

**STATE OF CALIFORNIA  
REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL COAST REGION**

**STAFF REPORT FOR REGULAR MEETING OF JULY 16-17, 2020**

Prepared on June 16, 2020

**ITEM NUMBER:** 7

**SUBJECT:** Reissuance of Waste Discharge Requirements, National Pollutant Discharge Elimination System Permit No. CA0006254, Order No. R3-2020-0031 for the Dynegy Moss Landing, LLC Moss Landing Power Plant, Monterey County

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**KEY INFORMATION**

**Location:** U.S. Highway 1 and Dolan Road, Moss Landing, Monterey County

**Type of Discharge:** Once-through cooling water (up to 362 million gallons per day (MGD)), treated process wastewater, and screen wash water overflow from the natural gas-fired power plant

**Disposal:** Once-through cooling water and treated process wastewater discharged to the Pacific Ocean (Monterey Bay National Marine Sanctuary); screen wash water overflow discharged to Moss Landing Harbor

**Existing Orders:** Waste Discharge Requirements Order No. R3-2000-0041

**ACTION:** Adopt Proposed Order No. R3-2020-0031

**SUMMARY**

This staff report provides a brief overview of the proposed renewal of existing Waste Discharge Requirements Order No. R3-2000-0041 for the Moss Landing Power Plant (Facility). The Facility is operated by Dynegy Moss Landing, LLC (Discharger). Proposed Order No. R3-2020-0031 has been updated to reflect that the Facility complies with federal and state regulations regarding the use of once-through cooling (OTC) water. The proposed order includes minor effluent limitation changes based on the results of a reasonable potential analysis<sup>1</sup>. No comments were received during the

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<sup>1</sup> A reasonable potential analysis is used to determine whether a discharge has the potential to cause or contribute to an exceedance of the water quality standard in receiving water.

public review process. The discharge is protective of water quality and staff recommends adoption of the proposed order.

## **DISCUSSION**

### **Background**

The Discharger is currently discharging OTC water and other wastes pursuant to Order No. R3-2000-0041, National Pollutant Discharge Elimination System (NPDES) Permit No. CA0006254. The Facility discharges OTC water to the Pacific Ocean (Monterey Bay National Marine Sanctuary) via Discharge Point No. 002. The total flow volume into the Pacific Ocean through Discharge Point No. 002 is almost entirely composed (362 million gallons per day (MGD)) of OTC water that is blended with low volumes (intermittent, less than 1 MGD) of in-plant waste streams. The low volume waste streams are treated before mixing with the OTC water discharge to the Pacific Ocean, and the outfall has a mixing rate of 7.4 parts ocean water to 1 part wastewater. Small amounts of harbor water composed of intake screen trash basket over-flow and intake cleaning wash water (intermittent and approximately 0.006 MGD) are also discharged back to Moss Landing Harbor via Discharge Point No. 004.

The former owner of Moss Landing Power Plant (Duke Energy) submitted an updated report of waste discharge (i.e., permit renewal application) in 2005, and the existing NPDES permit has been on administrative extension and in full regulatory effect since that time. The Discharger submitted an updated report of waste discharge on April 21, 2017, and updated the information again on March 11, 2020. The 15-year delay in renewing Order No. R3-2000-0041 was caused by uncertainty related to federal and state regulations addressing the intake of OTC water and lawsuits resulting from those regulations. The previous controversy regarding this order, and other power plant permits, focused almost exclusively on environmental impacts resulting from the intake of large volumes of ocean water for cooling (OTC). The main concerns are the trapping of organisms against screens (impingement) when ocean water is pulled through an intake, and the larger issue of killing eggs and larvae due to their passing through the OTC system (entrainment). Now that regulations and litigation regarding OTC have been resolved, staff is bringing the proposed order back to the Central Coast Water Board for renewal.

### **Federal 316(b) Regulations, Lawsuits, and Resolution of Litigation**

Clean Water Act (CWA) section 316(b) Phase II regulations were adopted in 2004 by the United States Environmental Protection Agency (U.S. EPA) to address impingement and entrainment impacts resulting from the intake of river, lake, or ocean water at existing power plants and other industrial facilities for cooling. Section 316(b) of the CWA requires that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available (BTA) for minimizing adverse environmental impacts from the intake of surface waters.

Much of the delays associated with power plant permitting are related to the Phase II section 316(b) regulations litigated in a U.S. Supreme Court case known as Riverkeeper II. The issue in the case was what constituted BTA in the 316(b) regulations, with Riverkeeper contending that mitigation should not be taken into account in BTA determinations. The NPDES permit adopted in 2000 by the Central Coast Water Board for the Moss Landing Power Plant was also in litigation at the same time with Voices of the Wetlands. The Voices of the Wetlands litigation challenged whether mitigation allowed by Order No. R3-2000-0041 could be used for compliance with impacts resulting from the use of OTC water and the Central Coast Water Board's application of a cost benefit analysis when determining BTA. With the assumption that compliance with the section 316(b) Phase II regulations would be clarified by the courts, Central Coast Water Board staff planned to propose a renewed NPDES permit for Moss Landing Power Plant soon after the Riverkeeper II decision.

Although the federal Court of Appeals for the Second Circuit issued its Riverkeeper II decision<sup>2</sup> on January 25, 2007, rather than clarifying permitting of existing power plants, the decision increased uncertainty in the section 316(b) regulations. The Riverkeeper II decision invalidated mitigation for entrainment and impingement as a compliance option and required technology standards to comply with section 316(b) regulations while not allowing cost to be considered. Relevant to the Voices of the Wetlands lawsuit, the Court of Appeals for the Second Circuit agreed with the plaintiffs that use of mitigation is not authorized under section 316(b) of the CWA. Rather than clarifying permitting of existing power plants, the decision invalidated the section 316(b) regulations. The U.S. EPA subsequently suspended the regulations, resulting in further uncertainty and necessitating further delays to renewing the Moss Landing Power Plant permit.

Energy companies appealed the Riverkeeper II decision, and on April 1, 2009, the U.S. Supreme Court overturned the lower court ruling and upheld U.S. EPA's use of a cost benefit analysis when determining technological standards under CWA section 316(b).<sup>3</sup> Meanwhile, the Voices of the Wetlands lawsuit continued until August 15, 2011, when the California Supreme Court affirmed the appeals court decision and upheld the Central Coast Water Board's adoption of the Moss Landing Power Plant permit.<sup>4</sup> U.S. EPA proposed new section 316(b) regulations on April 20, 2011, and the updated section 316(b) regulations became effective on October 14, 2014. Essentially, the section 316(b) regulations included technology standards for impingement, but left the much more important and complex issue of entrainment to the states.

### **State Water Board OTC Policy**

Intake of marine water for OTC (and other industrial uses) is also regulated by California through California Water Code section 13142.5(b), which states,

For each new or expanded coastal powerplant or other industrial installation using seawater for cooling, heating, or industrial processing, the best available

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<sup>2</sup> *Riverkeeper, Inc. v. U.S. EPA* (2007 2d Cir.) 475 F.3d 83.

<sup>3</sup> *Entergy Corp. v. Riverkeeper, Inc.* (2009) 556 U.S. 208.

<sup>4</sup> *Voices of the Wetland v. State Water Resources Control Board* (2011) 52 Cal.4th 499.

site, design, technology, and mitigation measures feasible shall be used to minimize the intake and mortality of all forms of marine life.

In response to this limited language and the uncertainty and delays in statewide power plant permitting brought about by the CWA section 316(b) regulations, with feedback from Central Coast Water Board staff, the State Water Board began developing its own policy to address OTC in 2005. Central Coast Water Board staff participated in this policy development process for several years and recommended mitigation methodologies. The State Water Board subsequently adopted its *Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling* (OTC Policy) in 2010, which includes recommendations by Central Coast Water Board staff. The OTC Policy is available here:

[http://www.waterboards.ca.gov/water\\_issues/programs/ocean/cwa316/](http://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/)

The OTC Policy is implemented through NPDES permits for existing coastal and estuarine power plants. The State Water Board initially took over power plant NPDES permitting decisions through the OTC Policy but reverted these permitting decisions back to the applicable regional water boards in 2013. Although the development of the OTC Policy delayed power plant permitting in California, in the long run it has clarified power plant permit adoptions, which are now less controversial. Pursuant to the OTC Policy, the State Water Board (not regional water boards) has jurisdiction over regulating and resolving OTC issues related to entrainment and impingement.

The OTC Policy establishes technology-based standards to implement CWA section 316(b) and to reduce the harmful effects (i.e. impingement and entrainment) associated with cooling water intake structures on marine and estuarine life. Closed-cycle wet cooling<sup>5</sup> was selected as BTA in the OTC Policy, and permittees had to either reduce intake flow and velocity by committing to closed-cycle cooling or, reduce impacts to aquatic life comparably through implementation of operational and/or structural controls that achieve an 83.7% or greater reduction in impingement mortality and entrainment. The OTC Policy also included interim mitigation payments based on the volume of OTC water used by facilities. This money is collected by State Water Board and distributed to the Ocean Protection Council to implement protection of California's network of Marine Protect Areas in regions impacted by OTC, including the California Central Coast. Details regarding requirements of the OTC Policy are described in the Fact Sheet (Attachment F) of the proposed order.

### **Settlement Agreement between Discharger and State Water Board**

The Discharger submitted an implementation plan for compliance with the OTC Policy on April 1, 2011. The Discharger selected to reduce the impacts to aquatic life by changing operational controls to reduce flow. The Discharger and State Water Board

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<sup>5</sup> A closed-cycle wet system circulates cooling water in a closed circuit to remove heat from the condenser and significantly reduces the amount of water needed from the environment (about 5% of the requirements of a OTC system). This environmental water is used to make up for losses due to evaporation and blowdown.

agreed that the proposed mechanism to bring the Facility into compliance with the OTC Policy and executed a settlement agreement on October 9, 2014. The requirements laid out in the settlement agreement to comply with section 316(b) and the OTC Policy include reducing flow by shutting down two older power units (6 and 7) at the Facility in 2016 and now operating only the two most modern remaining units (1 and 2), installing variable speed pumps, and implementing other operational changes to these modernized units. Additionally, to satisfy interim mitigation requirements, the Discharger's compliance with the OTC Policy includes a previous agreement with the Central Coast Water Board to resolve entrainment and impingement issues by providing \$7 million to the Elkhorn Slough Foundation to implement the Elkhorn Slough Watershed Restoration Plan. The Elkhorn Slough Foundation leveraged this money many times over to implement protection of the watershed and within the Elkhorn Slough State Marine Conservation Area and Elkhorn Slough State Marine Reserve. The requirements of the settlement agreement are incorporated into the proposed order, as well as the Monitoring and Reporting Program and Fact Sheet.

### **Changes from the Existing Order**

The proposed order is structured in accordance with the statewide NPDES permit template. The proposed order is consistent with the previous order, with the exception of the following changes and modifications, which are also discussed in detail in the proposed order Fact Sheet:

1. The proposed order only includes the modernized power generating units (Unit 1 and 2) (discussed on page F-5).
2. The proposed order complies with the State Water Board OTC Policy and section 316(b) of the CWA to address impacts from impingement and entrainment (discussed at pages F-19 and F-66).
3. The proposed order is on the State Water Board NPDES permit template.
4. Standard naming conventions for outfalls/discharge points and monitoring locations have changed and are updated in this permit (discussed on page F-6).
5. Stormwater discharges are regulated separately by the State Water Board's Water Quality Order 2014-0057-DWQ, NPDES General Permit No. CAS000001, General Permit for Discharges of Storm Water Associated with Industrial Activities (discussed on pages F-22, F-62, and F-69).
6. Central Coast Long-Term Environmental Assessment Network (CCLEAN) receiving water monitoring requirements have been incorporated into the proposed order (pages A-1, A-5, E-9, and E-14, discussed at F-68).
7. In the previous Order No. R3-2000-0041 wastewater from various sources (e.g. air preheater/boiler fireside/stack wash water, chemical cleaning wastewater, boiler lay-up water, and seawater evaporator cleaning wastewater) flowed intermittently into lined wastewater ponds. In 2019, these surface impoundments were certified clean closed by the Department of Toxic Substances Control, and subsequently all groundwater monitoring wells have also been properly destroyed. The surface impoundments are no longer addressed in the order and Waste Discharge Requirements Order No. R3-2014-0029 for the surface

- impoundments has expired and is no longer in effect (discussed at pages F-16 and F-65).
8. In the previous Order No. R3-2000-0041, effluent limitations for California Ocean Plan Table 4 parameters were incorrectly established. Therefore, effluent limitations established by the previous order for total suspended solids, oil and grease, settleable solids, and turbidity are not retained in the proposed order (discussed at pages F-50 and F-51).
  9. Effluent monitoring requirements have been established for the screen backwash water discharge to Moss Landing Harbor (Discharge Point No. 004) (pages E-4 and E-10, discussed on pages F-6, F-7, F-9, and F-51).
  10. Effluent monitoring frequencies for a few parameters have changed in the proposed order due to the reasonable potential analysis results (discussed on pages F-36 and F-50).
  11. Climate change language has been added to the proposed order, including a description of the Facility's new battery energy storage system (pages 25, E-18, and E-20, discussed at F-65).

### **Compliance History**

The Facility's compliance has generally been good, there have been 17 effluent limitation exceedances during the extended 20-year term of Order No. R3-2000-0041. Several of the exceedances were due to elevated levels of pollutants in the source water body (e.g., copper in Moss Landing Harbor) rather than from the Facility. The discharge is almost exclusively composed of ocean water taken in through the harbor, and California Ocean Plan-related exceedances are rare. The well-mixed thermal discharge has been thoroughly studied and compliance with the daily maximum temperature change limit of 20.0°F has consistently been achieved, with the exception of a value of 20.3°F on January 6, 2004. The enforcement program resolved mandatory minimum penalties through the expedited payment program for three effluent violations that occurred from January 1, 2000, through December 31, 2007, totaling \$9,000. Other mandatory minimum penalties of \$3,000 per violation were paid by the Discharger two times for total residual chlorine violations on December 17, 2010, and March 5, 2018. The Discharger has taken corrective actions to address these compliance issues, including adjustments to facility processes and procedures. For example, to address residual chlorine effluent limit violations, the Discharger reprogrammed computers to shut down the chlorine system if less than two circulating water pumps are operating, thereby decreasing the dose of chlorine.

### **Human Right to Water**

California Water Code section 106.3, subdivision (a) states it is a policy of the State of California "that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitation purposes." On January 26, 2017, the Central Coast Water Board adopted Resolution No. R3-2017-0004, which affirms the realization of the human right to water and the protection of human health as the Central Coast Water Board's top priorities. The Facility does not discharge to groundwater, and there are no impacts to drinking water supplies.

## **Disadvantaged Communities**

The Central Coast Water Board implements regulatory activities and water quality projects in a manner that ensures the fair treatment of people of all ethnicities, cultures, backgrounds and income levels, including disadvantaged communities. Additionally, the Central Coast Water Board is committed to providing all stakeholders the opportunity to participate in the public process and provide meaningful input to decisions that affect their communities.

Staff has evaluated the disadvantaged community status for the Discharger. Dynegy Moss Landing, LLC is the Discharger for this permit and is not considered a disadvantaged community. The discharge locations (Pacific Ocean offshore Moss Landing and Moss Landing Harbor) are not located in disadvantaged communities. An area approximately one mile north of the Facility, located between Salinas Road and the Pajaro River (census tract 6053010101), is identified as a disadvantaged community. Staff has determined that the regulation of this facility, in compliance with the proposed order, will not pose a significant threat to water quality and is therefore unlikely to impact disadvantaged communities. If impacts to surface water or groundwater pollution results from the discharges regulated by the proposed order, Central Coast Water Board staff will help facilitate outreach and education to inform affected parties and connect them with available resources and also work with Discharger to ensure expedited correction of noncompliance issues

## **Climate Change**

The Central Coast faces the threat and the effects of climate change for the foreseeable and distant future. To proactively prepare and respond, Central Coast Water Board staff has launched the Central Coast Water Board's Climate Action Initiative, which identifies how our work relates to climate change and prioritizes actions that promote adaptation and mitigation to improve resilience and protect beneficial uses. The Climate Action Initiative is consistent with the Governor's Executive Order B-30-15 and the State Water Board's Climate Change Resolution No. 2017-0012. The proposed order requires the Discharger to submit a Climate Change Hazards, Vulnerabilities, and Response Plan describing the Discharger's long-term approach for preparing for and responding to climate change, including a description of the Facility's new battery energy storage system.

## **COMMENTS**

The proposed order was published for public comment on May 11, 2020, and comments were due by June 10, 2020. No comments were received during the public comment period. Some minor edits were made to the proposed order for clarity, such as correcting typographical errors.

## **CONCLUSION**

Proposed Order No. R3-2020-0031 is in compliance with state and federal guidance and regulations. The proposed order is protective of water quality and requires a

monitoring and reporting program sufficient to demonstrate compliance with the proposed order's prohibitions and effluent limitations. The proposed order also addresses the intake effects from impingement and entrainment in compliance with CWA section 316(b) regulations and the State Water Board OTC Policy.

**RECOMMENDATION**

Adopt Proposed Order No. R3-2020-0031

**ATTACHMENTS**

1. Proposed Order No. R3-2020-0031

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