

Once-Through Cooling Policy Amendment Protects Marine Life and Ensures Electric Grid Reliability

On September 1, 2020 the State Water Resources Control Board amended a policy regulating the use of coastal and estuarine waters for cooling purposes at power plants in California. The Statewide Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (Once-Through Cooling or OTC Policy) establishes clear standards to implement the Clean Water Act in a consistent manner to reduce the harmful effects on marine life in the ocean and estuaries associated with the cooling water intakes.

Recent Updates

Since early 2019, several events have raised concern about system-wide grid reliability prompting the State Water Board to propose amendments to the OTC Policy. 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; 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 likely will be needed for peak usage on hot days through 2023.

Amendments

The State Water Board amended its policy compliance dates for four fossil-fueled facilities that were scheduled to comply with the OTC Policy by Dec. 31, 2020, to address grid reliability concerns. These include:

- A three-year extension of the compliance dates for Alamitos, Huntington Beach and Ormond Beach generating stations to Dec. 31, 2023
- A one-year extension of compliance dates for Redondo Beach power plant to Dec. 31, 2021

The Board also revised the compliance dates for Diablo Canyon Nuclear Power Plant Units 1 and 2 by reducing Unit 1's compliance date by two months to Nov. 2, 2024, and extending Unit 2's compliance date by nine months to Aug. 26, 2025. These revisions match the expiration date of each unit's Nuclear Regulatory Commission operating license, as requested by the Pacific Gas & Electric Company as part of its plan to retire Diablo Canyon. Additionally, the proposed OTC Policy amendment includes non-substantive edits for clarification and accessibility.

The Board held a public workshop in April 2020 for open discussion between Board members, staff, and members of the public regarding the proposed amendment. No action was taken.

Please see the [OTC Policy's Official Policy Documentation](#) for additional information.

General Information

Once-Through Cooling: The Law Requires It

The State Water Board is required by law to comply with federal Clean Water Act Section 316(b), which states that the location, design, construction and capacity of cooling water intake structures must reflect the best technology available to protect aquatic life. The power plants operate under National Pollutant Discharge Elimination System (NPDES) permits that the Board will modify to implement the policy. The public is invited to participate in the permitting process.

Once-Through Cooling: Dangerous to Marine Life

The 19 power plants regulated by the OTC Policy collectively withdraw billions of gallons of water every day to cool steam for generating electricity. In the process, millions of fish, larvae, eggs, seals, sea lions, turtles, and other creatures are killed each year because they are either trapped against screens or drawn into the cooling system and exposed to pressure and high heat. The marine life that is killed is mainly at the base of the food chain, which can adversely affect the future of certain species and impact recreational and commercial fishing.

Power Plants Have Choices Regarding Compliance

Power plant owners and operators can choose how to comply with the OTC Policy's required 93 percent reduction in their use of seawater. Ten of the original 19 plants have ceased operation. Most owners and operators have informed the State Water Board that they intend to comply via Track 1 by retiring the existing OTC units and replacing them with new, non-OTC electrical generating technologies. Moss Landing Power Plant is the only facility pursuing Track 2 compliance, which involves installing variable speed pumps and modifying screens covering the cooling water intakes to decrease the intake water flow rate.

The policy also provides a path for possible alternative requirements for nuclear power plants, which additionally must comply with federal safety regulations. The owners/operators of San Onofre Nuclear Generating Station and Diablo Canyon Nuclear Power Plant were required to undertake special studies to investigate alternatives for their facilities to meet the requirements. A review committee, composed of technical representatives with experience with nuclear plant issues, met to oversee the special studies. The San Onofre Nuclear Generating Station selected to shut down operations and, as of Oct. 2013, reduced intake flows to approximately 96 percent of normal operating intake flows, eliminating the need for further studies.

A Reliable Electric Grid Is Essential

State Water Board staff meet regularly during development of the OTC Policy with representatives from the agencies and entities that oversee the power plants, including the California Energy Commission, California Public Utilities Commission, and the California Independent System Operator to ensure that the policy's implementation provisions are realistic. After the policy was adopted, the Statewide Advisory Committee on Cooling Water Intake Structures (SACCWIS) was formally convened to advise the Board on the implementation and to ensure that plans and schedules submitted by the electrical generators are realistic and will not cause disruption to the state's electrical power supply.

Power Plants Affected by the OTC Policy and Current Compliance Dates

Facility Name	OTC Policy Compliance Date	Ceased Operations?
Humboldt Bay Power Plant	December 31, 2010	Yes
Potrero Power Plant	October 1, 2011	Yes
South Bay Power Plant	December 31, 2011	Yes
Haynes Generating Station Units 5 & 6	December 31, 2013	Yes
El Segundo Generating Station	December 31, 2015	Yes
Morro Bay Power Plant	December 31, 2015	Yes
Scattergood Generating Station Unit 3	December 31, 2015	Yes
Contra Costa Power Plant	December 31, 2017	Yes
Pittsburg Power Plant	December 31, 2017	Yes
Encina Power Station Unit 1	December 31, 2017	Yes
Encina Power Station Units 2, 3, 4 & 5	December 31, 2018	Yes
Mandalay Generating Station	December 31, 2020	Yes
Huntington Beach Generating Station Units 1, 3 & 4	December 31, 2020	Yes
Redondo Beach Generating Station Unit 7	December 31, 2020	Yes
Alamitos Generating Station Units 1, 2 & 6	December 31, 2020	Yes
Moss Landing Power Plant Units 6 & 7	December 31, 2020	Yes
San Onofre Nuclear Generating Station	December 31, 2022	Yes
Huntington Beach Generating Station Unit 2	December 31, 2023	
Redondo Beach Generating Station Units 5, 6 & 8	December 31, 2021	
Alamitos Generating Station Units 3, 4 & 5	December 31, 2023	
Moss Landing Power Plant Units 1 & 2	December 31, 2020	Not applicable, see note.
Ormond Beach Generating Station	December 31, 2023	

Facility Name	OTC Policy Compliance Date	Ceased Operations?
Diablo Canyon Nuclear Power Plant Unit 1	November 2, 2024	
Diablo Canyon Nuclear Power Plant Unit 2	August 26, 2025	
Scattergood Generating Station Units 1 & 2	December 31, 2024	
Haynes Generating Station Units 1, 2 & 8	December 31, 2029	
Harbor Generating Station	December 31, 2029	

Note: It is possible that some compliance dates may change in the future to ensure electric grid reliability. Moss Landing Power Plant Units 1 & 2 are the only units complying via Track 2 by implementing control technology, operational, and mechanical upgrades, and therefore will comply with the OTC Policy without ceasing operation. Please see Section 2.A(2) of the OTC Policy.

For more information, please visit:

http://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/

(This Fact Sheet was last updated on September 4, 2020)