

**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**



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**California Environmental Protection Agency**

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## **Abbreviations and Acronyms**

<b>Abbreviation or Acronym</b>	<b>Full Name or Phrase</b>
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 31<sup>st</sup> 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).

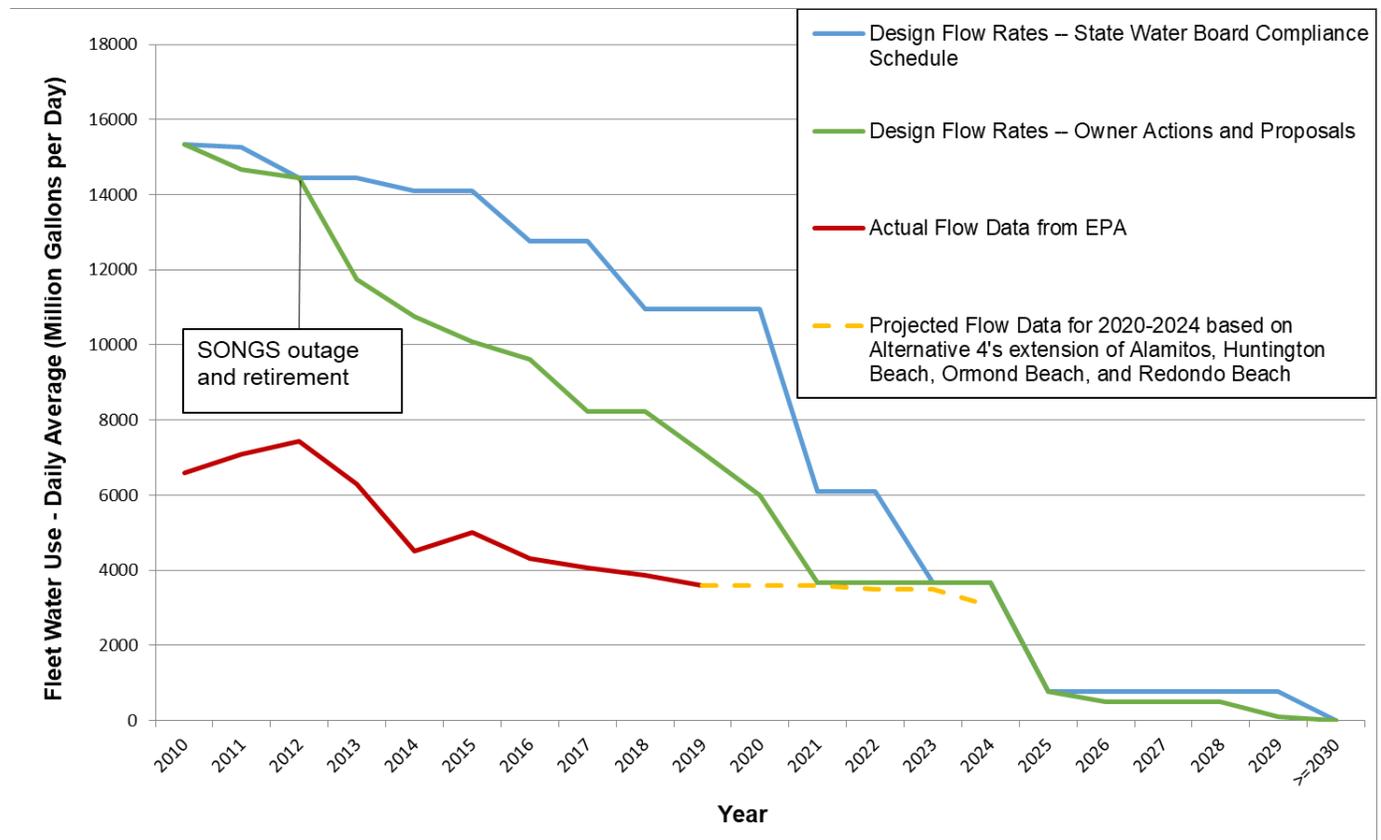
Since adoption of the OTC Policy, Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach have operated at decreasing capacities, with average annual capacity factors decreasing from 7.7% in 2012 to 4.4% in 2018. If extended, these four OTC power plants are expected to be operated at or below annual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