



MEMORANDUM

TO: California Ocean Protection Council
FROM: Cyndi Dawson, Marina Cazorla and Jenn Eckerle
DATE: November 1, 2017
RE: Update on Ocean Protection Council's Once-Through Cooling Interim Mitigation Program

Once Through Cooling Interim Mitigation Program

BACKGROUND

“Once-through cooling” is a technology used by some thermoelectric and nuclear power plants to cool turbines by passing the water once through the facility, then discharging the water to the same vicinity from which it was extracted. In California, the water used at these once-through cooling (OTC) facilities often comes from estuarine and coastal sources. OTC technology can have significant environmental impacts during both the intake and discharge processes. Specifically, during intake, marine life (fish, shellfish, and other species at all life stages) can be entrained or impinged against or inside the water intake structures. After water is used in the facility, it is then discharged nearby as brine with a concentrated salinity which can have negative impacts to the surrounding ecosystems. Discharge impacts from OTC can be minimized with proper dilution and diffuser technology.

In 2010, California’s State Water Resources Control Board (SWRCB) adopted a Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (Policy). This Policy establishes technology-based standards to comply with the EPA-issued regulations of the Clean Water Act’s section 316(b)¹ and reduces the harmful effects associated with cooling water intake structures for power generating facilities on marine and estuarine life. The Policy applied to 19 existing power plants - including two nuclear plants - with the combined ability to withdraw almost 16 billion gallons per day from the state’s coastal and estuarine waters through OTC processes. An alternative technology, closed-cycle wet cooling, was identified in the Policy as the Best Technology Available to minimize impacts to marine life.

Nine plants in California have since ceased their once-through cooling operations. In 2016, the ten plants still operating once-through cooling systems withdrew slightly more than four billion gallons of

¹ <https://www.federalregister.gov/documents/2014/08/15/2014-12164/national-pollutant-discharge-elimination-system-final-regulations-to-establish-requirements-for>

water a day. These ten plants have informed the State Water Board that they are planning to comply with the OTC Policy by retiring their existing OTC technology. In some cases, plants will repower their locations with modern non-water cooled systems.

OTC facilities are required to pay fees to mitigate the environmental impacts of impingement and entrainment until they come into compliance with the requirements of the Policy. Given the close alignment between the types of environmental impacts caused by OTC facilities and the documented ecosystem benefits that marine protected areas (MPAs) can provide, the SWRCB's OTC Policy directs the mitigation funds to support "mitigation projects directed toward increases in marine life associated with the State's Marine Protected Areas in the geographic region of the facility."² OPC has entered into a Memorandum of Understanding (MOU) with the SWRCB and the State Coastal Conservancy regarding the acceptance and use of the interim mitigation funds for the OTC Policy.³

FOCUS OF THE OPC'S OTC MITIGATION PROGRAM

As directed by the SWRCB Policy Resolution 2010-0020⁴, California's Ocean Protection Council (OPC), in collaboration with the Marine Protected Area Leadership Team⁵, has developed the following disbursement mechanisms and guidelines for identifying projects appropriate to receive once-through cooling interim mitigation funds. The OPC's Once-Through Cooling Mitigation Program (Program) focuses on three main components that meet the requirements of the SWRCB Once-Through Cooling Policy and the State's MPA Management Program⁶, while having a clear nexus with OTC impacts⁷. These components include:

1. Enforcement of MPA regulations;
2. Outreach and education to improve compliance with MPA regulations; and
3. Research to determine the degree to which the MPA Network can offset OTC impacts.

Enforcement of relevant MPA laws and regulations is essential to ensure a successful MPA Network that has the best chance to achieve the ecological goals described in the Marine Life Protection Act (MLPA). Recurring poaching of marine life in MPAs decreases diversity, populations, reproductive output, and can therefore affect an ecosystem's ability to recover from or mitigate negative impacts.

Outreach and education to the general public is a critical component of establishing and maintaining compliance with MPA rules and regulations. Improved education about MPA regulations can serve as

²http://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/docs/cwa316may2010/otcpolicy_final050410.pdf

³http://www.opc.ca.gov/webmaster/media_library/2016/10/Compressed_Acceptance-Use-of-Interim-Mitigation-Funds-for-the-Once-Through-Coolin.pdf

⁴http://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/policy.shtml

⁵<http://www.opc.ca.gov/programs-summary/marine-protected-areas/partnerships/>

⁶http://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20150922/Item5_Attach2_MPALeadershipTeam_Workplan_FINALv2.pdf

⁷http://www.opc.ca.gov/webmaster/media_library/2016/10/FINALScience_PolicyFramework_LinkingMPAstoOTCmitigation_8.30.16.pdf

OTC impact mitigation because it increases protection of marine life within MPAs, which in turn maximizes the expected ecological benefits from these areas.

Research supported by OTC fees is necessary in order to evaluate and quantify the expected ecological benefits of the MPA Network in offsetting OTC impacts. It is essential to understand the scale and scope of the benefits provided by the MPA Network in mitigating for OTC impacts. Scientists and policymakers need to also evaluate and better understand how climate change and its related stressors in the marine environment will impact MPA ecological benefits. Applying OTC mitigation funds to implement research projects that specifically target improving our understanding of climate change impacts such as ocean acidification and hypoxia - and their influence on ecosystems both inside and outside MPAs - will help to ensure a comprehensive evaluation of the MPA network as a mitigation tool. The reduction of environmental stressors such as poor water quality, marine debris and other anthropogenic impacts, and the restoration of habitats such as salt marshes and estuaries would also help to improve the effectiveness of the MPA Network.

Numerous state, federal, tribal and non-governmental entities are involved to varying degrees in the MPA Management Program. In 2015, the Leadership Team created a Work Plan⁸ that outlined priority tasks among the members of the Team needed to advance the goals of the MLPA. In January 2016, a related report⁹ was submitted to the Legislature that contains a comprehensive accounting of all costs associated with the MPA Management Program. Together, these documents identify tasks and priorities with a clear nexus with OTC impacts that can now be funded by OTC mitigation fees for the duration of the Program. It is important to note funds are expected to be reduced each year as facilities comply with the OTC policy and the Program payments are expected to end in 2029.

CONVENING AN EXPERT PANEL TO INFORM PROGRAM GUIDELINES

OPC, in partnership with the Ocean Science Trust, will convene an OPC Science Advisory Team (SAT) Working Group comprised of a panel of scientists with expertise in mitigation, restoration, larval dynamics, oceanography, kelp forests, MPAs and OTC impacts. The Working Group will ensure that OPC uses the best science available to inform the final Program Guidelines that will determine how funds will be spent. The Working Group will review existing data and produce a series of recommendations based on that review.

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http://www.opc.ca.gov/webmaster/media_library/2016/10/FINALScience_PolicyFramework_LinkingMPAstoOTCmitigation_8.30.16.pdf

⁹ http://www.opc.ca.gov/webmaster/media_library/2016/02/MPA_Managment-Program_Budget-FINALv4.pdf

FUND DISBURSAL MECHANISMS FOR PROGRAM

Two different disbursement mechanisms will be used to ensure flexibility to achieve the goals of the Program. These are: (1) financial support for state government member agencies of the MPA Statewide Leadership Team through the development of vetted multi-year work plans; and (2) a competitive Request for Proposal process. The priority for the Program is to fund needs identified in the MPA Statewide Leadership Team Work Plan that have a direct nexus with OTC impacts.

Disbursement Mechanism 1: Multi-Year Work Plans

An efficient and effective mechanism to achieve the goals of the Program is to work with government entities to develop and fund detailed work plans that span up to three years. The work plans will be similar to those developed for grants or contracts and will contain, at a minimum, a detailed description of personnel, timeline, budget, discrete deliverables and measurable outcomes with defined levels of success. This approach will allow agency recipients to leverage other resources to multiply the benefits to the MPA Network such as building on existing programs and expanding them to include MPA Management Program priorities with a nexus with OTC impacts.

Agency work plans must align with the priorities and tasks outlined in the current MPA Statewide Leadership Team Work Plan, and must also meet the final Program Guidelines. Prior to any funds being awarded, agency work plans will be considered for endorsement by the OPC at a public meeting. This will allow consideration of stakeholder perspectives prior to the approval of fund disbursement. If a work plan at each agency cannot be finalized and adopted by the OPC by **January 31, 2018**, funds set aside for expenditure on agency work plans will instead be applied to the second disbursement mechanism, described below.

Disbursement Mechanism 2: Competitive RFP grant process

At least one public competitive round of requests for proposals/qualifications will be held annually for the duration of the OTC Program. OPC will form a Review Committee and conduct a review of submitted proposals using best practices for peer review of funding proposals, including an in-person meeting of reviewers. Proposals that receive the highest median score among reviewers will be funded until the allotment of funds in that round is fully expended. If the last proposal selected for funding requests more funds than remain, the applicant will be asked to resubmit in a future round or adjust the proposal to reflect the funds available for the current round.

DRAFT DETERMINATION AND ESTIMATED FUNDS AVAILABLE

For all power plants that have not yet come into compliance with the OTC policy, the SWRCB will calculate the amount of interim mitigation fees required to offset the impact of OTC on marine life; these calculations are referred to as draft determinations. Pursuant to the MOU signed by OPC, SWRCB and the Coastal Conservancy, each year \$5.4 million of these fees will be allocated to the Ocean Protection Trust Fund, with the exception of fees from Mandalay and Ormond Beach Generating Stations, which will pay fees directly to the Coastal Conservancy pursuant to a litigation settlement. In addition to fees from Mandalay and Ormond Beach, any fees above \$5.4 million will be allocated to the California Coastal Conservancy for wetland restoration projections.

Draft determinations for the operating period between October 15, 2015 and September 30, 2016 are currently available on the SWRCB’s website at: [Interim Mitigation Measures](#).¹⁰ Below is a summary of the draft determination interim mitigation fee amounts:

<u>Generating Station</u>	<u>Amount</u>
Alamitos	\$663,569.34
Diablo Canyon	\$3,852,106.18
Harbor	\$95,798.56
Haynes	\$943,825.51
Huntington Beach	\$51,582.90
Mandalay	\$115,785.14
Ormond Beach	\$152,381.08
Redondo Beach	\$260,804.09
Scattergood	\$385,835.84
Encina	Pending
Total	\$6,521,688.64

Funds to OPC:	\$5,400,000.00
Funds to Coastal Conservancy from Mandalay and Ormond Beach Settlement:	\$268,166.22
Additional funds to Coastal Conservancy:	\$853,522.42

¹⁰ https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/interim_mitigation.shtml

The following Milestones chart provides a proposed timeline for OPC's OTC Mitigation Program:

Milestones - OPC Once-Through Cooling Mitigation Interim Grant Program													
	January	February	March	April	May	June	July	August	September	October	November	December	
2017									Develop scope of work, stand-up and convene SAT Working Group to focus on defining regions around power plants and evaluating common open coast mitigation (e.g., kelp restoration, artificial reefs, other)				
									Internal Program Overview Memo distributed to Statewide Leadership Team Members and Coastal Conservancy (Sept 15)	Edits due from state partners; OTC OPC Webpage up (Oct 15)	State partner edits incorporated and final draft sent out for redline review by who?	All edits due from state partners (Dec 1) Public-facing program overview and webpage distributed and completed; address redline edits and finalize internal memo (Dec 15)	
2018	Agency workplan due to be finalized and approved, or funding reverts to competitive grant process (Jan 31)			Report from SAT Working Group published and distributed (April 30)	Final Draft of Program Guidelines completed based on SAT work and submitted for focused SAT Peer Review (May 15)	SAT Review completed and summary published publicly (June 1); 30-day public comment period opens for program criteria and for Agency workplans (June 15)	30-day public comment period closes on July 30; Public comment spreadsheet created and comments addressed in document (June 30)	Final Program Guidelines and proposed agency workplans posted for approval at summer OPC meeting	Competitive Grant Program RFP released (Sept 1)			Competitive Grant Program RFP closes (Nov 1)	Competitive grant award decisions made by OPC-convened grant review committee (Dec 15)
2019			All approved grants executed (Feb 28)						2nd round Competitive Grant Program RFP Released (Sept 1)			2nd round Competitive Grant Program RFP closes (Nov 1)	Competitive grant decisions made by OPC-convened grant review committee (Dec 15)