available for use as makeup water.
- B. The SACCWIS shall be impaneled no later than January 1, 2011, by the Executive Director of the State Water Board, to advise the State Water Board on the implementation of this Policy to ensure that the implementation schedule takes into account local area and grid reliability, including permitting

constraints. SACCWIS shall include representatives from the CEC, CPUC, CAISO, CCC, SLC, ARB, and State Water Board.

- (1) SACCWIS meetings shall be scheduled regularly and as needed. Meetings shall be open to the public and shall be noticed at least 10 days in advance of the meeting. All SACCWIS products shall be made available to the public.
 - (2) The SACCWIS shall review the owner or operator's proposed implementation schedule and report to the State Water Board with recommendations no later than October 1, 2011. The SACCWIS may consult with other appropriate agencies, including but not limited to the Regional Water Boards, air quality districts, and the LADWP, in the process of reviewing implementation schedules and providing recommendations to the State Water Board.
 - (3) The CAISO and the LADWP shall each submit to the SACCWIS by December 31 and January 31, respectively, each year a grid reliability study for their respective jurisdictions that has been developed pursuant to a public process and approved by their governing bodies. In order to assure that SACCWIS can provide annual reports to the State Water Board by March 31, the SACCWIS shall promptly meet to consider the reliability studies submitted by CAISO and the LADWP.
 - (4) The SACCWIS will report to the State Water Board with recommendations on modifications to the implementation schedule every year starting in 2012. If members of SACCWIS do not believe the full committee recommendations reflect their concerns they may issue minority recommendations that the State Water Board shall consider as part of the SACCWIS recommendations.
 - (5) The State Water Board shall consider the SACCWIS' recommendations and, if appropriate, consider modifications to this Policy. In the event that the SACCWIS energy agencies (CAISO, CPUC, and CEC) make a unanimous recommendation for implementation schedule modification based on grid reliability, the State Water Board shall afford significant weight to the recommendation.
- C. The Regional Water Board shall reissue or, as appropriate, modify NPDES permits issued to owners or operators of *existing power plants**, after a hearing in the affected region, to ensure that the permits conform to the provisions of this Policy.
- (1) The permits shall incorporate a final compliance schedule that requires compliance no later than the due dates contained in Table 1, contained in Section 3.E, below. If the State Water Board determines that a longer compliance schedule is necessary to maintain reliability of the electric system per SACCWIS recommendations while other OTC power plants

are retrofitted, repowered, or retired or transmission upgrades take place, this delay shall be incorporated into the compliance schedule and stated in the permit findings.

- (2) The Regional Water Board shall reopen, if necessary, the relevant permits and modify the final compliance schedules, if appropriate, based on modifications to the policy approved by the State Water Board or the suspension of final compliance dates pursuant to this policy.
 - (3) If an owner or operator selects Track 2 as the compliance alternative, the NPDES permit shall include a monitoring program that complies with Section 4 of this Policy.
 - (4) NPDES permits issued by the Regional Water Board shall include appropriate permit provisions to implement suspensions of final compliance dates authorized in Section 2.B (2) and modifications to final compliance dates specified in this policy, without reopening the permits.
- D. No later than January 1, 2011 the Executive Director of the State Water Board, using the authority under section 13267(f) of the Water Code, shall request that Southern California Edison (SCE) and Pacific Gas & Electric Company (PG&E) conduct special studies for submission to the State Water Board.
- (1) The special studies shall investigate alternatives for the *nuclear-fueled power plants** to meet the requirements of this Policy, including the costs for these alternatives.
 - (2) The special studies shall be conducted by an independent third party with engineering experience with nuclear power plants, selected by the Executive Director of the State Water Board.
 - (3) The special studies shall be overseen by a Review Committee, established by the Executive Director of the State Water Board no later than January 1, 2011, which shall include, at a minimum, representatives of SCE, PG&E, SACCWIS, the environmental community, and staffs of the State Water Board, Central Coast Regional Water Board, and the San Diego Regional Water Board.
 - (4) No later than October 1, 2011, the Review Committee, described above, shall provide a report for public comment detailing the scope of the special studies, including the degree to which existing, completed studies can be relied upon.

- (5) No later than October 1, 2013 the Review Committee shall provide the final report and the Review Committee's comments for public comment detailing the results of the special studies and shall present the report to the State Water Board.
- (6) Meetings of the Review Committee shall be open to the public and shall be noticed at least 10 days in advance of the meeting. All products of the Review Committee shall be made available to the public.
- (7) The State Water Board shall consider the results of the special studies, and shall evaluate the need to modify this Policy with respect to the *nuclear-fueled power plants**. In evaluating the need to modify this Policy, the State Water Board shall base its decision to modify this Policy with respect to the *nuclear- fueled power plants** on the following factors:
 - (a) Costs of compliance in terms of total dollars and dollars per megawatt hour of electrical energy produced over an amortization period of 20 years;
 - (b) Ability to achieve compliance with Track 1 considering factors including, but not limited to, engineering constraints, space constraints, permitting constraints, and public safety considerations;
 - (c) Potential environmental impacts of compliance with Track 1, including, but not limited to, air emissions.
- (8) If the State Water Board finds that for a specific *nuclear-fueled power plant** to implement Track 1, either
 - (a) the costs are wholly out of proportion to the costs identified in Tetra Tech, Inc., California's Coastal Power Plants: Alternative Cooling System Analysis, February 2008 (see pages ES-10 [summary], C-1 - C-2 and C- 23 - C-40 [Diablo Canyon Power Plant] and N-1 - N-2 and N-25 - N-42 [San Onofre Nuclear Generating Station]) and considered by the State Water Board in establishing Track 1, or
 - (b) compliance is wholly unreasonable based on the factors in paragraphs 7(b) and (c), then the State Water Board shall establish alternate requirements for that *nuclear-fueled power plant**. The State Water Board shall establish alternative requirements no less stringent than justified by the wholly out of proportion (i) cost and (ii) factor(s) of paragraph (7). The burden is on the person requesting the alternative requirement to demonstrate that alternative requirements should be authorized.

- (9) In the event the State Water Board establishes alternate requirements for *nuclear-fueled power plants**, the difference in impacts to marine life resulting from any alternative, less stringent requirements shall be fully mitigated. Mitigation required pursuant to this paragraph shall be a *mitigation project** directed toward the increase in marine life associated with the State's Marine Protected Areas in the geographic region of the facility. Funding for the *mitigation project** shall be provided to the California Coastal Conservancy, working with the Ocean Protection Council to fund an appropriate *mitigation project**.

E. Table 1. Implementation Schedule

| | Milestone | Responsible Entity/Party | Due Date² |
|---|---|---|-----------------------------|
| 1 | Request SCE and PG&E to conduct special studies to investigate compliance options for nuclear-fueled power plants* [Section 3.D] | State Water Board Executive Direction | 01/01/2011 |
| 2 | Establish Review Committee [Section 3.D(3)] | State Water Board Executive Director | 01/01/2011 |
| 3 | Establish SACCWIS [Section 3.B] | State Water Board Executive Director | 01/01/2011 |
| 4 | Submit a proposed implementation plan to the State and Regional Water Boards [Section 3.A] | Owner/operators of existing fossil- fueled power plants | 04/01/2011 |
| 5 | Provide a report for public comment, detailing the scope of the special studies on compliance options for nuclear-fueled power plants* [Section 3.D(4)] | Review Committee | 10/01/2011 |
| 6 | Review the owners or operators' proposed implementation schedules and report to the State Water Board with recommendations [Section 3.B(2)] | SACCWIS | 10/01/2011 |
| 7 | Humboldt Bay Power Plant in compliance | Owner/operator | 12/31/2010 |
| 8 | Potrero Power Plant in compliance | Owner/operator | 10/01/2011 |
| 9 | Install large organism exclusion devices with a distance between exclusion bars of no greater than nine inches, or equivalent device [Section 2.C(1)] | Owner/operators of existing power plants* with offshore intakes* | 10/01/2011 |

² These compliance dates were developed considering information provided by the CEC, CPUC, CAISO, and LADPW

| | Milestone | Responsible Entity/Party | Due Date² |
|----|--|--|-----------------------------|
| 10 | Cease intake flows for units not directly engaging in power-generating activities* or critical system maintenance*, or demonstrate to the State Water Board that a reduced minimum flow is necessary for operations [Section 2.C(2)] | Owner/operators of existing power plants* | 10/01/2011 |
| 11 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCWIS | 03/31/2012 |
| 12 | South Bay Power Plant in compliance | Owner/operator | 12/31/2011 |
| 13 | Report to State Water Board on results of special studies on compliance options for nuclear-fueled power plants* [Section 3.D(5)] | Review Committee | 10/01/2013 |
| 14 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCWIS | 03/31/2013 |
| 15 | Haynes units 5 & 6 in compliance, repowered without OTC | LADWP | 12/31/2013 |
| 16 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCWIS | 03/31/2014 |
| 17 | Commence to implement measures to mitigate the interim impingement and entrainment impacts due to the cooling water intake structure(s) [Section 2.C(3)] | Owners/operators of existing power plants* | 10/01/2015 |
| 18 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCWIS | 03/31/2015 |
| 19 | El Segundo and Morro Bay power plants in compliance | Owner/operator | 12/31/2015 |
| 20 | Scattergood unit 3 in compliance, repowered without OTC | LADWP | 12/31/2015 |

| | Milestone | Responsible Entity/Party | Due Date² |
|----|--|---------------------------------|-----------------------------|
| 21 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCCWIS | 03/31/2016 |
| 22 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCCWIS | 03/31/2017 |
| 23 | Power plants in CPUC 2010 LTPP Cycle in compliance: Encina Unit 1, Contra Costa, Pittsburg [Section 1.J] | Owner/Operator | 12/31/2017 |
| 24 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCCWIS | 03/31/2018 |
| 25 | Encina Power Station Units 2-5 in compliance [Section 1.J] | Owner/Operator | 12/31/2018 |
| 26 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCCWIS | 03/31/2019 |
| 27 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCCWIS | 03/31/2020 |
| 28 | Huntington Beach Units 1, 3, and 4; Redondo Beach Unit 7; Alamitos Units 1, 2, and 6; Mandalay; and Moss Landing in compliance | Owner/operator | 12/31/2020 |
| 29 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCCWIS | 03/31/2021 |
| 30 | Redondo Beach Units 5, 6, and 8 in compliance | Owner/operator | 12/31/2021 |
| 31 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCCWIS | 03/31/2022 |
| 32 | San Onofre Nuclear Generating Station in compliance with implementation provisions resulting from State Water Board action on special studies from Section 3.D | Owner/operator | 12/31/2022 |

| | Milestone | Responsible Entity/Party | Due Date² |
|----|---|---------------------------------|-----------------------------|
| 33 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCWIS | 03/31/2023 |
| 34 | Alamitos Units 3, 4, and 5; Huntington Beach Unit 2; and Ormond Beach in compliance | Owner/operator | 12/31/2023 |
| 35 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCWIS | 03/31/2024 |
| 36 | Diablo Canyon Nuclear Power Plant Unit 1 in compliance | Owner/operator | 11/02/2024 |
| 37 | Scattergood units 1 & 2 in compliance, repowered without OTC | LADWP | 12/31/2024 |
| 38 | Diablo Canyon Nuclear Power Plant Unit 2 in compliance | Owner/operator | 08/26/2025 |
| 39 | Haynes units 1 & 2 in compliance, repowered without OTC | LADWP | 12/31/2029 |
| 40 | Harbor unit 5 in compliance, repowered without OTC | LADWP | 12/31/2029 |
| 41 | Haynes unit 8 in compliance, repowered without OTC | LADWP | 12/31/2029 |

4. Track 2 Monitoring Provisions

A. Impingement Impacts: The following impingement studies are required to comply with Section 2.A.(2)(a)(ii):

- (1) A baseline impingement study shall be performed, unless the discharger demonstrates, to the Regional Water Board's satisfaction, that prior studies accurately reflect current impacts. Baseline impingement shall be measured on-site and shall include sampling for all species impinged. The impingement study shall be designed to accurately characterize the species currently impinged and their seasonal abundance to the satisfaction of the Regional Water Board.
 - (a) The study period shall be at least 36 consecutive months.
 - (b) Impingement shall be measured during different seasons when the cooling system is in operation and over 24-hour sampling periods.
 - (c) When applicable, impingement shall be sampled under differing representative operational conditions (e.g., differing levels of power production, heat treatments, etc.).
 - (d) The study shall not result in any additional mortality above typical operating conditions.
- (2) After the Track 2 controls are implemented, to confirm the level of impingement controls, another impingement study, consistent with Section 4.A(1)(a) to (d), above, shall be performed and reported to the Regional Water Board.
- (3) The need for additional impingement studies shall be evaluated at the end of each permit period. Impingement studies shall be required when changing operational or environmental conditions indicate that new studies are needed, at the discretion of the Regional Water Board.

B. Entrainment Impacts: The following entrainment studies are required to comply with Section 2.A.(2)(b)(ii):

- (1) A baseline entrainment study shall be performed, unless the discharger demonstrates, to the Regional Water Board's satisfaction, that prior studies accurately reflect current impacts. Prior studies that may have used a mesh size of 333 or 335 microns for sampling are acceptable for compliance with the review and approval of the Regional Water Board. If the Regional Water Board determines that a new baseline entrainment study shall be performed to determine larval composition and abundance in the source water, representative of water that is being entrained, then samples must be collected using a mesh size no

larger than 335 microns. Additional samples shall also be collected using a 200 micron mesh to provide a broader characterization of other *meroplankton** entrained. The source water shall be determined based on oceanographic conditions reasonably expected after Track 2 controls are implemented. Baseline entrainment sampling shall provide an unbiased estimate of larvae entrained at the intake prior to the implementation of Track 2 controls.

- (a) Entrainment impacts shall be based on sampling for all *ichthyoplankton** and invertebrate *meroplankton** species. Individuals collected shall be identified to the lowest taxonomical level practicable. When practicable, genetic identification through molecular biological techniques may be used to assist in compliance with this requirement. Samples shall be preserved and archived such that genetic identification is possible at a later date.
 - (b) The study period shall be at least 36 consecutive months, and shall occur during different seasons, including periods of peak use when the cooling system is in operation (such as the summer months when energy is in high demand). Sampling shall be designed to account for variation in oceanographic conditions and larval abundance and behavior such that abundance estimates are reasonably accurate.
- (2) After the Track 2 controls are implemented, to confirm the level of entrainment controls, another entrainment study (with a study design to the Regional Water Board's satisfaction, with samples collected using a mesh size no larger than 335 microns, and with additional samples also collected using a 200 micron mesh) shall be performed and reported to the Regional Water Board.
 - (3) The need for additional entrainment studies shall be evaluated at the end of each permit period. Entrainment studies shall be required when changing operational or environmental conditions indicate that new studies are needed, at the discretion of the Regional Water Board.

5. Definition of Terms

Closed-cycle wet cooling system – Refers to a cooling system, which functions by transferring waste heat to the surrounding air through the evaporation of water, thus enabling the reuse of a smaller amount of water several times to achieve the desired cooling effect. The only discharge of wastewater is from periodic blowdown for the purpose of limiting the buildup of concentrations of materials in excess of desirable limits established by best engineering practice.

Combined-cycle power-generating units - Refers to units within a power plant which combined generate electricity through a two-stage process involving combustion and steam. Hot exhaust gas from combustion turbines is passed through a heat recovery steam generator to produce steam for a steam turbine. The turbine exhaust steam is condensed in the cooling system and may or may not be returned to the power cycle. Combined cycle power-generating units are generally more fuel-efficient and use less cooling water than steam boiler units with the same generating capacity.

Critical system maintenance – are activities that are critical for maintenance of a plant’s physical machinery and absolutely cannot be postponed until the unit is operating to generate electricity.

Existing power plant(s) – Refers to any power plant that is not a *new power plant**.

Habitat production foregone – Refers to the product of the average annual *proportional mortality** and the estimated area of the water body that is habitat for the species’ source population. Habitat production foregone is an estimate of habitat area production that is lost to all entrained species on an annual basis.

Ichthyoplankton – Refers to the planktonic early life stages of fish (i.e., the pelagic eggs and larval forms of fishes).

Intake flow rate – Refers to the instantaneous rate at which water is withdrawn through the intake structure, expressed as gallons per minute.

Meroplankton – For purposes of this Policy, refers to that component of the *zooplankton** community composed of squid paralarvae and the pelagic larvae of benthic invertebrates.

Mitigation project – Projects to restore marine life lost through impingement mortality and entrainment. Restoration of marine life may include projects to restore and/or enhance coastal marine or estuarine habitat, and may also include protection of marine life in existing marine habitat, for example through the funding of implementation and/or management of Marine Protected Areas.

New power plant – Refers to any plant that is a “new facility”, as defined in

40 C.F.R. § 125.83 (revised as of July 1, 2007), and that is subject to Subpart I, Part 125 of the Code of Federal Regulations (revised as of July 1, 2007) (referred to as “Phase I regulations”).

Not Feasible – Cannot be accomplished because of space constraints or the inability to obtain necessary permits due to public safety considerations, unacceptable environmental impacts, local ordinances, regulations, etc. Cost is not a factor to be considered when determining feasibility under Track 1.

Nuclear-fueled power plant(s) – Refers to Diablo Canyon Power Plant and/or San Onofre Nuclear Generating Station.

Offshore intake –refers to any submerged intake structure that is not located at the shoreline, and includes such intakes that are located in ocean, bay and estuary environments.

Power-generating activities – Refers to activities directly related to the generation of electrical power, including start-up and shut-down procedures, contractual obligations (hot stand-by), hot bypasses, and *critical system maintenance** regulated by the Nuclear Regulatory Commission. Activities that are not considered directly related to the generation of electricity include (but are not limited to) dilution for in-plant wastes, maintenance of source-and receiving water quality strictly for monitoring purposes, and running pumps strictly to prevent fouling of condensers and other power plant equipment.

Proportional mortality – the proportion of larvae killed from entrainment to the larvae in the source population, as determined by an Empirical Transport Model.

Zooplankton – For purposes of this Policy, refers to those planktonic invertebrates larger than 200 microns.