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# Statewide Advisory Committee on Cooling Water Intake Structures

## Draft Recommended Compliance Date Extensions for Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach Generating Stations

January 23, 2020



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## Acronyms and Abbreviations

<b>Acronym or Abbreviation</b>	<b>Full Name or Phrase</b>
Air District	Air Quality Management District
Alamitos	Alamitos Generating Station
BARCT	Best available retrofit control technology
CAISO	California Independent System Operator
CEC	California Energy Commission
CPUC	California Public Utilities Commission
Huntington Beach	Huntington Beach Generating Station
IRP	Integrated Resource Planning
Los Angeles Regional Water Board	Los Angeles Regional Water Quality Control Board
MW	Megawatt
NPDES	National Pollutant Discharge Elimination System
Ormond	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
Redondo Beach	Redondo Beach Generating Station
SACCWIS	Statewide Advisory Committee on Cooling Water Intake Structures
Santa Ana Regional Water Board	Santa Ana Regional Water Quality Control Board
South Coast AQMD	South Coast Air Quality Management District
State Water Board	State Water Resources Control Board

TSO

Time Schedule Order

U.S. EPA

United States Environmental Protection Agency

Ventura County  
APCD

Ventura County Air Pollution Control District

## 1. Executive Summary

The Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling<sup>1</sup> (Once-Through Cooling or OTC Policy) requires owners or operators of existing power plants that use ocean or estuarine water for once-through cooling to select one of two compliance alternatives in Section 2.A to minimize entrainment and impingement of fish, larvae, and other aquatic life. The OTC Policy includes compliance dates for the nineteen coastal and estuarine power plants existing when the OTC Policy became effective on October 1, 2010. Of these nineteen plants, nine are still operating and are scheduled to comply by specific compliance dates within the next decade, as presented in Table 1 of the OTC Policy.

The joint-agency Statewide Advisory Committee on Cooling Water Intake Structures (SACCWIS) was created to advise the State Water Resources Control Board (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, California State Lands Commission, California Air Resources Board, the California Independent System Operator (CAISO), and the State Water Board.

This report provides OTC Policy compliance schedule extension recommendations related to system-wide grid reliability issues projected to arise starting in summer of 2021 should four OTC power plants shut down by December 31, 2020, as currently required by the OTC Policy. These recommendations come as a continuation of the Local and System-Wide 2021 Grid Reliability Studies Report approved by SACCWIS on August 23, 2019, and hereinafter known as the August 23, 2019 SACCWIS Report.

The August 23, 2019 SACCWIS Report recommended the State Water Board consider extending the OTC Policy compliance date for Alamitos Units 3, 4, and 5 for two or more years to support local and system-wide grid reliability concerns, and some portion of the 2,579 megawatts (MW) available from Huntington Beach, Redondo Beach, and Ormond Beach generating stations to support system-wide grid reliability concerns.

This report includes analysis conducted following the August 23, 2019 SACCWIS Report that considers air and water permitting requirements, capabilities of the existing OTC resources, including the potential to meet multiple resource adequacy needs or to provide various electrical services to the CAISO. The report also includes further analysis and stakeholder input in the CPUC Integrated Resource Planning (IRP) proceeding, and other relevant information.

On November 7, 2019, Decision (D.)19-11-016 was approved by commissioners of the CPUC, completing the IRP process for R.16-02-007. D.19-11-016 directs 3,300 MW of new procurement from load serving entities under the CPUC's jurisdiction to ensure

system-wide electric reliability. The decision also recommends that the State Water Board consider revising the OTC Policy to extend the compliance dates for Alamitos Units 3, 4, and 5 for up to three years, Huntington Beach Unit 2 for up to three years, Redondo Beach Units 5, 6, and 8 for up to two years, and Ormond Beach Units 1 and 2 for up to one year.

Based on review of additional information following the August 23, 2019 SACCWIS meeting, SACCWIS recommends the State Water Board extend the OTC Policy compliance dates of Alamitos Units 3, 4, and 5 for three years through December 31, 2023, Huntington Beach Unit 2 for three years through December 31, 2023, Ormond Beach Units 1 and 2 for three years through December 31, 2023, and Redondo Beach Units 5, 6, and 8 for one year through December 31, 2021.

## **2. Background**

In the August 23, 2019 SACCWIS Report, SACCWIS recommended the State Water Board extend the compliance dates for Alamitos Generating Station (Alamitos) Units 3, 4, and 5 (1,163 MW) to ensure local grid reliability. SACCWIS further recommended the State Water Board consider extending the compliance dates for some portion of the 2,579 MW of capacity generated by Huntington Beach Generating Station (Huntington Beach) Unit 2 (215 MW), Ormond Beach Generating Station (Ormond Beach) Units 1 and 2 (1,516 MW), and Redondo Beach Generating Station (Redondo Beach) Units 5, 6, and 8 (848 MW) to ensure system-wide grid reliability. On November 19, 2019, the SACCWIS presented an information item to the State Water Board on the findings of the August 23, 2019 SACCWIS Report. The SACCWIS planned to conduct further analyses, review information, and await the conclusion of the CPUC IRP proceeding before formulating a recommendation on extensions of OTC Policy compliance dates for the latter three generating stations.

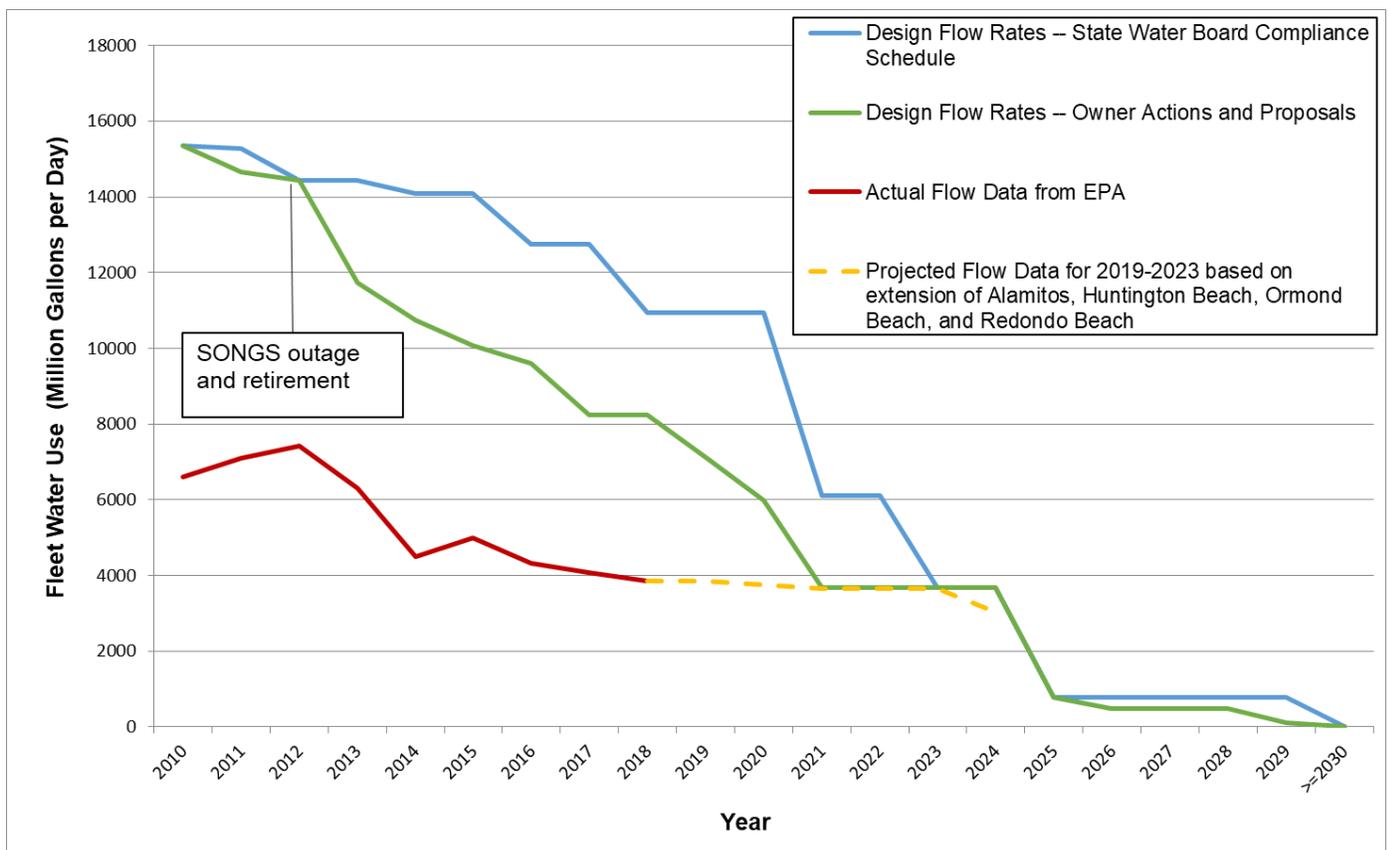
The system-wide grid reliability concerns stem from several sources, including shifts in peak demand to later in the day and later in the year when solar and wind resources are not as reliably available to meet peak demand; related changes in the calculation of available capacity from wind and solar resources to be less than previously determined; a significant increase in projected reliance on imports over historical levels; and earlier-than-expected retirements of some non-OTC generators. Additional power is likely needed for summer peak usage on hot days.

In the event of extension of the OTC Policy compliance dates for Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach generating stations, the four power plants would primarily be used as peaker plants that operate during high energy use times. The power plants are expected to run at or below their current operating capacity, which in 2018 was on average 5%.

Impacts from entrainment and impingement of marine life are expected to remain at or below the current level. If the compliance dates for OTC power plants are extended, the owners and operators will be required to continue fulfilling interim mitigation requirements for the duration of the extension or until the OTC power plants retire, whichever comes first. Interim mitigation requirements consist of making annual interim mitigation payments to the Ocean Protection Council and State Coastal Conservancy.

In Figure 1, the dashed yellow line represents projected OTC power plant fleet water usage in millions of gallons per day if Alamitos, Huntington Beach, Redondo Beach, and Ormond Beach operate for an additional three years through December 31, 2023. Projected flow rates for the four power plants were calculated from 2018 annual flow rates. As shown in the figure, the projected fleet water usage would still be below design flow rates from the original OTC Policy compliance schedule. Note, for the purposes of this figure, Moss Landing Power Plant has “zero” water usage after its December 31, 2020 Track 2 compliance date.

**Figure 1: Historic and Projected Fleet Ocean Water Flow Rates**



### **3. System-Wide Grid Reliability Concerns and Assessment**

On June 20, 2019, the Assigned Commissioner and Administrative Law Judge in the CPUC IRP proceeding (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.<sup>2</sup> 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 electric demand to later in the year and later in the day, which reduces the ability of solar generation to meet peak capacity requirements; 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 some unanticipated non-OTC generator retirements<sup>3</sup>.

In November 2019 after receiving comments, the CPUC issued D.19-11-016. In the decision, the CPUC subsequently directed 3,300 MW of new capacity procurement 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 capacity shortfall.<sup>4</sup> The decision limits the amount of new natural gas that could be used to meet the procurement requirements. The decision also recommended 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 for up to three years, an extension of 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 (Decision D.19-11-016, Ordering Paragraph 1). These OTC Policy 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.

### **4. Regulatory Requirements**

#### **4.1. Water Quality**

In the event of a compliance date extension for an OTC power plant, the OTC Policy would have to be amended by the State Water Board to reflect the new compliance date.

In the event of a compliance date extension for Alamitos, three regulatory documents from the Los Angeles Regional Water Quality Control Board (Los Angeles Regional Water Board) would have to be amended.

In the event of an OTC Policy compliance date extension for Huntington Beach, Ormond Beach, and Redondo Beach generating stations, associated National

Pollution Discharge Elimination System (NPDES) permits will need to be amended. In the case of Redondo Beach, a Time Scheduled Order (TSO) would also need to be amended. Of the four generating stations recommended for an OTC Policy compliance date extension, Alamitos, Redondo Beach, and Ormond Beach are within the Los Angeles Regional Water Board's jurisdiction. Huntington Beach is within the Santa Ana Regional Water Quality Control Board's (Santa Ana Regional Water Board) jurisdiction.

At this time, the State Water Board and the Los Angeles and Santa Ana Regional Water Boards intend to consider amendments to the OTC Policy and associated regional board regulatory documents for all four power plants, with associated staff development of the amendments happening concurrently. The State Water Board intends to consider amending the compliance dates in the OTC Policy for Alamitos, Huntington Beach, Redondo Beach, and Ormond Beach before December 31, 2020. Concurrently, 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.

#### **4.2. Air Quality**

In California, a new or modified stationary source that will emit air pollutants typically must meet emission control requirements and obtain preconstruction and operating permits for its equipment from the local air pollution control or air quality management district (air district) where the source is located. The air district prepares an engineering analysis and places conditions in the permits to ensure the source will comply with the requirements of federal, state, and local air pollution regulations. For large power plants also subject to the CEC licensing process, the air district's engineering analysis and proposed conditions for the preconstruction permit are submitted to the CEC as a Determination of Compliance. However, the air district also maintains and enforces the power plant's operating permits. Title V is a federal program designed to standardize operating permits for major sources of emissions, and the air districts have adopted rules to implement the Title V permit program.

Air permitting requirements for Alamitos were discussed in detail in the August 23, 2019 SACCWIS Report and are unchanged. Huntington Beach and Redondo Beach power plants are under the permitting jurisdiction of the South Coast Air Quality Management District (South Coast AQMD); Ormond Beach is under the jurisdiction of the Ventura County Air Pollution Control District (Ventura County APCD). All three power plants are major sources subject to air district preconstruction, operating, and Title V permit requirements.

The South Coast AQMD is currently in the process of transitioning away from its RECLAIM program to source-specific command-and-control rules. As a result, the South Coast AQMD is updating its rules to reflect current best available retrofit control technology (BARCT) requirements. Rule 1135 for power generating facilities was updated on November 2, 2018. The rule exempts OTC units from the BARCT emission standards as long as the units operate in compliance with existing permit conditions, meet the compliance dates specified in the OTC Policy, and notify the South Coast AQMD of any OTC Policy compliance date extensions within three months of approval by the State Water Board.

The Title V permit for the Huntington Beach Unit 2 utility boiler currently reflects plans from the preconstruction permitting action finalized in 2017 to shut down and replace Unit 2 with new simple-cycle gas turbines (Phase 2). These permit conditions specify shutdown of Unit 2 by December 31, 2020. Any extension of the OTC Policy compliance date for Unit 2 cannot go beyond the start of operation of the simple-cycle gas turbines, which is currently identified as third quarter 2023. In the event of an OTC Policy compliance date extension for Unit 2, AES, the owner and operator of Huntington Beach, would need to submit an application to South Coast AQMD to modify the permit to reflect the updated boiler shutdown date in relation to startup of the new gas turbines and ensure compliance with applicable rules and regulations. In addition, AES would need to modify the retirement plan for the permanent shutdown of boiler Unit 2 that was submitted to South Coast AQMD. Modification of the Title V permit will require coordination with United States Environmental Protection Agency (U.S. EPA) Region 9 and may require a public notice. Amending the Title V permit typically requires six months to one year to complete, depending on the nature of the modification.

Redondo Beach Units 5, 6, and 8 are not connected with any permitted utility boiler replacement projects. Boiler replacement project applications submitted to CEC and South Coast AQMD several years back have since been either suspended or cancelled. As a result, these generating units can operate beyond 2020, as long as they continue to comply with Rule 1135 and the conditions of their existing Title V permit.

The Ventura County APCD submitted a Title V permit renewal for Ormond Beach to U.S. EPA Region 9 earlier this year. The comment period closed on August 19, 2019, and U.S. EPA had no comments on the renewal. The reissuance of the renewed Title V permit occurred on December 10, 2019, with an updated permit term of October 16, 2019, to December 31, 2023. There are no OTC Policy compliance date conditions in the permit. Therefore, no air permit modifications are required to extend operation of Ormond Beach beyond 2020, as long as the facility continues to operate in compliance with its permit conditions.

## **5. Alternatives**

### **5.1. Alternative 1 – No Action**

In this alternative, SACCWIS would recommend no change to the OTC Policy compliance dates. 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.

### **5.2. Alternative 2 – Extend OTC Compliance Dates for All Power Plants for Three Years**

In this alternative, SACCWIS would recommend the State Water Board extend the OTC Policy compliance dates for all available generating units – 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) – for three years, until December 31, 2023.

This 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 have 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).

### **5.3. Alternative 3 – Extend OTC Compliance Dates for All Power Plants with Phased Compliance Dates**

In this alternative, SACCWIS would recommend the State Water Board extend the OTC compliance dates for all available generating units in a phased approach. Specifically, SACCWIS would recommend an extension of Alamitos Units 3, 4, and 5 for three years until December 31, 2023, an extension of Huntington Beach Unit 2 for three years until December 31, 2023, an extension of Redondo Beach Units 5, 6, and 8 for two years until December 31, 2022, and an extension of Ormond Beach Units 1 and 2 for one year until December 31, 2021.

Concluding each extension on December 31<sup>st</sup> would ensure the availability of capacity for contracting during the peak summer 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.

#### **5.4. Alternative 4 – Extend OTC Compliance Dates for All Power Plants with Phased Compliance Dates Modified from Alternative 3**

In this alternative, SACCWIS would recommend that the State Water Board extend the OTC compliance dates for all available generating units in a phased approach with different compliance dates for different facilities than Alternative 3. Specifically, SACCWIS would recommend an extension of Alamitos Units 3, 4, and 5 for three years until December 31, 2023, an extension of Huntington Beach Unit 2 for three years until December 31, 2023, an extension of Ormond Beach Units 1 and 2 for three years until December 31, 2023, and an extension of Redondo Beach Units 5, 6, and 8 for one year until December 31, 2021.

This alternative would be 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. The State Water Board received a comment from the Oxnard City Manager on November 18, 2019, noting his support for an extension of Ormond Beach Units 1 and 2 if the City Council and GenOn agree on a plan to perform comprehensive decommissioning, dismantling, and remediation of the site, and asking for additional time to negotiate such a plan.

## **6. Conclusions and Recommendations**

Based on the additional information and recommendations provided in CPUC Decision D.19-11-016, SACCWIS recommends that the State Water Board consider Alternative 4, extending the OTC Policy compliance dates of Alamitos Units 3, 4, and 5 for three years (through December 31, 2023), Huntington Beach Unit 2 for three years (through December 31, 2023), Ormond Beach Units 1 and 2 for three years (through December 31, 2023), and Redondo Beach Units 5, 6, and 8 for one year (through December 31, 2021). This alternative would be responsive to supporting system-wide grid reliability concerns starting in summer 2021, address community requests, and provide a necessary “bridge” as new procurement comes online to lessen reliability on imported energy.

## End Notes

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<sup>1</sup> The [2017 Once-Through Cooling Policy](#).

([https://www.waterboards.ca.gov/water\\_issues/programs/ocean/cwa316/policy.shtml#a\\_mendments](https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/policy.shtml#a_mendments))

<sup>2</sup> See “[Assigned Commissioner and Administrative Law Judge’s Ruling Initiating Procurement Track and Seeking Comment on Potential Reliability Issues](#),”

June 20, 2019.

(<http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M302/K942/302942332.PDF>)

<sup>3</sup> SACCWIS information item presentation to the State Water Board, November 19, 2019 Board meeting, Agenda Item 6.

<sup>4</sup> [Decision D.19-11-016, Conclusion of Law 27 and Ordering Paragraph 3](#),

November 7, 2019.

(<http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M319/K825/319825388.PDF>)