# Exhibit 1

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

December 9, 2021

**ITEM: 16**
Time Schedule Order (TSO)
AES Redondo Beach LLC
Redondo Beach Generating Station

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Item No. 16

AES Redondo Beach LLC
Redondo Beach Generating Station
(NPDES Permit No. CA0001201)

# ITEM SUMMARY

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

December 9, 2021

**Item No.:** 16

**Subject:** AES Redondo Beach LLC
Redondo Beach Generating Station

**Purpose:** Time Schedule Order (TSO)

**Background:** AES Redondo Beach LLC (hereinafter Discharger) is the owner and operator of the Redondo Beach Generating Station (hereinafter Facility), a steam electric generating facility, located at 1100 Harbor Drive, Redondo Beach, California.

On June 9, 2016, the Los Angeles Water Board adopted Order R4-2016-0222, which included new effluent limitations for the discharge of once-through cooling (OTC) water and other wastewater for several pollutants including temperature, pH, copper, nickel and DDT. The new effluent limitations were primarily due to the reclassification of the discharge from an ocean discharge to an estuarine discharge.

On May 6, 2016, the Discharger submitted a written request to the Los Angeles Water Board for additional time to achieve compliance with certain new effluent limitations contained in Order R4-2016-0222. Based on monitoring data, the Los Angeles Water Board found that interim effluent limitations were appropriate for temperature, pH, copper and nickel. On June 9, 2016, the Los Angeles Water Board adopted Time Schedule Order (TSO) R4-2016-0223 concurrently with the adoption of Order R4-2016-0222. TSO R4-2016-0223 included interim effluent limitations for temperature, pH, copper and nickel at Discharge Point 002; and for pH at Internal Monitoring Location INT-001A.

On August 24, 2017, the Discharger submitted a written request for additional time to achieve compliance with the new effluent limitations for DDT contained in Order R4-2016-0222. Based on monitoring data, the Los Angeles Water Board found that interim effluent limitations were appropriate for DDT at Discharge Points 001 and 002. On November 30, 2017, the Executive Officer issued TSO R4-2016-0223-A01

that amended TSO R4-2016-0223 to include interim limitations for DDT at Discharge Points 001 and 002.

On October 11, 2018, the Discharger submitted a request to the Los Angeles Water Board to modify the compliance deadlines in TSO R4-2016-0223-A01. The request discussed grid reliability issues involving the California Independent System Operator (CAISO), Southern California Edison (SCE), and the California Public Utilities Commission (CPUC). The Los Angeles Water Board evaluated the request for modification of the compliance deadlines and determined that the modification was appropriate. On December 21, 2018, the Executive Officer issued TSO R4-2016-0223-A02 that amended TSO R4-2016-0223-A01 to include the revised compliance deadlines. TSO R4-2016-0223-A02 included the interim limitations described above and expired on December 31, 2020.

On January 22, 2020, the Discharger submitted a written request for additional time, up to December 31, 2021, to achieve compliance with the effluent limitations established in Order R4-2016-0222 for temperature, pH, copper, nickel and DDT. The request was submitted in light of the August 23, 2019 report of the joint Statewide Advisory Committee on Cooling Water Intake Structures (SACCWIS) recommending the State Water Board extend the compliance date for Redondo Beach Units 5, 6 and 8 by one or more years to support grid reliability concerns. On September 1, 2020 the State Water Board adopted amendments to the OTC Policy establishing a final compliance date for Redondo Beach Units 5, 6, and 8 of December 31, 2021, one year from the previous date of December 31, 2020. On December 10, 2020 the Los Angeles Water Board adopted Order R4-2016-0222-A01, which modified Order R4-2016-0222 to incorporate the new OTC Policy compliance date of December 31, 2021 and any future amendments to the OTC Policy. On December 10, 2020 the Los Angeles Water Board also adopted TSO R4-2020-0139 which revised the final compliance date for the Discharger by one year to December 31, 2021.

On April 1, 2021, the Los Angeles Water Board received the application and the accompanying Report of Waste Discharge (ROWD) that is required under CCR Title 23, section 3843, for the Redondo Beach Generating Station. The Los Angeles Water Board subsequently determined that

the application was complete and issued a letter dated April 29, 2021 that administratively extended Order R4-2016-0222-A01 until the adoption of a new permit.

On September 15, 2021, the Discharger submitted a written request for additional time, up to December 31, 2023, to achieve compliance with the effluent limitations established in Order R4-2016-0222 for temperature, pH, copper, nickel and DDT. The request was submitted in light of the March 26, 2021 report of the SACCWIS recommending the State Water Board extend the compliance date for Redondo Beach Units 5, 6 and 8 by two more years to support grid reliability concerns. On October 19, 2021 the State Water Board adopted amendments to the OTC Policy establishing a final compliance date for Redondo Beach Units 5, 6, and 8 of December 31, 2023, two years from the previous date of December 31, 2021.

**Current Status:**

The Facility cannot consistently meet effluent limitations contained in Order R4-2016-0222-A01 for the discharge of commingled OTC water and wastewater to the Pacific Ocean through Discharge Point 001 and the discharge of commingled OTC water and wastewater to King Harbor through Discharge Point 002. Staff is proposing a TSO with interim limitations to extend the time for the Discharger to come into compliance with these effluent limitations.

**Comments Received:**

On November 19, 2021 the Los Angeles Water Board received comments from the Discharger; Heal the Bay; and Michael W. Webb, City Attorney of the City of Redondo Beach.

**Response to Comments:**

Los Angeles Water Board staff considered the comments submitted and concluded that minor changes to the tentative TSO were appropriate for clarification on Page 2, Finding 5 and Page 8, Section 8.

**Key Issue(s) and Responses:**

The key issue raised in the comments received from Heal the Bay was a request to remove the interim limitations from the TSO. The Water Code requires the inclusion of interim

requirements, including interim effluent limitations in a TSO if the final date by which compliance is required to be achieved is later than one year from the effective date of the TSO, as is the case here.

The key issues raised in the comments received from the City Attorney of the City of Redondo Beach were objections to issuing a TSO the city believes is based on grid reliability issues and exempts the Discharger from mandatory minimum penalties (MMPs). As explained above, the TSO is based on monitoring data considered by the Los Angeles Water Board in 2016 and an extension of the TSO is allowed under the Water Code. The Discharger is exempt from MMPs for violations of permit limits for pollutants with interim limits in the TSO; however, the Discharger is still subject to and has been assessed MMPs for violations of other permit limits and violations of the interim limits in the TSO.

The Discharger submitted comments in support of the proposed TSO.

**Options:**

1. Adopt the proposed revised tentative TSO;
2. Modify and adopt the proposed revised tentative TSO; or
3. Do not adopt the proposed revised tentative TSO or postpone consideration to a future Board meeting.

**Recommendation:** Adopt the proposed revised tentative TSO.

**Attachments:** Revised Tentative TSO
Comment Letters
Response to Comments

Item No. 16

AES Redondo Beach LLC
Redondo Beach Generating Station
(NPDES Permit No. CA0001201)

# REVISED TENTATIVE TIME SCHEDULE ORDER (TSO)

**State of California**

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**

**LOS ANGELES REGION**

# TIME SCHEDULE ORDER R4-2021-XXXX REQUIRING AES REDONDO BEACH, LLC (REDONDO BEACH GENERATING STATION) TO COMPLY WITH REQUIREMENTS PRESCRIBED IN ORDER R4-2016-0222 AND ITS SUBSEQUENT AMENDMENT (NPDES PERMIT NO. CA0001201, CI NO. 0536)

The California Regional Water Quality Control Board, Los Angeles Region (hereinafter Los Angeles Water Board), finds:

1. AES Redondo Beach, LLC (hereinafter, Discharger or Permittee) is the owner and operator of the Redondo Beach Generating Station (hereinafter Facility), a steam electric generating facility, located at 1100 Harbor Drive, Redondo Beach, California.
2. There are three active, steam-powered electric generating units on site (Units 5, 6 and 8). Units 1, 2, 3, 4 and 7 are no longer in service. The generating units operate using once-through cooling (OTC) water drawn from two submerged intakes in King Harbor and one submerged intake just outside the King Harbor breakwater using circulation pumps. The Facility discharges OTC water, low-volume in-plant wastewater and groundwater seepage to the Pacific Ocean through Discharge Point 001, located off the northwest corner of the King Harbor breakwater. The Facility also discharges OTC water and stormwater to King Harbor through Discharge Point 002, located in the southeast corner of the harbor. OTC water accounts for greater than 99 percent of the total discharge from the Facility. Low-volume in-plant wastewater, groundwater seepage and stormwater are combined with OTC water prior to discharge.
3. On May 4, 2010, the California State Water Resources Control Board (hereinafter State Water Board) adopted a Statewide Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (OTC Policy). The OTC Policy was approved by the Office of Administrative Law (OAL) on September 27, 2010. The OTC Policy was amended on June 18, 2013; the 2013 amendments became effective on February 27, 2014. The OTC Policy established 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. All owners or operators of existing power plants were required to submit an implementation plan identifying the selected OTC compliance alternative, either Track 1 or Track 2, as defined therein, by April 1, 2011. The Discharger submitted an implementation plan on April 1, 2011. A revised implementation plan

was submitted on June 17, 2011. Additional implementation information was submitted on March 31, 2013, November 8, 2013, and February 12, 2016. Per the submitted information, the Discharger has indicated that the mechanism to achieve OTC Policy compliance at the Facility will be via Track 1, which requires a reduction in the intake flow rate and velocity at each unit to a level commensurate with that which can be attained by either a closed-cycle wet cooling system or closed-cycle dry cooling system. The Track 1 compliance at the Facility will include the permanent shut down of all generating units. The discharge of OTC water will cease when the Facility is permanently retired. The OTC Policy initially included a final compliance date of December 31, 2020 for the Facility.

4. 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. Several compounding events resulted in emerging concern about system-wide grid reliability during the summer of 2021. On January 23, 2020, SACCWIS approved the compliance date extensions report and voted in favor of a recommendation to the State Water Board that included an extension of the compliance date for Redondo Beach Generating Station for one year until December 31, 2021. The SACCWIS recommendation was based on the megawatt need identified in California Public Utilities Commission (CPUC) Decision (D.)19-11-016. On September 1, 2020, the State Water Board considered the SACCWIS recommendation and adopted an amendment to the OTC Policy that revised the final compliance date for the Discharger by one year to December 31, 2021. The OTC Policy amendment was approved by OAL on November 30, 2020.

5. Swaths of the western United States encountered a prolonged and extreme heat wave in August 2020 that ultimately required rotating outages to prevent wide-spread service interruptions. As a result of the heat wave and a subsequent directive from Governor Gavin Newsom to carry out a root cause analysis, the CPUC initiated Rulemaking (R.)20-11-003 to consider actions within its authority to address potential grid reliability issues starting in summer 2021. The CPUC then adopted D.21-02-028 on February 11, 2021, and subsequently adopted D.21-03-056 on March 25, 2021, to address projected shortfalls in summers 2022 and 2023. In response to the CPUC decisions, on March 26, 2021, the SACCWIS adopted the Final 2021 Report of the SACCWIS, recommending the State Water Board ~~consider extending~~ extend the final OTC compliance date of Redondo Beach Units 5, 6, and 8 for an additional two years through December 31, 2023. The SACCWIS recommendation was based projected system-wide shortfalls identified in D.21-02-028 and D.21-03-056. On October 19, 2021, the State Water Board considered the SACCWIS recommendation and adopted an amendment to the OTC Policy that revised the final compliance date for the Discharger by two years to December 31, 2023. This is a new regulatory requirement with which the Discharger must comply.

6. On June 9, 2016, the Los Angeles Water Board adopted Order R4-2016-0222, which renewed the waste discharge requirements for the Redondo Beach Generating Station. Order R4-2016-0222 became effective on October 1, 2016. On December

10, 2020 the Los Angeles Water Board adopted Order R4-2016-0222-A01, which modified Order R4-2016-0222 to reflect the new OTC Policy compliance date of December 31, 2021. Order R4-2016-0222 and its subsequent amendment serves as a permit under the National Pollutant Discharge Elimination System (NPDES No. CA0001201) Program and regulates the discharge of the pollutants at the Facility. The permit authorizes the discharge of up to 215 million gallons per day (MGD) of combined wastewater consisting of OTC water, low-volume in-plant wastewater and groundwater seepage into the Pacific Ocean, a water of the United States, through Discharge Point 001. The permit also authorizes the discharge of up to 674 MGD of combined wastewater consisting of OTC water and stormwater to King Harbor through Discharge Point 002. The modifications to Order R4-2016-0222 contained in Order R4-2016-0222-A01 became effective on the date of adoption (December 10, 2020). Order No. 2016-0222 expired on September 30, 2021; however, approximately 180 days prior to the expiration date, on April 1, 2021, the Discharger submitted a Report of Waste Discharge (ROWD) to renew its waste discharge requirements pursuant to California Water Code section 13260. On April 29, 2021, the Los Angeles Water Board issued a letter in which it determined that the ROWD was complete. As such, the terms and conditions of Order R4-2016-0222-A01, including the accompanying Monitoring and Reporting Program are administratively extended pursuant to 40 CFR section 122.6 and 23 California Code of Regulations section 2235.4.

7. The Facility's prior permit (Order 00-085) considered the receiving waters for Discharge Point 002 (King Harbor) as ocean waters and therefore established permit limitations and conditions to protect the beneficial uses and comply with water quality objectives (WQOs) for ocean waters as described by the California Ocean Plan (1997). The Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (Basin Plan), however, classifies King Harbor as an enclosed bay. The State Water Board, in a memo dated July 18, 2001, identified the receiving waters for the Redondo Beach Generating Station Discharge Point 002 as subject to requirements of the State Implementation Policy (SIP), which is applicable only to inland surface waters, enclosed bays, and estuaries of the state. In a letter dated January 21, 2003, the Los Angeles Water Board notified the Discharger of the reclassification of the outfall from an ocean discharge to an enclosed bay discharge. Order R4-2016-0222 and its subsequent amendment reflects the reclassification of the discharges from Discharge Point 002 and therefore implements the SIP for discharges from that outfall.

8. Prior to the adoption of Order R4-2016-0222, on January 20, 2016, the Discharger submitted a written request to the Los Angeles Water Board for additional time to achieve compliance with certain new effluent limitations contained in Order R4-2016-0222. On May 6, 2016, the Discharger submitted a revised written request to the Los Angeles Water Board for additional time to achieve compliance with certain other new effluent limitations contained in Order R4-2016-0222. Based on monitoring data, the Los Angeles Water Board found that interim effluent limitations were appropriate for temperature, pH, copper and nickel. On June 9, 2016, the Los Angeles Water Board adopted Time Schedule Order (TSO) R4-2016-0223 concurrently with the

adoption of Order R4-2016-0222. TSO R4-2016-0223 included interim effluent limitations for temperature, pH, copper and nickel at Discharge Point 002; and for pH at Internal Monitoring Location INT-001A.

9. On August 24, 2017, the Discharger submitted a written request for additional time to achieve compliance with the new effluent limitations for DDT contained in Order R4-2016-0222. Based on monitoring data, the Los Angeles Water Board found that interim effluent limitations were appropriate for DDT at Discharge Points 001 and 002. On November 30, 2017, the Executive Officer issued TSO R4-2016-0223-A01 that amended TSO R4-2016-0223 to include interim limitations for DDT at Discharge Points 001 and 002.

10. On October 11, 2018, the Discharger submitted a request to the Los Angeles Water Board to modify the compliance deadlines in TSO R4-2016-0223-A01. The request discussed grid reliability issues involving the California Independent System Operator (CAISO), Southern California Edison (SCE), and the CPUC. The Los Angeles Water Board evaluated the request for modification of the compliance schedule and determined that the modification was appropriate. On December 21, 2018, the Executive Officer issued TSO R4-2016-0223-A02 that amended TSO R4-2016-0223-A01 to include the revised compliance schedule. TSO R4-2016-0223-A02 included the interim limitations described above and had an expiration date of December 31, 2020.

11. On January 22, 2020, the Discharger submitted a written request for additional time, up to December 31, 2021, to achieve compliance with the effluent limitations established in Order R4-2016-0222 for DDT at Discharge Point 001; for temperature, pH, copper, nickel and DDT at Discharge Point 002; and for pH at Monitoring Location INT-001A. The written request referenced the grid reliability issues addressed by SACCWIS in Finding 4 above. The request indicated that Unit 7 was permanently retired on September 30, 2019. The September 1, 2020 amendment to the OTC Policy required continued operation of Units 5, 6 and 8 for an additional year until December 31, 2021.

12. The Los Angeles Water Board evaluated the January 22, 2020 request and found a TSO to be appropriate given the grid reliability issues that required continued operation of the Facility for an additional year until December 31, 2021. On December 10, 2020, the Los Angeles Water Board adopted TSO R4-2020-0139, which revised the final compliance date for the Discharger by one year to December 31, 2021.

13. On September 17, 2021, the Discharger submitted a written request for additional time, up to December 31, 2023, to achieve compliance with the effluent limitations established in Order R4-2016-0222 for DDT at Discharge Point 001; for temperature, pH, copper, nickel and DDT at Discharge Point 002; and for pH at Monitoring Location INT-001A. The written request referenced the grid reliability issues addressed by SACCWIS in Finding 5 above. The amendment to the OTC Policy, adopted by the State Water Board on October 19, 2021, allows continued operation of Units 5, 6 and 8 for two additional years until December 31, 2023.

14. In accordance with Water Code section 13385, subdivision (j)(3)(C)(ii), the Los Angeles Water Board finds that the Discharger is making diligent progress toward bringing the waste discharge into compliance with the effluent limitations. Specifically, the Discharger has made diligent progress towards compliance with the temperature, pH, copper, nickel and DDT effluent limitations because it has been steadily implementing actions associated with Track 1 compliance with the OTC Policy, as described above in Finding 3, including by permanently shutting down Unit 7 on September 30, 2019, as described above in Finding 10. Additionally, the Los Angeles Water Board finds that the Discharger has demonstrated that additional time is necessary to comply with the effluent limitations due to system-wide grid-reliability issues that require continued operation of Units 5, 6, and 8, as set forth in the amendment to the OTC Policy that was adopted on October 19, 2021, which extended the final compliance date for the Discharger by two years to December 31, 2023.

    Under these conditions, the Los Angeles Water Board, following a public hearing and notice and comment period, may extend the TSO for an additional period for these effluent limitations in accordance with the limits set forth in Water Code section 13385, subdivision (j)(3)(C)(ii)(II). Therefore, the compliance requirements contained in TSO R4-2020-0139 for DDT at Discharge Point 001; for temperature, pH, copper, nickel and DDT at Discharge Point 002; and for pH at Monitoring Location INT-001A may be extended for another two years under this new TSO.

15. Water Code section 13300 states:

    “Whenever a regional board finds that a discharge of waste is taking place or threatening to take place that violates or will violate requirements prescribed by the regional board, or the state board, or that the waste collection, treatment, or disposal facilities of a discharger are approaching capacity, the board may require the discharger to submit for approval of the board, with such modifications as it may deem necessary, a detailed time schedule of specific actions the discharger shall take in order to correct or prevent a violation of requirements.”

16. Water Code section 13385, subdivisions (h) and (i), require the Los Angeles Water Board to impose mandatory minimum penalties upon dischargers that violate certain effluent limitations. Section 13385(j)(3) exempts violations of an effluent limitation from mandatory minimum penalties "where the waste discharge is in compliance with either a cease and desist order issued pursuant to Section 13301 or a time schedule order issued pursuant to Section 13300*, if all of the [specified] requirements are met*." (emphasis added).

17. In order to comply with the effluent limitations for DDT for the discharge to the Pacific Ocean at Discharge Point 001; for temperature, pH, copper, nickel and DDT for the discharge to King Harbor at Discharge Point 002; and for pH at Internal Monitoring Location INT-001A; the Discharger will cease the discharge of OTC water and low-volume wastewater. The cessation of discharge will be accomplished through compliance via Track 1 with the OTC Policy. The Los Angeles Water Board issues this TSO because the Discharger needs time to implement appropriate control measures associated with the complete cessation of discharge and implementation

of Track 1 compliance pursuant to the OTC Policy. Through this TSO, the Discharger will be required to comply with the final effluent limitations for DDT for the discharge to the Pacific Ocean at Discharge Point 001; for temperature, pH, copper, nickel and DDT for the discharge to King Harbor at Discharge Point 002; and for pH at Internal Monitoring Location INT-001A no later than December 31, 2023.

18. A TSO is appropriate in these circumstances to allow time for the Permittee to implement necessary control measures that will bring the Facility into compliance with the final effluent limitations for DDT at Discharge Point 001; for temperature, pH, copper, nickel and DDT at Discharge Point 002; and for pH at Monitoring Location INT-001A.
19. Therefore, this TSO retains the interim effluent limitations contained in TSO R4-2020-0139 for DDT for the discharge to the Pacific Ocean at Discharge Point 001; for temperature, pH, copper, nickel and DDT for the discharge to King Harbor at Discharge Point 002; and for pH at Internal Monitoring Location INT-001A.
20. The exceedances of effluent limitations allowed by this TSO are in the public interest given the facility is a generating station utilized to supply power to the power grid, this TSO is for a limited period of time, and the discharge will continue to be in compliance with the applicable mass limitations in Order R4-2016-0222.
21. Pursuant to Water Code section 13385, subdivision (j)(3), full compliance with the requirements of this TSO exempts the Permittee from mandatory minimum penalties only for violations of the final effluent limitations for DDT for the discharge to the Pacific Ocean at Discharge Point 001; for temperature, pH, copper, nickel and DDT for the discharge to King Harbor at Discharge Point 002; and for pH at Internal Monitoring Location INT-001A contained in Order R4-2016-0222 and its subsequent amendment that occur after the effective date of this TSO.
22. This TSO concerns an existing facility that is a utility used to provide electric power and involves no expansion of its existing or former use. Therefore, issuance of this TSO is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21100, et seq.) in accordance with California Code of Regulations, title 14, sections 15301 and 15321, subdivision (a)(2).
23. The Los Angeles Water Board has notified the Permittee and interested agencies and persons of its intent to issue this TSO concerning compliance with waste discharge requirements and has provided them with an opportunity to submit written comments.
24. Any person aggrieved by this action of the Los Angeles Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the Los Angeles Water Board action, except that if the thirtieth day following the action falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

or will be provided upon request.

**IT IS HEREBY ORDERED** that, pursuant to Water Code section 13300, AES Redondo Beach, LLC, as owner and operator of the Redondo Beach Generating Station, shall comply with the requirements listed below to ensure its discharges comply with the final effluent limitations for DDT for the discharge to the Pacific Ocean at Discharge Point 001; for temperature, pH, copper, nickel and DDT for the discharge to King Harbor at Discharge Point 002; and for pH at Internal Monitoring Location INT-001A contained in Order R4-2016-0222 as amended by Order R4-2016-0222-A01:

1. Comply immediately with the following interim effluent limitation at Discharge Point 001, which shall be deemed effective from January 1, 2022 to December 31, 2023:

| Parameter | Units | 30-day Average |
|---|---|---|
| DDT[1] | µg/L | 2.5 |
| [1] DDT shall mean the sum of: 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD and 2,4'-DDD. | | |

2. Comply immediately with the following interim effluent limitations at Discharge Point 002, which shall be deemed effective from January 1, 2022 to December 31, 2023:

| Parameter | Units | AMEL | MDEL | Instantaneous Maximum |
|---|---|---|---|---|
| Temperature | ºF | --- | --- | 106[1] |
| pH | s.u. | --- | --- | 6.0 – 9.0 |
| Copper | µg/L | 10 | 34 | --- |
| Nickel | µg/L | 27 | 27 | --- |
| DDT[2] | µg/L | 2.5 | 3.1 | --- |
| [1] The temperature of wastes discharged shall not exceed 106°F during normal operation of the facility. During heat treatment, the temperature of wastes discharged shall not exceed 125ºF except during adjustment of the recirculation gate at which time the temperature of wastes discharged shall not exceed: 135°F. Temperature fluctuations during gate adjustment above 125°F shall not last for more than thirty (30) minutes.<br>[2] DDT shall mean the sum of: 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD and 2,4'-DDD. | | | | |

3. Comply immediately with the following interim effluent limitation at Monitoring Location INT-001A, which shall be deemed effective from January 1, 2022 to December 31, 2023:

| Parameter | Units | AMEL | MDEL | Instantaneous Maximum |
|---|---|---|---|---|
| pH | s.u. | --- | --- | 6.0 – 9.6 |

4. Achieve full compliance with the final effluent limitations for DDT for the discharge to the Pacific Ocean at Discharge Point 001; for temperature, pH, copper, nickel and DDT for the discharge to King Harbor at Discharge Point 002; and for pH at Internal Monitoring Location INT-001A contained in Order R4-2016-0222 as amended by Order R4-2016-0222-A01 as soon as possible, but no later than December 31, 2023.

5. Comply with the schedule as stipulated below:

| No. | Task | Deadline |
|---|---|---|
| 1. | Eliminate the discharge of OTC water and low volume wastes through Discharge Point 001 by permanently shutting down Units 5 and 6. | December 31, 2023 |
| 2. | Eliminate the discharge of OTC water through Discharge Point 002 by permanently shutting down Unit 8. | December 31, 2023 |

6. Submit semiannual progress reports of actions taken to achieve compliance with the final effluent limitations. The reports shall summarize the progress to date, activities conducted during the reporting period and the activities planned for the upcoming period. Each report shall be submitted to this Los Angeles Water Board by August 15th and February 15th for the reporting period of January 1st through June 30th and July 1st through December 31st, respectively, and include milestones completed and any new pertinent updates. The first semiannual progress report is due on August 15, 2022 for the January 1, 2022 through June 30, 2022, reporting period.

7. Any person signing a document submitted under this TSO shall make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

8. If the Permittee fails to comply with any provision of this TSO, the Los Angeles Water Board may take any further action authorized by law. The Executive Officer, or ~~his/her delegee~~ the appointed delegee thereof, is authorized to take appropriate enforcement action pursuant, but not limited to, CWC sections 13350 and 13385. The Los Angeles Water Board may also refer any violations to the Attorney General for judicial enforcement, including injunction and civil monetary remedies.

9. All other provisions of Order R4-2016-0222 as amended by Order R4-2016-0222-A01 not in conflict with this TSO remain in effect.

10. The Los Angeles Water Board may reopen this TSO at its discretion or at the request of the Permittee, if warranted. Lack of progress towards compliance with this TSO may be cause for the Los Angeles Water Board to modify the conditions of this TSO.

11. This TSO becomes effective on January 1, 2022 and it expires on December 31, 2023.

I, Renee Purdy, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of the order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on December 9, 2021.

_____

Renee Purdy, Executive Officer

Item No. 16

AES Redondo Beach LLC
Redondo Beach Generating Station
(NPDES Permit No. CA0001201)

**COMMENT LETTERS**

Heal the Bay

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July 15, 2021

Joaquin Esquivel, Board Chair
C/O Jeanine Townsend, Clerk to the Board
California State Water Resources Control Board
1001 I Street, 24th Floor
Sacramento, CA 95814

Sent via email to: commentletters@waterboards.ca.gov

**RE: AMMENDMENT TO THE WATER QUALITY CONTROL POLICY ON THE USE OF COASTAL AND ESTUARINE WATERS FOR POWER PLANT COOLING TO EXTEND THE COMPLIANCE SCHEDULE FOR THE REDONDO BEACH GENERATING STATION**

To Chair Esquivel and Members of the California State Water Resources Control Board:

Heal the Bay is a non-profit environmental organization with over 30 years of experience and 15,000 members dedicated to making the coastal waters and watersheds of Greater Los Angeles safe, healthy, and clean. We would first like to recognize that we are on Indigenous land. The main office of Heal the Bay in Santa Monica sits on Tongva, Chumash, and Kizh land; and the AES Redondo Beach Generating Station sits on Tongva and Kizh land.[1] We acknowledge and respect Tongva, Chumash, and Kizh elders past, present, and emerging.

On behalf of Heal the Bay, we respectfully submit the following comments on the Amendment to the Water Quality Control Policy on the use of Coastal and Estuarine Waters for Power Plant Cooling to Extend the Compliance Schedule for the Redondo Beach Generating Station (Proposed Extension):

- Continuation of once-through cooling (OTC) operations at the Redondo Beach Generating Station must not be allowed to continue beyond the one-year extension deadline of December 31, 2021. **We urge the State Water Resources Control Board (State Board) to reject the proposed additional two-year extension for this facility.**
- If additional operational extension is considered, AES Redondo Beach, LLC must assess potential negative impacts of the requested additional two years of OTC operation through an updated Environmental Impact Report (EIR), and be responsible for mitigating any additional impacts identified.
- The State Board must require additional mitigation fees if OTC operations continue beyond the original deadlines that are outlined in the OTC Policy.

These recommendations are discussed in further detail below.

[1] Native Land Digital. 2021. "Native Land." Available at: https://native-land.ca/

Heal the Bay

1444 9th Street
Santa Monica, CA 90401

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**Continuation of once-through cooling (OTC) operations at the Redondo Beach Generating Station must not be allowed to continue beyond the one-year extension deadline of December 31, 2021.**

The Redondo Beach Generating Station uses OTC power generation, the operation of which causes significant, harmful, and ongoing impacts to our valuable marine resources. In 2005, the California Energy Commission first recognized OTC as a contributing factor to the degradation of California's fisheries, estuaries, bays, and coastal waters. Public discussions began with the State Board that same year on the development of the State Water Resources Control Board Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (OTC Policy), which was later officially adopted in 2010. Heal the Bay was one of many stakeholders, including the Coastal Commission, Energy Commission, Public Utilities Commission, as well as other NGOs, that worked together to craft the requirements of the OTC Policy. We also served on the Expert Review Panel for the OTC Policy. It is critical, for the health of California's coastal ecosystems, that the 10 year phase-out timeline in the OTC Policy be followed.

We understand that the State Board has already granted a one-year time extension to cease OTC operations at the Redondo Beach Generating Station by December 31, 2021 (originally December 31, 2020). We also understand the need for grid reliability, particularly during times of peak energy demand, and that concerns have been raised over the August 2020 heat waves. However, the extension at Redondo Beach is unnecessary for ensuring grid reliability. The California Independent Systems Operator (CAISO) analysis only recommended extensions for a couple of the OTC power plants, not all of them; and CAISO's comments on the Public Utilities Commission's decision suggested further that the Redondo Beach plant was not a good candidate for even the one year extension.

We must also consider the negative impacts of allowing OTC operations, including effluent discharge, to continue beyond the ten-year grace period originally allowed in the 2010 OTC Policy (now with an additional one-year extension) and the implications of this extension on both public and environmental health, with no penalty assumed by the permittee for these ongoing impacts. The Staff Report previously released in 2020 by the State Water Resources Control Board, assessing four OTC facilities along the coast in Southern California, states that "[o]f 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" including a greater threat of impingement, entrainment, and impacts due to the discharge of OTC wastewater.[2] Considering the increased impacts of OTC operation at this inefficient facility, and given the more-than adequate time that the facility has had to come into compliance with the OTC Policy, *continuation of OTC operations at the Redondo Beach Generating Station must not be allowed to continue beyond the one-year extension deadline of December 31, 2021. We urge the State Board to reject the proposed additional two-year extension for this facility.*

[2] California State Water Resources Control Board. 2020. Amendment to the Water Quality Control Policy on the use of Coastal and Estuarine Waters for Power Plant Cooling: Draft Staff Report (p. 14). Available at: https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/docs/otc_policy_2020/dftsr.pdf

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**If additional operational extension is considered, AES Redondo Beach, LLC must assess potential negative impacts of the requested additional two years of OTC operation through an updated Environmental Impact Report (EIR), and be responsible for mitigating any additional impacts identified.**

The June 14, 2021 Draft Staff Report states, "impacts to marine life are expected to be at or below the baseline established in the 2010 Final SED if the compliance date for Redondo Beach is extended" because it is operated at a reduced capacity. However, operation of any kind is significantly higher than it would be if the Redondo Beach Generating Station had ceased OTC operation on December 31, 2020, as originally required in the 2010 OTC Policy, and it is hard to fathom how this could not be causing an increase in impacts. This 2021 Staff Report also asserts that "continued operation of 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," but it also admits, "The State Water Board found in the 2010 Final SED that it could not accurately assess air quality impacts."[3]

OTC operation has already been allowed to continue at the Redondo Beach Generating Station for an additional year beyond the original OTC Policy deadline of December 31, 2020, allowing for continued local community health impacts and degradation of California's fisheries, estuaries, bays, and coastal waters with absolutely no additional penalties, or even updated impact assessment requirements. If an additional extension is considered beyond the original ten-year grace period *and* the one-year extension already granted, additional impact assessment and mitigation must be required. We therefore recommend that a stipulation be added to have AES Redondo Beach, LLC conduct an updated EIR to identify any potential additional impacts of ongoing OTC operation through December 31, 2023, and to take any necessary actions to address any such impacts prior to the termination of OTC operation.

**The State Board must require additional mitigation fees if OTC operations continue beyond the original deadlines that are outlined in the OTC Policy.**

Interim mitigation should be a way to curtail the ongoing damage to our coastal resources while a power plant comes into compliance. However, when mitigation costs per gallon were determined in 2015, the State Board indicated that the mitigation was not intended to fully mitigate ongoing OTC impacts, but rather to encourage power plants to meet compliance deadlines. It is clear that this approach has been unsuccessful, as many extension requests have been submitted since the OTC Policy was approved, even with the existing mitigation fees, including the second consecutive extension request from the Redondo Beach Generating Station, currently under consideration by the State Board.

[3] California State Water Resources Control Board. 2021. Amendment to the Water Quality Control Policy on the use of Coastal and Estuarine Waters for Power Plant Cooling to Extend the Compliance Schedule fot the Redondo Beach Generating Station: Draft Staff Report. Available at: https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/docs/staff_report.pdf

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As we stated in our 2020 letter, when the original one-year extension was approved, additional escalating mitigation fees must be applied if operation continues beyond any extended deadline awarded. We therefore urge the State Board to increase mitigation fees to appropriately mitigate the continued degradation of California's coast and marine life. At a minimum, the mitigation for the extended use of these plants should be twice as much as the existing interim mitigation calculation, particularly for the inefficient Redondo Beach facility. Alternatively, the Board could include a flat $10,000,000 mitigation fee for operations to continue beyond the original compliance deadlines, *in addition to* the existing mitigation cost per gallon of OTC water, which should also be adjusted for inflation at this time.

---

Recognizing the significant negative impacts of OTC operations on California's fisheries, estuaries, bays, and coastal waters, we are disappointed that the Redondo Beach Generating Station was granted a one-year extension of OTC operations beyond the ten-year grace period originally allowed in the 2010 OTC Policy, with no additional mitigation fees. The request for an additional two-year extension of OTC operations beyond the ten-year grace period *and* the one-year extension is unacceptable. We urge the State Board to reject the Proposed Extension, or, at a minimum, to require additional mitigation fees and an updated impact assessment, as discussed above.

Thank you for the opportunity to comment on the Amendment to the Water Quality Control Policy on the use of Coastal and Estuarine Waters for Power Plant Cooling to Extend the Compliance Schedule for the Redondo Beach Generating Station. We look forward to continuing our collaborative work with the California State Water Resources Control Board to preserve, enhance, and restore the quality of California's Water resources for current and future generations. If you have any questions concerning these comments, please contact Annelisa Moe through email at amoe@healthebay.org or by phone at 310-451-1500 X139.

Sincerely,

Annelisa Ehret Moe
Water Quality Scientist
Heal the Bay

Katherine Pease
Director of Science and Policy
Heal the Bay

November 19, 2021

Lawrence Yee, Board Chair
Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

Sent via email to: losangeles@waterboards.ca.gov

**RE: PROPOSED ISSUANCE OF TIME SCHEDULE ORDER FOR AES REDONDO BEACH, LLC REDONDO BEACH GENERATING STATION.**

To Chair Yee and Members of the Los Angeles Regional Water Quality Control Board:

The undersigned groups are dedicated to protecting the environment, waters of the Greater LA area, and local communities. We would first like to recognize that we are all on Indigenous land. The AES Redondo Beach Generating Station sits on Tongva and Kizh land.[1] We acknowledge and respect Tongva and Kizh elders past, present, and emerging.

On behalf of the undersigned groups, we respectfully submit the following comments on the proposed issuance of a Time Schedule Order for AES Redondo Beach, LLC Redondo Beach Generating Station (Tentative TSO):

1. The Los Angeles Regional Water Quality Control Board (Regional Board) should remove the interim water quality limits from the Tentative TSO and, instead, hold AES Redondo Beach, LLC (Permittee) accountable to the applicable final water quality limits.
2. At a minimum, the Regional Board should consider using a Section 13308 TSO rather than a Section 13300 TSO.
3. The Permittee must assess potential negative impacts of the additional two years of once-through cooling (OTC) operation and discharge of contaminated effluent through an updated environmental impact assessment, and must be held responsible for the mitigation of any additional impacts identified.
4. The Regional Board should use inclusive language wherever possible in official documents.

These recommendations are discussed in further detail below.

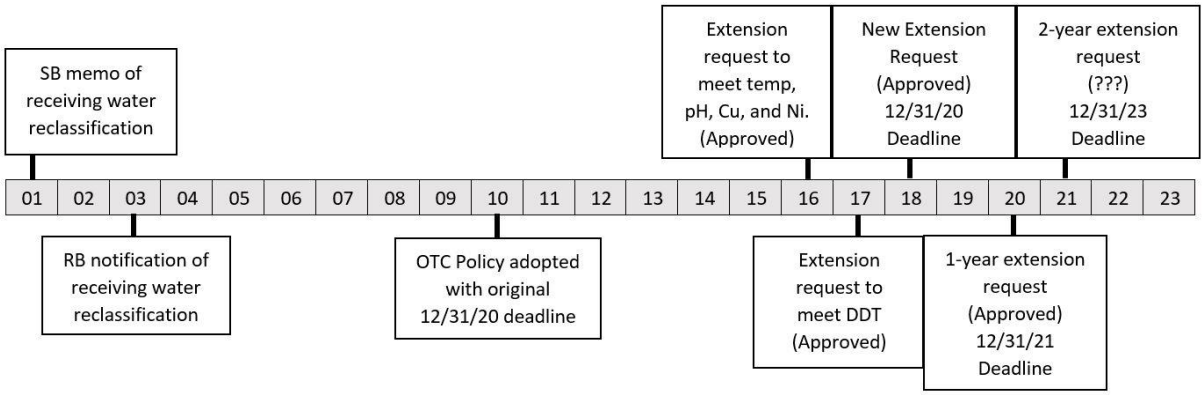
[1] Native Land Digital. 2021. "Native Land." Available at: https://native-land.ca/

1. **The Regional Board should remove the interim water quality limits from this TSO and, instead, hold the Permittee accountable to the applicable final water quality limits.**

Heal the Bay opposed the two-year extension that was approved by the State Water Resources Control Board (State Board) in October of 2021, which allows for continued operation of OTC power generation at the Redondo Beach Generating Station (Facility) though 12/31/2023, a total of 3 years beyond the original OTC Policy deadline of 12/31/2020. We urged the State Board to reject the proposed additional two-year extension for the Facility, or, at a minimum, require the Permittee to assess potential negative impacts of the additional two years of OTC operation. We also urged the State Board to require additional mitigation fees for OTC operations continued beyond the original OTC Policy deadline. These recommendations are discussed in further detail in the Heal the Bay comment letter to the State Board dated 7/15/2021, included with this letter in Attachment 1.

We understand that the extension approved by the State Board in October 2021 was in response to concerns about grid reliability, and it allows for continued OTC operation at the Facility through 12/31/2023, in spite of the negative impacts this continued operation has on the health of the receiving waters and the local community. However, this operational extension does not automatically allow for the continued discharge of contaminated effluent through a TSO with interim limits that are performance based, and not risk based.

The Permittee has been aware of the reclassification of the receiving water (and therefore, the associated new final water quality limits) since 2001. Since that time, the Permittee has requested multiple time extensions, continued to discharge effluent with contaminants in exceedance of those limits, and taken no action to reduce the level of contamination in that effluent except to state that compliance would be met once operation ceased by 12/31/2020. However, the Permittee did not meet that deadline, and has now requested two additional time extensions, pushing that promise of compliance further and further away.



We urge the Regional Board to remove the interim water quality limits from this TSO and, instead, hold the Permittee accountable to the applicable final limits, which are risk based and therefore more protective.

2. **At a minimum, the Regional Board should consider using a Section 13308 TSO rather than a Section 13300 TSO.**

If the Regional Board decides to maintain the existing performance-based interim effluent limits for the remainder of the two-year operational extension period, the Board should consider using a 13308 TSO "that prescribes, in advance, a civil penalty if compliance is not achieved in accordance with the time schedule..." to hold the Permittee accountable for being out of compliance with water quality limits, and to provide regulatory pressure on the Permittee to meet their new deadline to cease OTC operation by 12/31/2023.

3. **The Permittee must assess potential negative impacts of the additional two years of OTC operation and discharge of contaminated effluent through an updated environmental impact assessment, and be responsible for the mitigation of any additional impacts identified.**

TSOs that are longer than one year must include annual interim requirements. However, this Tentative TSO includes only one deadline: to permanently retire all OTC operation at the Facility by 12/31/2023. OTC operation has already been allowed to continue at the Facility for an additional year beyond the original OTC Policy deadline of 12/31/2020, allowing for continued local community health impacts and degradation of California's coastal waters with absolutely no additional penalties, or even updated impact assessment requirements. We therefore request that an additional interim requirement be added to the TSO requiring the Permittee to assess the environmental impacts of continued Facility operations during the two-year extension period, due by 12/31/2022. Further, the Permittee must be responsible for any necessary mitigation identified through this assessment process.

4. **The Regional Board should use inclusive language wherever possible in official documents.**

Inclusive language avoids the use of certain words that may exclude particular groups of people, and uses language that is inclusive of all groups. We urge the Regional Board to use inclusive language wherever possible, particularly in official documents. For example, we recommend the following non-gendered language addition to Page 8, Section 8, of the Tentative TSO.

"The Executive Officer, or his/her/their delegee, is authorized to take appropriate enforcement action pursuant, but not limited to, Water Code sections 13350 and 13385."

Recognizing the significant negative impacts of OTC operations on California's fisheries, estuaries, bays, and coastal waters, we are disappointed that the Facility was granted a one-year extension followed by an additional two-year extension of OTC operations *beyond* the ten-year grace period originally allowed in the 2010 OTC Policy. We are further disappointed that these extensions were approved with no additional mitigation fees or impact assessments. The operational extension approved by the State Board was based on grid reliability concerns, which, if legitimate, demonstrate a failure to plan rather than an uncontrollable circumstance.

Nonetheless, the approved operation extension does not automatically result in approval of the continued discharge of contaminated effluent that exceeds federal water quality standards. We urge the Regional Board to remove the interim limits from this Tentative TSO and hold the Permittee accountable to federal water quality standards, or, at a minimum, consider the use of a Section 13308 TSO. We further urge the Board to require an updated impact assessment and additional mitigation, as necessary.

Thank you for the opportunity to comment on the proposed issuance of a Time Schedule Order for AES Redondo Beach, LLC Redondo Beach Generating Station. We look forward to continuing our collaborative work with the Los Angeles Regional Water Quality Control Board to preserve, enhance, and restore the quality of LA's water resources for current and future generations. If you have any questions concerning these comments, please contact Annelisa Moe by email at amoe@healthebay.org or by phone at 310-451-1500 X115.

Sincerely,

Annelisa Ehret Moe
Water Quality Scientist
Heal the Bay

Benjamin Harris
Staff Attorney
Los Angeles Waterkeeper

Charming Evelyn
Water Committee Chair
Environmental Justice Committee Vice Chair
Sierra Club Angeles Chapter

Craig W. Cadwallader
Policy Coordinator
Surfrider Foundation South Bay Chapter

cc by e-mail: Thomas Siebels, Water Resources Control Engineer, Los Angeles Regional Water Quality Control Board. Thomas.Siebels@waterboards.ca.gov

Bronwyn Kelly, Senior ES Supervisor, Los Angeles Regional Water Quality Control Board. Bronwyn.Kelly@Waterboards.ca.gov

Office of
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City Attorney

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November 19, 2021

**VIA ELECTRONIC MAIL**

Los Angeles Regional Water Quality Control Board
320 West 4th Street, Suite 200
Los Angeles, CA 90013
losangeles@waterboards.ca.gov

Re: Comments on tentative TSO, AES Redondo Beach, LLC, Redondo Beach Generating Station, CA0001201

Dear Chair Yee and Board Members:

On behalf of the City of Redondo Beach, I write to express the City's strong opposition to the proposed issuance of yet another unwarranted Time Schedule Order (TSO) for the AES Redondo Beach Generating Station (RBGS). Issuance of the TSO will continue a harmful path charted by the State Water Resources Control Board (State Board) to allow the RBGS to continue emitting harmful pollutants into the Pacific Ocean and King Harbor, the centerpiece of the City's commercial and recreational industries. Even if the RBGS must continue in operation to address electric grid reliability, there is simply no justifiable reason in law or fact to extend the TSO at this time. Therefore, the City respectfully requests that the TSO be denied.

By way of background, the RBGS is subject to regulations contained in the Statewide Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (OTC Policy). The State Board adopted the OTC Policy in 2010 in order to comply with Section 316(b) of the federal Clean Water Act. Its important purpose is to ensure "the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact."[1] To that end, the OTC Policy requires Track 1 OTC power plants, such as the RBGS, to reduce their intake flow rate at each unit "to a level commensurate with

[1] 33 U.S.C. § 1326(b).

that which can be attained by a closed-cycle wet cooling system. A minimum 93 percent reduction in intake flow rate for each unit."[2] As currently written, the RBGS's final compliance deadline under Track 1 of the OTC Policy is December 31, 2021. Like other Track 1 OTC power plants, AES elected to decommission the remaining active units at the RBGS (units 5, 6, and 8) by the final compliance deadline, rather than incur the substantial expense of reconfiguring an antiquated power plant with a closed-cycle cooling system.[3] The City had been eagerly anticipating the OTC Policy's final compliance deadline later this year when the RBGS would cease to operate, sparing our community from the harmful effects of water and air quality pollution caused by this approximately 60-year old power plant.

Over the City's strong objection, on October 19, 2021, the State Board again extended the OTC Policy's final compliance deadline for the RBGS by two years to December 31, 2023. The City was particularly disappointed by the State Board's action because it contradicted representations made to the City during the 2020 compliance date extension that no further extension would be approved absent extraordinary circumstances. No such circumstances exist, and the RBGS will continue to harm the environment. The RBGS is not necessary to meet the State's energy demand, it emits toxic air pollutants into a densely populated area, and it will continue to harm marine life and coastal water quality. Experts confirmed all of these positions before the State Board. The OTC Policy extension is currently awaiting final approval by the Office of Administrative Law.

Despite this unfortunate scenario, the Regional Board should <u>not</u> exacerbate the problem by allowing the RBGS to continue to discharge excessive amounts of pollution into King Harbor and the Pacific Ocean.

As a preliminary matter, the City questions why issuance of the proposed TSO is necessary in order for the RBGS to address grid reliability, let alone why it must be approved on an expedited basis following the State Board's extension of the OTC Policy. As noted in the draft TSO findings, AES's waste discharge requirements/NPDES permit for the RBGS remains in effect indefinitely by operation of law.[4] Thus, the RBGS has the necessary permit authority to continue discharging contaminated OTC water. Even if this TSO is not approved, the RBGS can continue to operate.

A TSO issued pursuant to Water Code Section 13300 is a *discretionary enforcement* measure reserved for circumstances when a discharger is violating or threatening to violate waste discharge requirements. The TSO must contain a time schedule of specific actions to be taken by the discharger in order to regain compliance.

There is no evidence to justify the issuance of a TSO that further extends non-compliance with the RBGS NPDES permit's final effluent limits. The proposed TSO for DDT, temperature, pH, copper, and nickel is merely a convenient extension to align the interim

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[2] 2020 OTC Policy, § 2.A.(1), pg. 4.
[3] Draft Tentative Order R4-2021-XXXX, finding 3, pg. 2.
[4] Draft Tentative Order R4-2021-XXXX, finding 6, pg. 3 (citing 23 CCR § 2235.6).

effluent limits with the OTC Policy's final compliance deadline to December 31, 2023. This TSO is intended to assist the RBGS to continue operating with as few regulatory hurdles as possible. It is apparent that issuance of a TSO to the RBGS has become a routine annual exercise with no resulting improvement to water quality.

The only two justifications offered in the draft order for this TSO are to address grid reliability and new regulatory requirements. These are the same two flawed justifications relied upon to explain last year's TSO.

Grid reliability is not a justification for a TSO. As noted above, a TSO should be issued to address violations of waste discharge requirements such that compliance measures are necessary to address those violations. There is no nexus between water quality and grid reliability. Even without this TSO, the RBGS can lawfully continue to operate in order to address grid reliability.

Section 5 of the TSO states that the two-year OTC Policy extension is a "new regulatory requirement" with which the Discharger must comply. The City is left to ponder what new regulation has been imposed upon the RBGS? To the contrary, the OTC Policy amendment contains no new regulatory requirements. Instead, the OTC Policy extension *eliminates* an important compliance deadline, while maintaining the same interim control measures, so that the RBGS may continue operating through 2023. Conveniently aligning the TSO's time schedule with the new OTC Policy final compliance deadline (when the RBGS will shut down) is not a means of promoting permit compliance. It is an excuse for noncompliance.

As a matter of law, the Regional Board must impose upon the discharger "a detailed time schedule of specific actions" to correct permit violations.[5] Contrary to the TSO's draft findings, AES will not implement control measures to bring the RBGS into compliance with final effluent limits for DDT, temperature, pH, copper, and nickel. Instead, AES will wait out the clock until the OTC Policy effectively requires the RBGS to shut down. As a result, the proposed TSO will excuse permit violations while allowing the RBGS to operate without the risk of mandatory minimum penalties or other Regional Board enforcement actions.

Finally, the Regional Board should only issue a TSO under the provisions of Water Code Section 13300 if "the discharger has made a good faith effort but because of circumstances beyond its control, compliance will not be met by the statutory date."[6] The draft findings provide no evidence of any efforts by AES to achieve the permit's final effluent limits, other than Unit 7 has been permanently shut down. Instead, Units 5, 6, and 8 will continue to operate in the same manner that has repeatedly caused effluent limit exceedances.

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[5] Water Code § 13300.

[6] *In the Matter of the Review of Actions of the California Regional Water Quality Control Boards*, Cal. St. Wat. Res. Bd. Order No. WQ 78-5 (1978).

The attached enforcement report from the CIWQS system demonstrates that violations continue to occur at the RBGS, despite the closure of Unit 7.

For these reasons, the City believes that the proposed TSO should be denied and a more rigorous enforcement protocol should be imposed upon the RBGS if it is allowed to remain in operation through December 31, 2023. There is no reason to rush through a TSO that will permit continued water quality impairments.

Sincerely,

Michael W. Webb
City Attorney of the City of Redondo Beach

cc: (via email only)
Thomas J. Siebels - thomas.siebels@waterboards.ca.gov

# Party At-A-Glance Report

## General Information

| Party ID | Party Name | Party Classification | Mailing Address | Work Phone | Email/Website |
|---|---|---|---|---|---|
| 869 | AES Redondo Beach LLC | Privately-Owned Business | 1100 North Harbor Drive Redondo Beach, CA 90277 | 310-318-7442(+) | None |

## Related Places

| Place ID | Place Name | County | Region | Place Type | Relationship to Party | Relationship Start Date | Relationship End Date |
|---|---|---|---|---|---|---|---|
| 253953 | Redondo Generating Station | Los Angeles | 4 | Power Plant | Owner | 02/28/1977 | None |

Total Related Places: 1

## Related Parties

| Party ID | Party Name | Party Type | Role/Relationship | Relationship Start Date | Relationship End Date | Classification |
|---|---|---|---|---|---|---|
| 611318 | Matt Gordon | Person | Data Submitter | 07/28/2020 | None | None |
| 591461 | Jessilyn Davis | Person | Data Submitter | 12/03/2018 | None | None |
| 574227 | Dwayne Baluran | Person | Data Submitter | 02/27/2018 | 04/12/2019 | None |
| 566361 | Matthew Knapik | Person | Data Submitter | 08/02/2017 | None | None |
| 553155 | Jose Perez | Person | Legally Responsible Official | 09/28/2015 | None | None |
| 550384 | Kathryn Hubbard | Person | Data Submitter | 03/13/2015 | None | None |
| 549784 | Jeffrey Miller | Person | Data Submitter | 01/20/2015 | None | None |
| 542223 | Coury McKinlay | Person | Data Submitter | 11/19/2014 | None | None |
| 542037 | Louis Bronsard | Person | Legally Responsible Official | 07/31/2013 | 12/02/2015 | None |
| 542028 | Jeff Evans | Person | Legally Responsible Official | 04/23/2015 | None | None |
| 537073 | Brian White | Person | Legally Responsible Official | 10/01/2012 | 07/31/2013 | None |
| 521992 | Jeff Miller | Person | Employee | 04/07/2010 | 11/12/2014 | None |
| 521654 | Ranae Loveland | Person | Employee | 03/16/2010 | None | None |
| 376398 | Brad Scott | Person | Facility Contact | 04/11/2007 | None | None |
| 334854 | Tony Chavez | Person | Legally Responsible Official | 04/06/2010 | 07/31/2013 | None |
| 303033 | Mary Cooper | Person | Data Submitter | 06/06/2007 | 09/16/2015 | None |
| 144040 | Clement Thompson | Person | Enforcement Contact | 04/06/2004 | None | None |

Total Related Parties: 17

## Regulatory Measures (non-enforcement)

| Reg. Measure ID | Regulatory Measure Type | Region | WDID | Status | Program | Order No. | RM Effective Date | RM Termination Date | Relationship | Relationship Start Date | Relationship End Date | Amended? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 398295 | NPDES Permit | 4 | 4B192111003 | Active | NPDINDLRG | R4-2016-0222 | 10/01/2016 | None | Discharger | 09/29/2014 | None | Y |
| 148239 | NPDES Permit | 4 | 4B192111003 | Historical | NPDINDLRG | 00-085 | 06/29/2000 | 09/30/2016 | Discharger | 06/29/2000 | None | N |
| 135869 | Resolution | 4 | 4B192111003 | Historical | NPDINDLRG | R88-075 | 07/25/1988 | 07/26/1988 | Discharger | 07/25/1988 | None | N |
| 135513 | NPDES Permit | 4 | 4B192111003 | Historical | NPDINDLRG | 94-133 | 12/05/1994 | 06/28/2000 | Discharger | 12/05/1994 | None | N |
| 134483 | NPDES Permit | 4 | 4B192111003 | Historical | NPDINDLRG | 90-033 | 02/26/1990 | 12/05/1994 | Discharger | 02/26/1990 | None | N |
| 134386 | NPDES Permit | 4 | 4B192111003 | Historical | NPDINDLRG | 84-117 | 11/19/1984 | 02/26/1990 | Discharger | 11/19/1984 | None | N |
| 133433 | NPDES Permit | 4 | 4B192111003 | Historical | NPDINDLRG | 77-053 | 02/28/1977 | 11/19/1984 | Discharger | 02/28/1977 | None | N |

Total Regulatory Measures: 7

## Violations within the past year

| Violation ID | Occurrence Date | Violation Type | Violation Description(+) | Violation Status | Priority | Source | Facility Name | Violated Reg. Meas. ID | Violated Reg. Meas. Order No. | Linked to Enf. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1092486 | 04/30/2021 | CAT1 | Total Suspended Solids (TSS) 30-Day Average limit is 30 mg/L and reported value | Violation | N | eSMR | Redondo Generating Station | 398295 | R4-2016-0222 | N |

Report defaults to display violations within the last year. Click here to see last five years of violations. Refer to the Interactive Violation Report for more data.

Total Violations: 1

*Click the "(+/-) Violation Description" link to expand and contract the violation description.

## Enforcement Actions

| Enforcement | Enforcement | Enf. Order No. | Title | Program | Effective | Status |
|---|---|---|---|---|---|---|

**16-026**

| ID | Type | | | | Date | |
|---|---|---|---|---|---|---|
| 442858 | Admin Civil Liability | R4-2021-0022 | ACL R4-2021-0022 for AES Redondo Beach LLC | NPDINDLRG | 06/07/2021 | Historical |
| 438725 | Time Schedule Order | R4-2020-0139 | TSO R4-2020-0139 for AES Redondo Beach LLC | NPDINDLRG | 12/10/2020 | Active |
| 435020 | Admin Civil Liability | R4-2019-0109 | ACL R4-2019-0109 for AES Redondo Beach LLC | NPDINDLRG | 02/05/2020 | Historical |
| 420604 | Admin Civil Liability | R4-2018-0036 | ACL R4-2018-0036 for AES Redondo Beach LLC | NPDINDLRG | 07/25/2018 | Historical |
| 406697 | Time Schedule Order | R4-2016-0223 | TSO R4-2016-0223 for AES Redondo Beach LLC | NPDINDLRG | 06/09/2016 | Historical |
| 389451 | Oral Communication | None | Oral Com 12/11/2012 for AES Redondo Beach, LLC | NPDINDLRG | 12/11/2012 | Historical |
| 343734 | Admin Civil Liability | R4-2007-0053-S | Settlement Agreement Offer sent 11/2/07 for $15,000 for 7/11/07 NOV. | NPDINDLRG | 11/02/2007 | Historical |
| 332276 | Notice of Violation | NOV (revised) | NOV (revised) AES Redondo Beach, LLC, Redondo Generating Station | NPDINDLRG | 07/11/2007 | Historical |
| 324621 | Notice of Violation | NOV | NOV - AES Redondo Beach, LLC, Redondo Generating Station (04/11/07) | NPDINDLRG | 04/11/2007 | Historical |
| 297009 | Notice of Violation | NOV (revised) | NOV (revised) AES Redondo Beach, LLC, Redondo Generating Station (8/1/05) | NPDINDLRG | 08/01/2005 | Historical |
| 261486 | Notice of Violation | NOV | NOV - AES Redondo Beach, LLC, Redondo Generating Station (01/12/06) | NPDINDLRG | 07/01/2005 | Historical |
| 254613 | Admin Civil Liability | R4-2004-0159 | MMPC R4-2004-0159 AES Redondo Beach, LLC, Redondo Generating Station (11/01/04) | NPDINDLRG | 11/01/2004 | Historical |
| 253472 | Admin Civil Liability | R4-2004-0127 | MMPC R4-2004-0127 AES Redondo Beach, LLC, Redondo Generating Station | NPDINDLRG | 10/01/2004 | Historical |
| 252683 | Notice of Violation | NOV (revised) | NOV (revised) AES Redondo Beach, LLC, Redondo Generating Station | NPDINDLRG | 06/23/2004 | Historical |
| 252374 | Notice of Violation | NOV | NOV - AES Redondo Beach, LLC, Redondo Generating Station (04/06/04) | NPDINDLRG | 04/06/2004 | Historical |
| 236793 | Notice of Violation | NOV | NOV - AES Redondo Beach, LLC, Redondo Generating Station (07/25/01) | NPDINDLRG | 07/25/2001 | Historical |
| 235547 | Notice of Violation | NOV | NOV - AES Redondo Beach, LLC, Redondo Generating Station (05/14/01) | NPDINDLRG | 05/14/2001 | Historical |
| 235475 | Notice of Violation | NOV | NOV - AES Redondo Beach, LLC, Redondo Generating Station (04/12/01) | NPDINDLRG | 04/12/2001 | Historical |
| 227640 | Oral Communication | Oral Communication | Oral Communication - AES Redondo Beach, LLC, Redondo Generating Station | NPDINDLRG | 11/07/1999 | Historical |
| 219878 | Admin Civil Liability | R4-1985-0401 | ACLC 85-401 AES Redondo Beach, LLC, Redondo Generating Station (08/21/85) | NPDINDLRG | 08/21/1985 | Historical |

Total Enforcement Actions: 20

**Regulatory Measures linked to Related Parties**

| Reg. Measure ID | Organization | Regulatory Measure Type | Program | Effective Date | Status |
|---|---|---|---|---|---|

Total Regulatory Measures linked to Related Parties: 0

The current report was generated with data as of: 11/12/2021

November 19, 2021

Ms. Renee Purdee
Executive Officer
Regional Water Quality Control Board – Los Angeles Region
320 W. Fourth Street, Suite 200
Los Angeles, California 90013

RE: **AES Redondo Beach, LLC, Comments to Draft Time Schedule Order**

Dear Ms. Purdy,

On behalf of AES Redondo Beach, LLC (hereafter "AES Redondo Beach"), thank you for the opportunity to provide comments to the draft time schedule order (draft TSO) provided to us on December 9, 2021. We very much appreciate the efforts of the entire Regional Board staff in processing this draft TSO and want to thank you again for your time and attention in working toward a workable solution for AES Redondo Beach. Please find below some suggested language that clarifies the recommendation of SACCWIS.

Finding 5 has the following language:

> In response to the CPUC decisions, on March 26, 2021, the SACCWIS adopted the Final 2021 Report of the SACCWIS, recommending the State Water Board consider extending the final OTC compliance date of Redondo Beach Units 5, 6, and 8 for an additional two years through December 31, 2023. The SACCWIS recommendation was based projected system-wide shortfalls identified in D.21-02-028 and D.21-03-056.

The SACCWIS report (SACCWIS Report, p.30) did not equivocate and instead recommended the following:

> At this time, the SACCWIS recommends an OTC Policy compliance date extension for Redondo Beach for two years, through December 31, 2023, to address system-wide grid reliability needs as described below.

Therefore, a more accurate finding would be the following:

> In response to the CPUC decisions, on March 26, 2021, the SACCWIS adopted the Final 2021 Report of the SACCWIS, recommending the State Water Board ~~consider extending~~ extend the final OTC compliance date of Redondo Beach Units 5, 6, and 8 for an additional two years through December 31, 2023. The SACCWIS recommendation was based on projected system-wide shortfalls identified in D.21-02-028 and D.21-03-056.

Thank you for your attention to this matter.  Please contact me if you have any questions.

Sincerely,

Coury McKinlay

Coury McKinlay
Environmental Manager
AES Southland

CC: Thomas Siebels, LARWQCB
Mark Miller, AES
Weikko Wirta, AES
Jose Perez, AES

Item No. 16

AES Redondo Beach LLC
Redondo Beach Generating Station
(NPDES Permit No. CA0001201)

# RESPONSE TO COMMENTS

**RESPONSE TO COMMENTS**
**AES REDONDO BEACH, LLC**
**REDONDO BEACH GENERATING STATION**
**TENTATIVE TIME SCHEDULE ORDER NO. R4-2021-YYYY**
**NPDES PERMIT NO. CA0001201**

**Comment Letter dated November 19, 2021, from Heal the Bay**

| No. | Comment | Response | Action Taken |
|---|---|---|---|
| 1. | **The Regional Board should remove the interim water quality limits from this TSO and, instead, hold the Permittee accountable to the applicable final water quality limits.**<br><br>Heal the Bay opposed the two-year extension that was approved by the State Water Resources Control Board (State Board) in October of 2021, which allows for continued operation of OTC power generation at the Redondo Beach Generating Station (Facility) though 12/31/2023, a total of 3 years beyond the original OTC Policy deadline of 12/31/2020. We urged the State Board to reject the proposed additional two-year extension for the Facility, or, at a minimum, require the Permittee to assess potential negative impacts of the additional two years of OTC operation. We also urged the State Board to require additional mitigation fees for OTC operations continued beyond the original OTC Policy deadline. These recommendations are discussed in further detail in the Heal the Bay comment letter to the State Board dated 7/15/2021, included with this letter in Attachment 1. | The Los Angeles Water Board has determined the interim limitations in the tentative TSO to be appropriate. The interim effluent limitations may not be removed from the Tentative TSO because they are required by the California Water Code (CWC). Pursuant to CWC § 13385, subd. (j)(3)(C)(iii) "If the time schedule exceeds one year from the effective date of the order, the schedule shall include interim requirements and the dates for their achievement. The interim requirements shall include both …. (I) Effluent limitations for the pollutant or pollutants of concern. (II) Actions and milestones leading to compliance with the effluent limitation." Thus, the tentative TSO includes interim effluent limitations for temperature, pH, copper, nickel and DDT. Additionally, the State Water Resources Control Board (State Water Board) is responsible for considering arguments against extending deadlines for operation of power plants covered under the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (OTC Policy), not the Los Angeles Water Board. Comments concerning the recommendations on the | None necessary |

| No. | Comment | Response | Action Taken |
|---|---|---|---|
| | We understand that the extension approved by the State Board in October 2021 was in response to concerns about grid reliability, and it allows for continued OTC operation at the Facility through 12/31/2023, in spite of the negative impacts this continued operation has on the health of the receiving waters and the local community. However, this operational extension does not automatically allow for the continued discharge of contaminated effluent through a TSO with interim limits that are performance based, and not risk based.<br><br>The Permittee has been aware of the reclassification of the receiving water (and therefore, the associated new final water quality limits) since 2001. Since that time, the Permittee has requested multiple time extensions, continued to discharge effluent with contaminants in exceedance of those limits, and taken no action to reduce the level of contamination in that effluent except to state that compliance would be met once operation ceased by 12/31/2020. However, the Permittee did not meet that deadline, and has now requested two additional time extensions, pushing that promise of compliance further and further away.<br><br>We urge the Regional Board to remove the interim water quality limits from this TSO and, instead, hold the Permittee accountable to the applicable final limits, which are risk based and therefore more protective. | OTC Policy are best addressed to the State Water Board. | |

| No. | Comment | Response | Action Taken |
|---|---|---|---|
| **2.** | **At a minimum, the Regional Board should consider using a Section 13308 TSO rather than a Section 13300 TSO.**<br><br>If the Regional Board decides to maintain the existing performance-based interim effluent limits for the remainder of the two-year operational extension period, the Board should consider using a 13308 TSO "that prescribes, in advance, a civil penalty if compliance is not achieved in accordance with the time schedule..." to hold the Permittee accountable for being out of compliance with water quality limits, and to provide regulatory pressure on the Permittee to meet their new deadline to cease OTC operation by 12/31/2023. | The Los Angeles Water Board has considered this comment and declines to make any changes. There are several reasons for this. First, CWC section 13308 allows a TSO with a penalty if compliance is not achieved in accordance with the time schedule if a "regional board determines there is a threatened or continuing violation of any cleanup or abatement order, cease and desist order, or any order issued under Section 13267 or 13383 [of the CWC]." None of these circumstances are present here. Rather, the TSO is issued because the Discharger cannot meet the effluent limitations in its NPDES Permit and, as explained in the TSO itself, the discharger has met the requirements in CWC 13385(j)(C)(II) and diligently complied with past TSOs. Accordingly, a TSO issued pursuant to CWC 13385(j) is warranted.<br><br>Second, penalties are not warranted in this case, at this time. The Discharger chose to comply with the State Water Board's OTC Policy by complying with Track 1, and it is ceasing operations completely by the deadlines set forth in the OTC Policy and the various amendments thereto. In accordance with this compliance track, and with prior TSOs, the Discharger has already shut down certain of its steam powered electric generating units. The remainder of the units are still functioning to meet the energy needs of the State. On October 19, 2021, the State Board adopted an amendment to the OTC Policy that allows continued operation of | None necessary |

| No. | Comment | Response | Action Taken |
|---|---|---|---|
| | | the remaining units (Units 5, 6, and 8) for two additional years, until December 31, 2023, in order to prevent disruption in the State's electrical power supply. Together with the fact that the Discharger has made diligent progress in complying with the prior TSOs and the OTC Policy, and the plain language of CWC section 13308, these facts indicate that an automatic penalty such as that proscribed by CWC section 13308 is not appropriate in these particular circumstances. | |
| **3.** | **The Permittee must assess potential negative impacts of the additional two years of OTC operation and discharge of contaminated effluent through an updated environmental impact assessment, and be responsible for the mitigation of any additional impacts identified.**<br><br>TSOs that are longer than one year must include annual interim requirements. However, this Tentative TSO includes only one deadline: to permanently retire all OTC operation at the Facility by 12/31/2023. OTC operation has already been allowed to continue at the Facility for an additional year beyond the original OTC Policy deadline of 12/31/2020, allowing for continued local community health impacts and degradation of California's coastal waters with absolutely no additional penalties, or even updated impact assessment requirements. We therefore request that an additional interim requirement be added to the TSO requiring the Permittee to assess the environmental impacts of continued Facility | With regard to an environmental impact assessment, the staff report for the OTC Policy sets forth the appropriate CEQA/Supplemental Environmental Document (SED) analysis for the OTC operations of all power plants considered in the OTC Policy Amendment. Specifically, and pursuant to Water Code section 13389, the proposed action by the Los Angeles Water Board to adopt a TSO is exempt from the provisions of Chapter 3 CEQA (commencing with section 21100) of Division 13 of the Public Resources Code.<br><br>With regard to annual interim requirements, the tentative TSO requires the Discharger to submit semiannual progress reports summarizing activities conducted and planned. | None necessary |

| No. | Comment | Response | Action Taken |
|---|---|---|---|
| | operations during the two-year extension period, due by 12/31/2022. Further, the Permittee must be responsible for any necessary mitigation identified through this assessment process. | | |
| **4.** | **The Regional Board should use inclusive language wherever possible in official documents.**<br>Inclusive language avoids the use of certain words that may exclude particular groups of people and uses language that is inclusive of all groups. We urge the Regional Board to use inclusive language wherever possible, particularly in official documents. For example, we recommend the following non-gendered language addition to Page 8, Section 8, of the Tentative TSO.<br>"The Executive Officer, or his/her/their delegee, is authorized to take appropriate enforcement action pursuant, but not limited to, Water Code sections 13350 and 13385." | The Los Angeles Water Boards agrees and supports the use of inclusive language wherever possible. Therefore, the use of gender pronoun designations has been removed all together and the statement has been updated to state: "The Executive Officer, or the appointed delegee thereof, is authorized…" | Changes made in the revised tentative TSO. |

**Comment Letter dated November 19, 2021, from Michael W. Webb, City Attorney of the City of Redondo Beach**

| No. | Comment | Response | Action Taken |
|---|---|---|---|
| **1.** | Background discussion | The comment letter provided a comprehensive background discussion prior to posing specific questions and recommendations. Los Angeles Water Board Staff considered the background discussion and determined that no formal response is required for that portion of the letter. Therefore, the background discussion is not included in this Response to Comments. | None necessary |
| **2.** | As a preliminary matter, the City questions why issuance of the proposed TSO is necessary in order for the RBGS to address grid reliability, let alone why it must be approved on an expedited basis following the State Board's extension of the OTC Policy. As noted in the draft TSO findings, AES's waste discharge requirements/NPDES permit for the RBGS remains in effect indefinitely by operation of law.[1] Thus, the RBGS has the necessary permit authority to continue discharging contaminated OTC water. Even if this TSO is not approved, the RBGS can continue to operate.<br><br>A TSO issued pursuant to Water Code Section 13300 is a *discretionary enforcement* measure reserved for circumstances when a discharger is violating or threatening to violate waste discharge requirements. The TSO must contain a time | On April 1, 2021, the Los Angeles Water Board received the application and the accompanying Report of Waste Discharge (ROWD) that is required under CCR Title 23, section 3843, for the Redondo Beach Generating Station. The Los Angeles Water Board subsequently determined that the application was complete and issued a letter dated April 29, 2021 that administratively extended Order R4-2016-0222-A01 pursuant to 40 CFR section 122.6 and 23 California Code of Regulations section 2235.4.<br><br>In 2016 the Los Angeles Water Board considered monitoring data submitted by the Discharger and determined that a TSO was appropriate for this facility. As explained in Finding 15 of the tentative TSO, the justification for this determination came from Water Code section 13300, which states:<br><br>"Whenever a regional board finds that a discharge of waste is taking place or threatening to take place that violates or will violate requirements prescribed by the | None necessary |

[1] Draft Tentative Order R4-2021-XXXX, finding 6, pg. 3 (citing 23 CCR § 2235.6).

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| | schedule of specific actions to be taken by the discharger in order to regain compliance. | regional board, or the state board, or that the waste collection, treatment, or disposal facilities of a discharger are approaching capacity, the board may require the discharger to submit for approval of the board, with such modifications as it may deem necessary, a detailed time schedule of specific actions the discharger shall take in order to correct or prevent a violation of requirements."<br><br>Following a public notice, comment period and hearing, the Los Angeles Water Board may extend the TSO for an additional period in accordance with the limits set forth in Water Code section 13385, subdivision (j)(3)(C)(ii)(II). Therefore, the compliance requirements contained in TSO R4-2020-0139 may be extended for another two years under this new TSO.<br><br>The revised tentative TSO requires semiannual progress reports. The TSO also requires the permanent shutdown of Units 5, 6 and 8 by December 31, 2023. The permanent shutdown of these units will result in compliance with the requirements of Order R4-2016-0222-A01. | |
| **3.** | There is no evidence to justify the issuance of a TSO that further extends non-compliance with the RBGS NPDES permit's final effluent limits. The proposed TSO for DDT, temperature, pH, copper, and nickel is merely a convenient extension to align the effluent limits with the OTC Policy's final compliance deadline to December 31, 2023. This TSO is intended to assist the RBGS to continue operating with as few regulatory hurdles as possible. It is apparent that issuance of a TSO to the RBGS has become a | As stated in response to Comment 2 above, and in response to Comments 1 and 2 to Heal the Bay's comments, the Los Angeles Water Board has determined a TSO to be appropriate for this facility. Under these conditions, the Los Angeles Water Board may extend the TSO for another two years. | None necessary |

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| | routine annual exercise with no resulting improvement to water quality. | | |
| **4.** | The only two justifications offered in the draft order for this TSO are to address grid reliability and new regulatory requirements. These are the same two flawed justifications relied upon to explain last year's TSO.<br><br>Grid reliability is not a justification for a TSO. As noted above, a TSO should be issued to address violations of waste discharge requirements such that compliance measures are necessary to address those violations. There is no nexus between water quality and grid reliability. Even without this TSO, the RBGS can lawfully continue to operate in order to address grid reliability.<br><br>Section 5 of the TSO states that the two-year OTC Policy extension is a "new regulatory requirement" with which the Discharger must comply. The City is left to ponder what new regulation has been imposed upon the RBGS? To the contrary, the OTC Policy amendment contains no new regulatory requirements. Instead, the OTC Policy extension *eliminates* an important compliance deadline, while maintaining the same interim control measures, so that the RBGS may continue operating through 2023. Conveniently aligning the TSO's time schedule with the new OTC Policy final compliance deadline (when the RBGS will shut down) is not a means of promoting permit compliance. It is an excuse for noncompliance. | Grid reliability issues were the justification for new OTC Policy compliance dates, but they are not the justification for the TSO. As stated in response to Comment 2 above, in 2016 the Los Angeles Water Board considered the Discharger's decision to comply with the OTC Policy through Track 1, which entails ceasing operations completely by the deadlines in the OTC Policy. The Board also considered monitoring data submitted by the Discharger and determined that a TSO was appropriate for this facility. The Los Angeles Water Board may extend the TSO in accordance with Water Code section 13385.<br><br>The new compliance dates established in the October 19, 2021 OTC Policy amendment are new regulatory requirements with which the Discharger must comply. Therefore, the compliance dates are incorporated into the tentative TSO. | None necessary |

| | | | |
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| **5.** | As a matter of law, the Regional Board must impose upon the discharger "a detailed time schedule of specific actions" to correct permit violations.[2] Contrary to the TSO's draft findings, AES will not implement control measures to bring the RBGS into compliance with final effluent limits for DDT, temperature, pH, copper, and nickel. Instead, AES will wait out the clock until the OTC Policy effectively requires the RBGS to shut down. As a result, the proposed TSO will excuse permit violations while allowing the RBGS to operate without the risk of mandatory minimum penalties or other Regional Board enforcement actions. | The tentative TSO contains a detailed time schedule of specific actions that state that the Discharger will achieve compliance with the effluent limitations contained in Order R4-2016-0222-A01 by permanently shutting down Units 5, 6 and 8 by December 31, 2023.<br><br>The TSO does provide exemptions from mandatory minimum penalties (MMPs) for violations of permit limitations for pollutants that have interim limitations established in the TSO. However, the Discharger is still subject to MMPs for violations of permit limitations for pollutants not covered under the TSO. The Discharger is also subject to MMPs for violations of the interim limitations established in the TSO. In fact, the Discharger was assessed MMPs in the amount of $36,000 on July 25, 2018 and $30,000 on October 17, 2019 for violations of these limitations. Finally, the TSO does not prevent third party citizen suits for permit enforcement, nor does it bar the Los Angeles Water Board from taking any appropriate actions to enforce applicable receiving water limits. | None necessary |
| **6.** | Finally, the Regional Board should only issue a TSO under the provisions of Water Code Section 13300 if "the discharger has made a good faith effort but because of circumstances beyond its control, compliance will not be met by the statutory date."[3] The draft findings provide no evidence of any efforts by AES to achieve the permit's final effluent limits, other than Unit 7 has | To date, the only specific task required for the Discharger was the permanent shutdown of Unit 7, which was completed according to schedule on September 30, 2019. The shutting down of Unit 7 was a significant achievement in that it decreased the discharge volume for Discharge Point 002 from 615 million gallons per day (MGD) to 337 MGD. As a result, the discharges to King Harbor are now in compliance | None necessary |

[2] Water Code § 13300.
[3] *In the Matter of the Review of Actions of the California Regional Water Quality Control Boards*, Cal. St.Wat. Res. Bd. Order No. WQ 78-5 (1978).

| | | | |
|---|---|---|---|
| | been permanently shut down. Instead, Units 5, 6, and 8 will continue to operate in the same manner that has repeatedly caused effluent limit exceedances.<br><br>The attached enforcement report from the CIWQS system demonstrates that violations continue to occur at the RBGS, despite the closure of Unit 7.<br><br>For these reasons, the City believes that the proposed TSO should be denied and a more rigorous enforcement protocol should be imposed upon the RBGS if it is allowed to remain in operation through December 31, 2023. There is no reason to rush through a TSO that will permit continued water quality impairments. | with the mass limitations contained in Order R4-2016-0222-A01.<br><br>With regard to the effluent violations, as discussed in the response to Comment 5 above, the Discharger was assessed MMPs for violations of permit limitations not covered by the TSO as well as some interim limitations in the TSO. | |

**Comment Letter dated November 19, 2021, from AES Redondo Beach LLC (Discharger)**

| No. | Comment | Response | Action Taken |
|---|---|---|---|
| **1.** | Finding 5 has the following language:<br><br>In response to the CPUC decisions, on March 26, 2021, the SACCWIS adopted the Final 2021 Report of the SACCWIS, recommending the State Water Board consider extending the final OTC compliance date of Redondo Beach Units 5, 6, and 8 for an additional two years through December 31, 2023. The SACCWIS recommendation was based projected systemwide shortfalls identified in D.21-02-028 and D.21-03-056.<br><br>The SACCWIS report (SACCWIS Report, p.30) did not equivocate and instead recommended the following:<br><br>At this time, the SACCWIS recommends an OTC Policy compliance date extension for Redondo Beach for two years, through December 31, 2023, to address system-wide grid reliability needs as described below.<br><br>Therefore, a more accurate finding would be the following:<br><br>In response to the CPUC decisions, on March 26, 2021, the SACCWIS adopted the Final 2021 Report of the SACCWIS, recommending the State Water Board ~~consider extending~~ extend the final OTC compliance date of Redondo Beach Units 5, 6, and 8 for an additional two years | The suggested edits are incorporated into the revised tentative TSO as requested. | Changes made in the revised tentative permit. |

| | | | |
|---|---|---|---|
| | through December 31, 2023. The SACCWIS recommendation was based on projected system-wide shortfalls identified in D.21-02-028 and D.21-03-056. | | |

# Exhibit 2

# AES Redondo Beach LLC
# Redondo Beach Generating Station

## Item 16: Time Schedule Order

# Once-through Cooling (OTC) Policy

- Clean Water Act (CWA) Section 316(b)
  - Requires cooling water intake structures to minimize environmental impact
  - Impingement and entrainment
- SWRCB OTC Policy (5/4/2010)
  - Technology standard to implement CWA 316(b)
  - Final Compliance Dates
  - Track 1 or Track 2 compliance
- Redondo Beach Generating Station
  - Final Compliance Date: December 31, 2020
  - Track 1 compliance: shutdown of OTC units

# OTC Policy Process

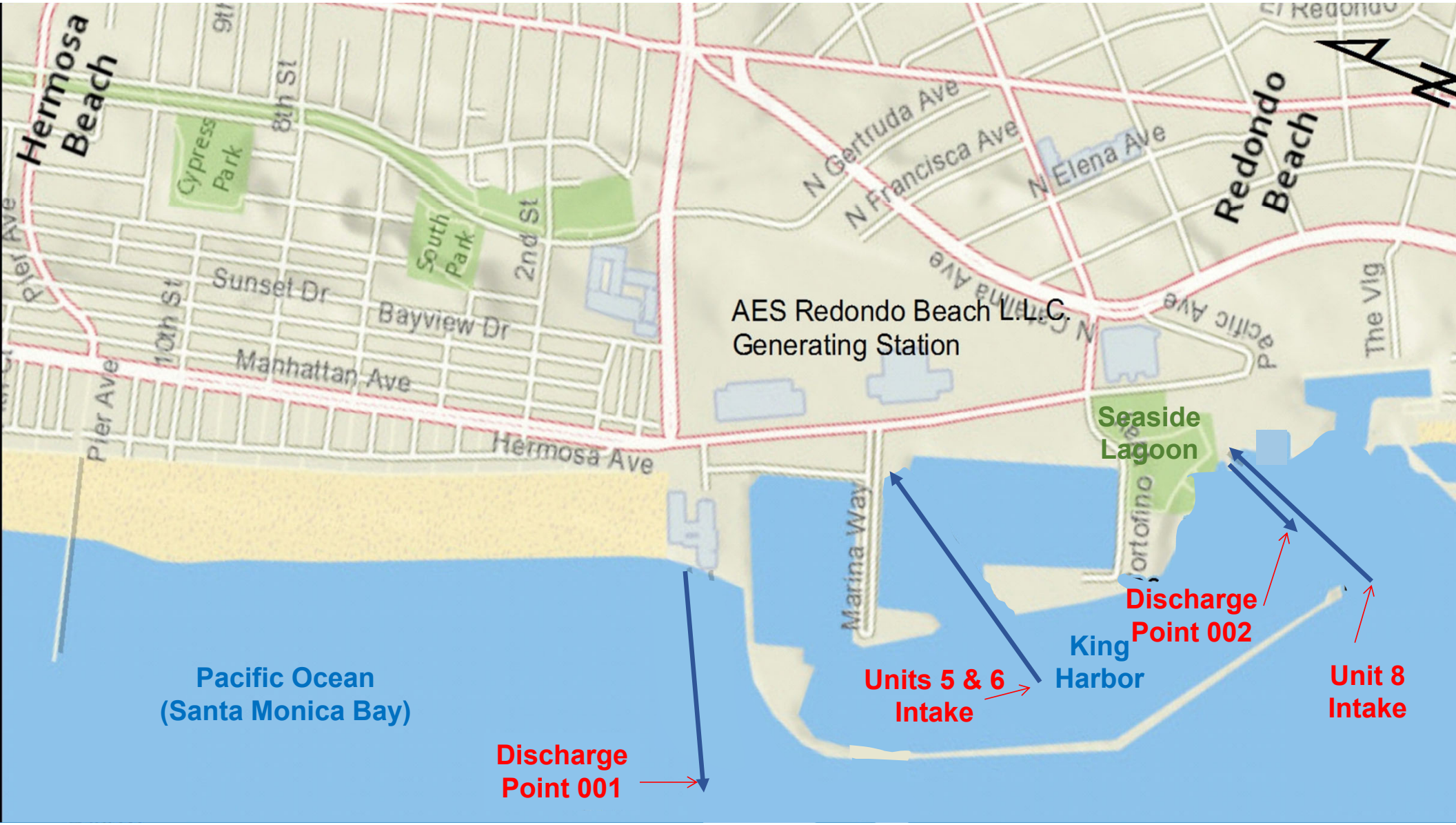
- Statewide Advisory Committee on Cooling Water Intake Structures (SACCWIS)
  - Advise SWRCB on OTC Policy Implementation
  - Joint-agency
  - Account for grid reliability (CPUC)
  - Reviewed initial OTC Policy schedules in 2010
  - Provides annual reports on grid reliability
  - May recommend OTC Policy amendments for grid reliability
  - OTC Policy amended 2021

# 2021 OTC Policy Amendment

- California Public Utilities Commission (CPUC)
  - Issued Decisions on resource adequacy (2/11/2021 & 3/25/2021)
  - Addressed potential electricity shortfalls in 2022 & 2023
    - August 2020 heat wave
    - Root Cause Analysis
  - Recommended OTC Policy compliance extensions
- SACCWIS Recommendation (3/26/2021)
- SWRCB OTC Policy Amendment (10/19/2021)
  - New Final Compliance Date: December 31, 2023

# Redondo Beach Generating Station

- Steam electric generating facility
- Over 1,300 megawatts capacity
- Operates on request to meet grid needs
- Three generating units using OTC water
- Currently regulated by:
  - Order R4-2016-0222-A01
  - TSO R4-2020-0139


Hermosa Beach
Cypress Park
8th St
South Park
2nd St
Sunset Dr
Bayview Dr
Manhattan Ave
Pier Ave
10th St
Hermosa Ave
N Gertruda Ave
N Francisca Ave
N Elena Ave
Redondo Beach
Pacific Ave
The Vig
AES Redondo Beach L.L.C.
Generating Station
Seaside Lagoon
Marina Way
Portofino
Discharge Point 002
King Harbor
Units 5 & 6 Intake
Unit 8 Intake
Pacific Ocean
(Santa Monica Bay)
Discharge Point 001

# Effluent Limitations

- Historically considered receiving waters (King Harbor) as ocean waters (subject to the Ocean Plan)
- Basin Plan classifies the receiving waters as an enclosed bay (subject to the State Implementation Policy)
- Order R4-2016-0222 (6/9/2016) implemented the enclosed bay reclassification
- Resulted in new, more stringent effluent limitations
- Order R4-2016-0222-A01 (12/10/2020) implemented OTC Policy amendments
- ROWD, permit administratively extended (4/29/2021) (40 CFR 122.6 & CCR 2235.4)

# Time Schedule Order (TSO) Background

- TSO R4-2016-0223 and its amendments
  - Interim limitations for temperature, pH, copper, nickel and DDT
  - Compliance schedule for shutting down Units 5, 6, 7 and 8
  - Expired 12/31/2020
- TSO R4-2020-0139 (12/10/2020)
  - 2020 OTC Policy amendment
  - Expires December 31, 2021

# Proposed Time Schedule Order (TSO)

- New OTC Policy Final Compliance Date: December 31, 2023
- Discharger requested new TSO
- Additional time allowed per Water Code section 13385
- Revised tentative TSO
  - Retains interim limitations from current TSO
  - Requires compliance with final effluent limitations by shutting down Units 5, 6 and 8 by December 31, 2023

# Comment Letters

- Heal the Bay
- City Attorney of the City of Redondo Beach
- AES Redondo Beach (Discharger)

# Comments from Heal the Bay

- Comment: Remove interim limitations
- Response: Interim limitations required by CWC 13385
- Comment: 13308 TSO rather than 13300 TSO
- Response: Circumstances not available or necessary
- Comment: Include an environmental impact assessment
- Response: TSO is exempt from CEQA

# Comments from Michael W. Webb, City Attorney of the City of Redondo Beach

- Comment: Grid reliability not a justification for TSO
- Response: TSO justified based on effluent limits
- Comment: Questions about diligent progress and schedule
- Response: Unit 7 shut down; compliance schedule included
- Comment: No risk of mandatory minimum penalties
- Response: MMPs apply to other effluent limits and TSO interim limits

# Board Options

- Adopt the revised tentative TSO as proposed by staff,
- Modify and adopt the revised tentative TSO, or
- Take no action

# Recommendation

- **Adopt the revised tentative TSO as proposed by staff.**

# Questions?

# Exhibit 3

**State of California**

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**

**LOS ANGELES REGION**

# TIME SCHEDULE ORDER R4-2020-0139 REQUIRING AES REDONDO BEACH, LLC (REDONDO BEACH GENERATING STATION) TO COMPLY WITH REQUIREMENTS PRESCRIBED IN ORDER R4-2016-0222 AND ITS SUBSEQUENT AMENDMENT (NPDES PERMIT NO. CA0001201, CI NO. 0536)

The California Regional Water Quality Control Board, Los Angeles Region (hereinafter Regional Water Board), finds:

1. AES Redondo Beach, LLC (hereinafter, Discharger or Permittee) is the owner and operator of the Redondo Beach Generating Station (hereinafter Facility), a steam electric generating facility, located at 1100 Harbor Drive, Redondo Beach, California.
2. There are three active, steam-powered electric generating units on site (Units 5, 6 and 8). Units 1, 2, 3, 4 and 7 are no longer in service. The generating units operate using once-through cooling (OTC) water drawn from two submerged intakes in King Harbor and one submerged intake just outside the King Harbor breakwater using circulation pumps. The Facility discharges OTC water, low-volume in-plant wastewater and groundwater seepage to the Pacific Ocean through Discharge Point 001, located off the northwest corner of the King Harbor breakwater. The Facility also discharges OTC water and stormwater to King Harbor through Discharge Point 002, located in the southeast corner of the harbor. OTC water accounts for greater than 99 percent of the total discharge from the Facility. Low-volume in-plant wastewater, groundwater seepage and stormwater are combined with OTC water prior to discharge.
3. On May 4, 2010, the State Water Board adopted a Statewide Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (OTC Policy). The OTC Policy was approved by the Office of Administrative Law (OAL) on September 27, 2010. The OTC Policy was amended on June 18, 2013; the 2013 amendments became effective on February 27, 2014. The OTC Policy established 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. All owners or operators of existing power plants were required to submit an implementation plan identifying the selected OTC compliance alternative, either Track 1 or Track 2, as defined therein, by April 1, 2011. The Discharger submitted an implementation plan on April 1, 2011. A revised implementation plan was submitted on June 17, 2011. Additional implementation

information was submitted on March 31, 2013, November 8, 2013, and February 12, 2016. Per the submitted information, the Discharger has indicated that the mechanism to achieve OTC Policy compliance at the Facility will be via Track 1, which requires a reduction in the intake flow rate and velocity at each unit to a level commensurate with that which can be attained by either a closed-cycle wet cooling system or closed-cycle dry cooling system. The Track 1 compliance at the Facility will include the permanent shut down of all generating units. The discharge of OTC water will cease when the Facility is permanently retired. The OTC Policy initially included a final compliance date of December 31, 2020 for the Facility.

4. 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. Several compounding events resulted in concern for system-wide grid reliability that could arise in the summer of 2021. On January 23, 2020, SACCWIS approved a compliance date extensions report and voted in favor of a recommendation to the State Water Board that included an extension of the compliance date for Redondo Beach Generating Station for one year until December 31, 2021. The SACCWIS recommendation was based on the megawatt need identified in CPUC Decision (D.)19-11-016. On September 1, 2020, the State Water Board considered the SACCWIS recommendation and adopted an amendment to the OTC Policy that revised the final compliance date for the Discharger by one year to December 31, 2021. The OTC Policy amendment was approved by the Office of Administrative Law (OAL) on November 30, 2020. This is a new regulatory requirement with which the Discharger must comply.

5. On June 9, 2016, the Regional Water Board adopted Order R4-2016-0222, which renewed the waste discharge requirements for the Redondo Beach Generating Station. Order R4-2016-0222 became effective on October 1, 2016. On December 10, 2020 the Regional Water Board adopted Order R4-2016-0222-A01, which modified Order R4-2016-0222 to reflect the new OTC Policy compliance date of December 31, 2021. Order R4-2016-0222 and its subsequent amendment serves as a permit under the National Pollutant Discharge Elimination System (NPDES No. CA0001201) Program and regulates the discharge of the pollutants at the Facility. The permit authorizes the discharge of up to 215 million gallons per day (MGD) of combined wastewater consisting of OTC water, low-volume in-plant wastewater and groundwater seepage into the Pacific Ocean, a water of the United States, through Discharge Point 001. The permit also authorizes the discharge of up to 674 MGD of combined wastewater consisting of OTC water and stormwater to King Harbor through Discharge Point 002. The modifications to Order R4-2016-0222 contained in Order R4-2016-0222-A01 became effective on the date of adoption (December 10, 2020).

6. The Facility's prior permit (Order 00-085) considered the receiving waters for Discharge Point 002 (King Harbor) as ocean waters and therefore established permit limitations and conditions to protect the beneficial uses and comply with water quality objectives (WQOs) for ocean waters as described by the California Ocean Plan

(1997). The Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (Basin Plan), however, classifies King Harbor as an enclosed bay. The State Water Board, in a memo dated July 18, 2001, identified the receiving waters for the Redondo Beach Generating Station Discharge Point 002 as subject to requirements of the State Implementation Policy (SIP), which is applicable only to inland surface waters, enclosed bays, and estuaries of the state. In a letter dated January 21, 2003, the Regional Water Board notified the Discharger of the reclassification of the outfall from an ocean discharge to an enclosed bay discharge. Order R4-2016-0222 and its subsequent amendment reflects the reclassification of the discharges from Discharge Point 002 and therefore implements the SIP for discharges from that outfall.

7. Prior to the adoption of Order R4-2016-0222, on January 20, 2016, the Discharger submitted a written request to the Regional Water Board for additional time to achieve compliance with certain new effluent limitations contained in Order R4-2016-0222. On May 6, 2016, the Discharger submitted a revised written request to the Regional Water Board for additional time to achieve compliance with certain other new effluent limitations contained in Order R4-2016-0222. Based on monitoring data, the Regional Water Board found that interim effluent limitations were appropriate for temperature, pH, copper and nickel. On June 9, 2016, the Regional Water Board adopted Time Schedule Order (TSO) R4-2016-0223 concurrently with the adoption of Order R4-2016-0222. TSO R4-2016-0223 included interim effluent limitations for temperature, pH, copper and nickel at Discharge Point 002; and for pH at Internal Monitoring Location INT-001A.

8. On August 24, 2017, the Discharger submitted a written request for additional time to achieve compliance with the new effluent limitations for DDT contained in Order R4-2016-0222. Based on monitoring data, the Regional Water Board found that interim effluent limitations were appropriate for DDT at Discharge Points 001 and 002. On November 30, 2017, the Executive Officer issued TSO R4-2016-0223-A01 that amended TSO R4-2016-0223 to include interim limitations for DDT at Discharge Points 001 and 002.

9. On October 11, 2018, the Discharger submitted a request to the Regional Water Board to modify the compliance deadlines in TSO R4-2016-0223-A01. The request discussed grid reliability issues involving the California Independent System Operator (CAISO), Southern California Edison (SCE), and the California Public Utilities Commission (CPUC). The Regional Water Board evaluated the request for modification of the compliance schedule and determined that the modification was appropriate. On December 21, 2018, the Executive Officer issued TSO R4-2016-0223-A02 that amended TSO R4-2016-0223-A01 to include the revised compliance schedule. TSO R4-2016-0223-A02 included the interim limitations described above and expires on December 31, 2020.

10. On January 22, 2020, the Discharger submitted a written request for additional time, up to December 31, 2021, to achieve compliance with the effluent limitations established in Order R4-2016-0222 for DDT at Discharge Point 001; for temperature, pH, copper, nickel and DDT at Discharge Point 002; and for pH at Monitoring

Location INT-001A. The written request referenced the grid reliability issues addressed by SACCWIS in Finding 9 above. The request indicated that Unit 7 was permanently retired on September 30, 2019. The September 1, 2020 amendment to the OTC Policy requires continued operation of Units 5, 6 and 8 for an additional year and delays the Discharger's ability to achieve compliance with the effluent limitations until December 31, 2021.

11. In accordance with Water Code section 13385, subdivision (j)(3)(C)(ii), the Regional Water Board finds that the Discharger is making diligent progress toward bringing the waste discharge into compliance with the effluent limitations. Specifically, the Discharger has made diligent progress towards compliance with the temperature, pH, copper, nickel and DDT effluent limitations because it has been steadily implementing actions associated with Track 1 compliance with the OTC Policy, as described above in Finding 3, including by permanently shutting down Unit 7 on September 30, 2019, as described above in Finding 10. Additionally, the Regional Water Board finds that the Discharger has demonstrated that additional time is necessary to comply with the effluent limitations due to system-wide grid-reliability issues, as set forth in the September 1, 2020 amendment to the OTC Policy, which revised the final compliance date for the Discharger by one year to December 31, 2021 for this reason.

    Under these conditions, the Regional Water Board, following a public hearing, may extend the TSO for an additional period not exceeding five years in length for these effluent limitations. Therefore, the compliance requirements contained in TSO R4-2016-0223-A02 for DDT at Discharge Point 001; for temperature, pH, copper, nickel and DDT at Discharge Point 002; and for pH at Monitoring Location INT-001A may be extended for up to five years under this new TSO.

12. Water Code section 13300 states:

    "Whenever a regional board finds that a discharge of waste is taking place or threatening to take place that violates or will violate requirements prescribed by the regional board, or the state board, or that the waste collection, treatment, or disposal facilities of a discharger are approaching capacity, the board may require the discharger to submit for approval of the board, with such modifications as it may deem necessary, a detailed time schedule of specific actions the discharger shall take in order to correct or prevent a violation of requirements."

13. Water Code section 13385, subdivisions (h) and (i), require the Regional Water Board to impose mandatory minimum penalties upon dischargers that violate certain effluent limitations. Section 13385(j)(3) exempts violations of an effluent limitation from mandatory minimum penalties "where the waste discharge is in compliance with either a cease and desist order issued pursuant to Section 13301 or a time schedule order issued pursuant to Section 13300*, if all of the [specified] requirements are met*." (emphasis added).

14. In order to comply with the effluent limitations for DDT for the discharge to the Pacific Ocean at Discharge Point 001; for temperature, pH, copper, nickel and DDT for the discharge to King Harbor at Discharge Point 002; and for pH at Internal Monitoring

Location INT-001A; the Discharger will cease the discharge of OTC water and low-volume wastewater. The cessation of discharge will be accomplished through compliance via Track 1 with the OTC Policy. The Regional Water Board issues this TSO because the Discharger needs time to implement appropriate control measures associated with the complete cessation of discharge and implementation of Track 1 compliance pursuant to the OTC Policy. Through this TSO, the Discharger will be required to comply with the final effluent limitations for DDT for the discharge to the Pacific Ocean at Discharge Point 001; for temperature, pH, copper, nickel and DDT for the discharge to King Harbor at Discharge Point 002; and for pH at Internal Monitoring Location INT-001A no later than December 31, 2021.

15. A TSO is appropriate in these circumstances to allow time for the Permittee to implement necessary control measures that will bring the Facility into compliance with the final effluent limitations for DDT at Discharge Point 001; for temperature, pH, copper, nickel and DDT at Discharge Point 002; and for pH at Monitoring Location INT-001A.

16. Therefore, this TSO retains the interim effluent limitations contained in TSO R4-2016-0223-A02 for DDT for the discharge to the Pacific Ocean at Discharge Point 001; for temperature, pH, copper, nickel and DDT for the discharge to King Harbor at Discharge Point 002; and for pH at Internal Monitoring Location INT-001A.

17. The exceedances of effluent limitations allowed by this TSO are in the public interest given the facility is a generating station utilized to supply power to the power grid, this TSO is for a limited period of time, and the discharge will continue to be in compliance with the applicable mass limitations in Order R4-2016-0222.

18. Pursuant to Water Code section 13385, subdivision (j)(3), full compliance with the requirements of this TSO exempts the Permittee from mandatory minimum penalties only for violations of the final effluent limitations for DDT for the discharge to the Pacific Ocean at Discharge Point 001; for temperature, pH, copper, nickel and DDT for the discharge to King Harbor at Discharge Point 002; and for pH at Internal Monitoring Location INT-001A contained in Order R4-2016-0222 and its subsequent amendment that occur after the effective date of this TSO.

27. This TSO concerns an existing facility that is a utility used to provide electric power and involves no expansion of its existing or former use. Therefore, issuance of this TSO is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21100, et seq.) in accordance with California Code of Regulations, title 14, sections 15301 and 15321, subdivision (a)(2).

28. The Regional Water Board has notified the Permittee and interested agencies and persons of its intent to issue this TSO concerning compliance with waste discharge requirements and has provided them with an opportunity to submit written comments.

29. Any person aggrieved by this action of the Regional Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the Regional Water Board action, except that if the thirtieth day following the action falls on a Saturday,

Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

or will be provided upon request.

**IT IS HEREBY ORDERED** that, pursuant to Water Code section 13300, AES Redondo Beach, LLC, as owner and operator of the Redondo Beach Generating Station, shall comply with the requirements listed below to ensure its discharges comply with the final effluent limitations for DDT for the discharge to the Pacific Ocean at Discharge Point 001; for temperature, pH, copper, nickel and DDT for the discharge to King Harbor at Discharge Point 002; and for pH at Internal Monitoring Location INT-001A contained in Order R4-2016-0222 as amended by Order R4-2016-0222-A01:

1. Comply immediately with the following interim effluent limitation at Discharge Point 001, which shall be deemed effective from January 1, 2021 to December 31, 2021:

| Parameter | Units | 30-day Average |
|---|---|---|
| DDT[1] | µg/L | 2.5 |
| [1] DDT shall mean the sum of: 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD and 2,4'-DDD. | | |

2. Comply immediately with the following interim effluent limitations at Discharge Point 002, which shall be deemed effective from January 1, 2021 to December 31, 2021:

| Parameter | Units | AMEL | MDEL | Instantaneous Maximum |
|---|---|---|---|---|
| Temperature | ºF | --- | --- | 106[1] |
| pH | s.u. | --- | --- | 6.0 – 9.0 |
| Copper | µg/L | 10 | 34 | --- |
| Nickel | µg/L | 27 | 27 | --- |
| DDT[2] | µg/L | 2.5 | 3.1 | --- |

[1] The temperature of wastes discharged shall not exceed 106°F during normal operation of the facility. During heat treatment, the temperature of wastes discharged shall not exceed 125ºF except during adjustment of the recirculation gate at which time the temperature of wastes discharged shall not exceed: 135°F. Temperature fluctuations during gate adjustment above 125°F shall not last for more than thirty (30) minutes.

[2] DDT shall mean the sum of: 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD and 2,4'-DDD.

3. Comply immediately with the following interim effluent limitation at Monitoring Location INT-001A, which shall be deemed effective from January 1, 2021 to December 31, 2021:

| Parameter | Units | AMEL | MDEL | Instantaneous Maximum |
|---|---|---|---|---|
| pH | s.u. | --- | --- | 6.0 – 9.6 |

4. Achieve full compliance with the final effluent limitations for DDT for the discharge to the Pacific Ocean at Discharge Point 001; for temperature, pH, copper, nickel and DDT for the discharge to King Harbor at Discharge Point 002; and for pH at Internal Monitoring Location INT-001A contained in Order R4-2016-0222 as soon as possible, but no later than December 31, 2021.

5. Comply with the schedule as stipulated below:

| No. | Task | Deadline |
|---|---|---|
| 1. | Eliminate the discharge of OTC water and low volume wastes through Discharge Point 001 by permanently shutting down Units 5 and 6. | December 31, 2021 |
| 2. | Eliminate the discharge of OTC water through Discharge Point 002 by permanently shutting down Unit 8. | December 31, 2021 |

6. Submit semiannual progress reports of actions taken to achieve compliance with the final effluent limitations. The reports shall summarize the progress to date, activities conducted during the reporting period and the activities planned for the upcoming period. Each report shall be submitted to this Regional Water Board by August 15th and February 15th for the reporting period of January 1st through June 30th and July 1st through December 31st, respectively, and include milestones completed and any new pertinent updates. The first semiannual progress report is due on August 15, 2021 for the January 1, 2021 through June 30, 2021, reporting period.

7. Any person signing a document submitted under this TSO shall make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

8. If the Permittee fails to comply with any provision of this TSO, the Regional Water Board may take any further action authorized by law. The Executive Officer, or his/her delegee, is authorized to take appropriate enforcement action pursuant, but not limited to, CWC sections 13350 and 13385. The Regional Water Board may also refer any violations to the Attorney General for judicial enforcement, including injunction and civil monetary remedies.

9. All other provisions of Order R4-2016-0222 as amended by Order R4-2016-0222-A01 not in conflict with this TSO remain in effect.
10. The Regional Water Board may reopen this TSO at its discretion or at the request of the Permittee, if warranted. Lack of progress towards compliance with this TSO may be cause for the Regional Water Board to modify the conditions of this TSO.
11. This TSO becomes effective upon adoption and it expires on December 31, 2021.

I, Renee Purdy, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of the order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on December 10, 2020.

R Purdy Digitally signed by R Purdy
Date: 2020.12.17 13:01:49 -08'00'
Water Boards

Renee Purdy, Executive Officer

# Exhibit 4

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**
**LOS ANGELES REGION**

320 West 4th Street, Suite 200, Los Angeles, CA 90013
Phone (213) 576-6600 • Fax (213) 576-6640
http://www.waterboards.ca.gov/losangeles

# ORDER NO. R4-2016-0222
# NPDES NO. CA0001201

# WASTE DISCHARGE REQUIREMENTS FOR AES REDONDO BEACH LLC REDONDO BEACH GENERATING STATION

The following Discharger is subject to waste discharge requirements (WDRs) set forth in this Order:

**Table 1. Discharger Information**

| | |
|---|---|
| **Discharger** | **AES Redondo Beach LLC** |
| **Name of Facility** | **Redondo Beach Generating Station** |
| **Facility Address** | **1100 Harbor Drive** |
| | **Redondo Beach, CA 90277** |
| | **Los Angeles** |

**Table 2. Discharge Location**

| Discharge Point | Effluent Description | Discharge Point Latitude (North) | Discharge Point Longitude (West) | Receiving Water |
|---|---|---|---|---|
| 001 | Once-through cooling water from Generating Units 5 and 6, low volume wastewaters, and ground water seepage | 33.8494444° | -118.4022222° | Pacific Ocean |
| 002 | Once-through cooling water from Units 7 and 8 and storm water | 33.843° | -118.394° | King Harbor |

**Table 3. Administrative Information**

| | |
|---|---|
| This Order was adopted on: | **June 9, 2016** |
| This Order shall become effective on: | **October 1, 2016** |
| This Order shall expire on: | **September 30, 2021** |
| The Discharger shall file a Report of Waste Discharge as an application for reissuance of WDRs in accordance with title 23, California Code of Regulations, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than: | **180 days prior to the Order expiration date** |
| The U.S. Environmental Protection Agency (USEPA) and the California Regional Water Quality Control Board, Los Angeles Region have classified this discharge as follows: | **Major discharge** |

I, Samuel Unger, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on June 9, 2016.

Samuel Unger

Samuel Unger, P.E., Executive Officer

TENTATIVE REQUIREMENTS SENT: APRIL 5, 2016

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## I. FACILITY INFORMATION

Information describing Redondo Beach Generating Station (Facility) is summarized in Table 1 and in sections I and II of the Fact Sheet (Attachment F). Section I of the Fact Sheet also includes information regarding the Facility's permit application.

## II. FINDINGS

The California Regional Water Quality Control Board, Los Angeles Region (hereinafter Regional Water Board), finds:

**A. Legal Authorities.** This Order serves as WDRs pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this facility to surface waters.

**B. Background and Rationale for Requirements.** The Regional Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for the requirements in this Order, is hereby incorporated into and constitutes Findings for this Order. Attachments A through E and G through J are also incorporated into this Order.

**C. Provisions and Requirements Implementing State Law.** The provisions/requirements in subsections IV.B, IV.C, and V.B are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

**D. Notification of Interested Parties.** The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of the notification are provided in the Fact Sheet.

**E. Consideration of Public Comment.** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet.

THEREFORE, IT IS HEREBY ORDERED that Order No. 00-085, is superseded by this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger is authorized to discharge from the identified facility and outfalls into waters of the United States and shall comply with the requirements in this Order.

## III. DISCHARGE PROHIBITIONS

**A.** Wastes discharged shall be limited to 215 million gallons per day (MGD) of commingled wastewater (consisting of once-through cooling water from Generating Units 5 and 6, low volume wastewaters, and ground water seepage) from Discharge Point 001 and 674 MGD of commingled wastewater (consisting of once-through cooling water from Units 7 and 8, low volume wastewaters, and storm water) at Discharge Point 002. The discharge of wastes from accidental spills or other sources is prohibited.

**B.** Discharges of water, materials, thermal wastes, elevated temperature wastes, toxic wastes, deleterious substances, or wastes other than those authorized by this Order, to a storm drain system, the Pacific Ocean, King Harbor, or other waters of the state, are prohibited.

**C.** Neither the treatment nor the discharge of pollutants shall create pollution, contamination, or create a nuisance as defined by section 13050 of the Water Code.

**D.** Wastes discharged shall not contain any substances in concentrations toxic to human, animal, plant, or aquatic life.

**E.** The discharge shall not cause a violation of any applicable water quality standards for receiving waters adopted by the Regional Water Board or the State Water Resources Control Board (State Water Board) as required by the federal CWA and regulations adopted thereunder.

**F.** If more stringent applicable water quality standards are promulgated or approved pursuant to section 303 of the federal CWA, and amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such more stringent standards.

**G.** The discharge of any radiological, chemical, or biological warfare agent or high level radiological waste is prohibited.

**H.** Any discharge of wastes at any point(s) other than specifically described in this Order is prohibited, and constitutes a violation of this Order.

**I.** The discharge of trash to surface waters of the State or the deposition of trash where it may be discharged into surface waters of the State is prohibited.

## IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

### A. Effluent Limitations – Discharge Points No. 001 and 002

#### 1. Final Effluent Limitations – Discharge Points No. 001 and 002

The Discharger shall maintain compliance with the following effluent limitations at Discharge Points No. 001 and 002 with compliance measured at Monitoring Locations EFF-001 and EFF-002 as described in the attached Monitoring and Reporting Program (MRP) (Attachment E):

**Table 4. Effluent Limitations for Discharge Point 001**

| Parameter | Units | Effluent Limitations[1] | | | | |
|---|---|---|---|---|---|---|
| | | 6-Month Median | Daily Maximum | Instanta-neous Maximum | 30-day Average | Average Concentration |
| pH | s.u. | [2] | | | | |
| Temperature | °F | [3] | | | | |
| Beryllium, Total Recoverable | µg/L | -- | -- | -- | 0.41 | -- |
| | lbs/day[4] | -- | -- | -- | 0.74 | -- |
| Cadmium, Total Recoverable | µg/L | 12.5 | 50 | 125 | -- | -- |
| | lbs/day[4] | 22 | 90 | 224 | -- | -- |
| Chromium (VI)[5] | µg/L | 25 | 100 | 250 | -- | -- |
| | lbs/day[4] | 45 | 179 | 448 | -- | -- |
| Lead, Total Recoverable | µg/L | 25 | 100 | 250 | -- | -- |
| | lbs/day[4] | 45 | 179 | 448 | -- | -- |

| Parameter | Units | Effluent Limitations[1] | | | | |
|---|---|---|---|---|---|---|
| | | 6-Month Median | Daily Maximum | Instanta-neous Maximum | 30-day Average | Average Concentration |
| Mercury, Total Recoverable | µg/L | 0.49 | 2 | 5 | -- | -- |
| | lbs/day[4] | 0.9 | 3.6 | 9.0 | -- | -- |
| Nickel, Total Recoverable | µg/L | 62.5 | 250 | 625 | -- | -- |
| | lbs/day[4] | 112 | 448 | 1,121 | -- | -- |
| Selenium, Total Recoverable | µg/L | 188 | 750 | 1875 | -- | -- |
| | lbs/day[4] | 337 | 1,345 | 3,362 | -- | -- |
| Silver, Total Recoverable | µg/L | 6.9 | 33 | 86 | -- | -- |
| | lbs/day[4] | 12 | 59 | 154 | -- | -- |
| Chronic Toxicity | Pass or Fail and % Effect | -- | Pass or % Effect <50[7] | -- | Pass[6,7] | -- |
| DDT[8] | µg/L | | -- | -- | 0.00017 | -- |
| | lbs/day[4] | -- | -- | -- | 0.0003 | -- |
| PCBs[9] | µg/L | [10] | | | | |
| Free Available Chlorine[11,12] | mg/L | -- | -- | 0.5 | -- | 0.2 |
| Total Residual Chlorine[11,12] | mg/L | -- | 0.2 | -- | -- | -- |
| Radioactivity | [13] | | | | | |

1 For combined discharge at Outfall 001.
2 The effluent pH shall at all times be within the range of 6.0 to 9.0 pH units.
3 The temperature of wastes discharged shall not exceed 106ºF during normal operation of the facility. During heat treatment, the temperature of wastes discharged shall not exceed 125ºF except during adjustment of the recirculation gate at which time the temperature of wastes discharged shall not exceed 135ºF. Temperature fluctuations during gate adjustment above 125ºF shall not last for more than thirty minutes.
4 The mass (lbs/day) limitations are based on the permitted discharge flow for each discharge point (215 MGD for Discharge Point 001) and are calculated as follows:
Mass (lbs/day) = Flow (MGD) x Concentration (mg/L) x 8.34 (conversion factor)
5 The Discharger may at their option meet this effluent limitation as a total chromium effluent limitation.
6 Report "Pass" or "Fail" for Median Monthly Effluent Limitation (MMEL). Report "Pass" or "Fail" and "% Effect" for Maximum Daily Effluent Limitation (MDEL). During a calendar month, exactly three independent toxicity tests are required for routine monitoring when one toxicity test results in "Fail".
7 This is a Median Monthly Effluent Limitation.
8 DDT shall mean the sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD and 2,4'-DDD.
9 PCBs shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260.
10 The Discharge of PCBs that originate from the Facility is prohibited as per 40 Code of Regulations (C.F.R.) section 423.13(a).
11 If other oxidants are used, this shall be the total of all oxidants reported as residual chlorine.
12 Total residual and free available chlorine may not be discharged from any single generating unit for more than two hours per day unless the Discharger demonstrates to the permitting authority that discharge for more than two hours per day is required for macroinvertebrate control.
13 Not to exceed limits specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30253 of the California Code of Regulations. Reference to Section 30253 is prospective, including future changes to any incorporated provisions of federal law, as the changes take effect. In lieu of monitoring, compliance with this effluent limitation may be demonstrated through the submission of a statement certifying that radioactive pollutants were not used at the Facility or added to the discharge.

**Table-5.Effluent Limitations for Low Volume Wastes Discharged via Discharge Point 001**

| Parameter | Units | Effluent Limitations[1] | | | |
|---|---|---|---|---|---|
| | | 30-day Average | Maximum Daily | Instantaneous | |
| | | | | Minimum | Maximum |
| ***Effluent Limitations for Low Volume Wastes at Monitoring Location INT-001A*** | | | | | |
| Total Suspended Solids | mg/L | 30 | 100 | -- | -- |
| | lbs/day[2] | 223 | 746 | -- | -- |
| Oil and Grease | mg/L | 15 | 20 | -- | -- |
| | lbs/day[2] | 111 | 149 | -- | -- |
| pH | s.u. | -- | -- | 6.0 | 9.0[3] |

1 Effluent limitations for in-plant waste streams prior to commingling with OTC water.
2 The mass (lbs/day) limitations are based on the permitted discharge flow for each discharge point (0.864 MGD for Low Volume Wastes) and are calculated as follows:
Mass (lbs/day) = Flow (MGD) x Concentration (mg/L) x 8.34 (conversion factor)
3 A Time Schedule Order (Order No. R4-2016-0223) has been issued that includes an interim limit of 9.6 for the pH instantaneous maximum limitation that is effective until July 1, 2017.

**Table-6. Mass-based Effluent Limitations for Low Volume Wastes Discharged via Discharge Point 001**

| Parameter | Units | Effluent Limitations[1,2] | | |
|---|---|---|---|---|
| | | 6-Month Median | Daily Maximum Concentration | 30-day Average |
| Beryllium, Total Recoverable | lbs/day[3] | -- | -- | 0.003 |
| Cadmium, Total Recoverable | lbs/day[3] | 0.09 | 0.36 | -- |
| Chromium (VI)[4] | lbs/day[3] | 0.18 | 0.72 | -- |
| Lead, Total Recoverable | lbs/day[3] | 0.18 | 0.72 | -- |
| Mercury, Total Recoverable | lbs/day[3] | 0.0035 | 0.014 | -- |
| Nickel, Total Recoverable | lbs/day[3] | 0.45 | 1.8 | -- |
| Selenium, Total Recoverable | lbs/day[3Q] | 1.4 | 5.4 | -- |
| Silver, Total Recoverable | lbs/day[3] | 0.05 | 0.24 | -- |

[1] Mass-based effluent limitations for total in-plant waste streams including low volume wastes.
[2] Compliance shall be determined from the sum of mass discharges of each parameter in the individual in-plant low volume waste streams.
Total Mass Emission per day (lbs/day) = (mass emission at INT-001A)
Where:
Mass emission at INT-001A is calculated using flow measured at INT-001A (lbs/day)
[3] The mass-based limitations are based on a maximum combined flow of 0.864 for all in-plant waste streams and are calculated as follows:
Mass-based limitation (lbs/day) = C x $Q_m$ x 0.00834 (conversion factor)
Where:
C = Concentration-based limitation (µg/L) calculated in the combined discharge (OTC water and in-plant wastes)
$Q_m$ = 0.864 MGD, the maximum combined flow for all in-plant waste streams
[4] The Discharger may at their option meet this effluent limitation as a total chromium limitation.

## Table 7.Effluent Limitations for Discharge Point 002

| Parameter | Units | Effluent Limitations[1] | | | |
|---|---|---|---|---|---|
| | | Average Monthly | Maximum Daily | Average Concentration | Instantaneous Maximum |
| pH | S.U. | -- | -- | | 6.5/8.5[12] |
| Temperature | °F | -- | -- | -- | 86 |
| PCBs[2, 11] | µg/L | [3] | | | |
| Free Available Chlorine[4,5] | mg/L | -- | -- | 0.2 | 0.50 |
| Total Residual Chlorine[4,5] | mg/L | -- | 0.1 | -- | -- |
| Copper, Total Recoverable[11] | µg/L | 2.1 | 5.8 | -- | -- |
| | lbs/day[6] | 12 | 33 | -- | -- |
| Mercury, Total Recoverable[11] | µg/L | 0.051 | 0.10 | -- | -- |
| | lbs/day[6] | 0.29 | 0.56 | -- | -- |
| Nickel, Total Recoverable[11] | µg/L | 5.6 | 15 | -- | -- |
| | lbs/day[6] | 31 | 84 | -- | -- |
| Silver, Total Recoverable[11] | µg/L | 1.1 | 2.2 | -- | -- |
| | lbs/day[6] | 6.2 | 12 | -- | -- |
| Thallium, Total Recoverable[11] | µg/L | 6.3 | 13 | -- | -- |
| | lbs/day[6] | 35 | 73 | -- | -- |
| Zinc, Total Recoverable[11] | µg/L | 30 | 92 | -- | -- |
| | lbs/day[6] | 168 | 517 | -- | -- |
| DDT[7, 11] | µg/L | 0.00017 | 0.00034 | -- | -- |
| | lbs/day[6] | 0.00096 | 0.0019 | -- | -- |
| Chronic Toxicity | Pass or Fail and % Effect for TST approach | Pass[8,9] | Pass or % Effect <50[9] | -- | -- |
| Radioactivity | -- | [10] | | | |

[1] Effluent limitations for combined discharge at Discharge Point 002.
[2] PCBs shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Arolclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260.
[3] The Discharge of PCBs that originate from the Facility is prohibited as per 40 C.F.R. section 423.13(a).
[4] If other oxidants are used, this shall be the total of all oxidants reported as residual chlorine.
[5] Total residual and free available chlorine may not be discharged from any single generating unit for more than two hours per day unless the Discharger demonstrates to the permitting authority that discharge for more than two hours per day is required for macroinvertebrate control. Multiple units cannot discharge simultaneously.
[6] The mass (lbs/day) limitations are based on the permitted discharge flow for each discharge point (215 MGD for Discharge Point 001 and 674 for Discharge Point 002 and are calculated as follows:

Mass (lbs/day) = Flow (MGD) x Concentration (mg/L) x 8.34 (conversion factor)

[7] DDT shall mean the sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD and 2,4'-DDD.
[8] Report “Pass” or “Fail” for Median Monthly Effluent Limitation (MMEL). Report “Pass” or “Fail” and “% Effect” for Maximum Daily Effluent Limitation (MDEL). During a calendar month, exactly three independent toxicity tests are required for routine monitoring when one toxicity test results in “Fail”.
[9] This is a Median Monthly Effluent Limitation.
[10] Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life. In lieu of monitoring, compliance with this effluent limitation may be demonstrated through the submission of a statement certifying that radioactive pollutants were not used at the Facility or added to the discharge.
[11] If the influent water pollutant concentration (measured at intake for Units 7 and 8) does not exceed the average monthly limitation then the limitations are applied as noted in the Table. If the influent water pollutant concentration exceeds the average monthly limitation but does not exceed the maximum daily limitation then compliance with the average monthly limitation will be determined based on intake water credits and compliance with the maximum daily limitation is applied as noted in the Table. If the influent water pollutant concentration exceeds the maximum daily limitation then compliance with both the average monthly and the maximum daily will be determined based on intake water credits. When determining compliance based on intake water credit, the pollutant effluent limitation is equal to the maximum pollutant concentration in the influent water. The equation is as follows:

Maximum Pollutant Effluent Limitation with Intake Water Credit = Maximum Pollutant Influent Water Concentration
Monthly Pollutant Effluent Limitation with Intake Water Credit = Monthly Pollutant Influent Water Concentration

[12] A Time Schedule Order (Order No. R4-2016-0223) has been issued that includes an interim limit of 9.0 for the pH instantaneous maximum limitation that is effective until December 31, 2020.

### 2. Interim Effluent Limitations—Not Applicable

## B. Land Discharge Specifications—Not Applicable

## C. Recycling Specifications—Not Applicable

## V. RECEIVING WATER LIMITATIONS

### A. Surface Water Limitations—Outfall 001: Ocean Plan

Unless specifically excepted by this Order, the discharge, by itself or jointly with any other discharge(s), shall not cause violation of the following water quality objectives. Compliance with these objectives shall be determined by samples collected at stations representative of the area within the waste field where initial dilution is completed (i.e., outside the zone of initial dilution (ZID)).

1. **State Water Board and CDPH Standards** Both the State Water Board and the California Department of Public Health (CDPH) have established standards to protect water contact recreation in coastal waters from bacterial contamination. Subsection a of this section identifies bacterial water quality objectives adopted by the State Water Board for ocean waters used for water contact recreation. Subsection b identifies the bacteriological standards adopted by CDPH for coastal waters adjacent to public beaches and public water contact sports areas in ocean waters.

   **a.** Within a zone bounded by the shoreline, and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline, and in areas outside this zone used for water contact sports as determined by the Regional Water Board (i.e, waters designated as REC-1), but including all kelp beds, the discharge shall not cause the following bacterial objectives throughout the water column to be exceeded:

   30-day Geometric Mean –the following standards are based on the geometric mean of the five most recent samples from each site:

   **i.** Total coliform density shall not exceed 1,000 per 100 ml;

   **ii.** Fecal coliform density shall not exceed 200 per 100 ml; and

   **iii.** *Enterococcus* density shall not exceed 35 per 100 ml.

   Single Sample Maximum:

   **i.** Total coliform density shall not exceed 10,000 per 100 ml

   **ii.** Fecal coliform density shall not exceed 400 per 100 ml;

   **iii.** Enterococcus density shall not exceed 104 per 100 ml; and

   **iv.** Total coliform density shall not exceed 1,000 per 100 m l when the fecal coliform/total coliform ratio exceeds 0.1.

   The Initial Dilution Zone for any wastewater outfall shall be excluded from designation as kelp beds for purposes of bacterial standards. Adventitious assemblages of kelp plants on waste discharge structures (e.g., outfall pipes and diffusers) do not constitute kelp beds for purposes of bacterial standards.

   **b.** **CDPH Standards.** CDPH has established minimum protective bacteriological standards for coastal water adjacent to public beaches and for public water-contact sports areas in ocean waters. These standards are found in the California Code of Regulations, title 17, section 7958, and they are identical to the objectives contained in subsection a. above. When a public beach or public water-contact sports area fails to meet these standards, CDPH or the local public health officer may post with warning signs or otherwise restrict use of the public beach or public water-contact sports area until the standards are met. The CDPH regulations impose more frequent monitoring and more stringent posting and closure requirements on certain

high-use public beaches that are located adjacent to a storm drain that flows in the summer.

For beaches not covered under AB 411 regulations, CDPH imposes the same standards as contained in Title 17 and requires weekly sampling but allows the county health officer more discretion in making posting and closure decisions.

2. **Shellfish Harvesting Standards.** At all areas where shellfish may be harvested for human consumption, as determined by the Regional Water Board, the median total coliform density shall not exceed 70 per 100 ml throughout the water column, and not more than 10 percent of the samples shall exceed 230 per 100 ml.

3. **Physical Characteristics**

   **a.** Floating particulates and grease and oil shall not be visible as a result of wastes discharged.

   **b.** The discharge of waste shall not alter the color of the receiving waters; create a visual contrast with the natural appearance of the water; nor cause aesthetically undesirable discoloration of the ocean surface.

   **c.** Natural light shall not be significantly reduced at any point outside the initial dilution zone as the result of the discharge of waste.

   **d.** The rate of deposition of inert solids and the characteristics of inert solids in ocean sediments shall not be changed such that benthic communities are degraded.

4. **Chemical Characteristics**

   **a.** The dissolved oxygen concentration shall not at any time be depressed more than 10 percent from that which occurs naturally, as the result of the discharge of oxygen demanding waste materials; excluding effects of naturally induced upwelling.

   **b.** The pH shall not be changed at any time more than 0.2 units from that which occurs naturally.

   **c.** The dissolved sulfide concentration of waters in and near sediments shall not be significantly increased above that present under natural conditions.

   **d.** The concentration of substances set forth in Chapter II, Table 1 of the Ocean Plan, shall not be increased in marine sediments to levels that would degrade indigenous biota.

   **e.** The concentration of organic materials in marine sediments shall not be increased to levels that would degrade marine life.

   **f.** Nutrient materials shall not cause objectionable aquatic growths or degrade indigenous biota.

   **g.** Numerical water quality objectives established in Chapter II, Table 1 of the California Ocean Plan shall not be exceeded outside of the zone of initial dilution as a result of discharges from the Facility.

5. **Biological Characteristics**

   **a.** Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded.

   **b.** The natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption shall not be altered.

**c.** The concentration of organic materials in fish, shellfish, or other marine resources used for human consumption shall not bioaccumulate to levels that are harmful to human health.

**6. Radioactivity**

Discharge of radioactive waste shall not degrade marine life.

**B. Receiving Water Limitations—Outfall 002: Basin Plan**

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. The discharge shall not cause the following in King Harbor:

**1.** The normal ambient pH to fall below 6.5 nor exceed 8.5 units nor vary from normal ambient pH levels by more than 0.5 units.

**2.** Surface water temperature to rise greater than 5º F above the natural temperature of the receiving waters at any time or place. At no time shall the temperature be raised above 86º F as a result of waste discharged.

**3.** State/Regional Water Board Water Contact Standards: In waters designated for water contact recreation (REC-1), the waste discharged shall not cause the following bacterial standards to be exceeded in the receiving water:

**a.** Geometric Mean Limits

**i.** Total coliform density shall not exceed 1,000/ ml.

**ii.** Fecal coliform density shall not exceed 200/100 ml.

**iii.** Enterococcus density shall not exceed 35/100 ml.

**b.** Single Sample Limits

**i.** Total coliform density shall not exceed 10,000/100 ml.

**ii.** Fecal coliform density shall not exceed 400/100 ml.

**iii.** Enterococcus density shall not exceed 104/100 ml.

**iv.** Total coliform density shall not exceed 1,000/100 ml, if the ratio of fecal-to-total coliform exceeds 0.1.

The geometric mean values should be calculated based on a statistically sufficient number of samples (generally not less than 5 samples equally spaced over a 30-day period).

If any of the single sample limits are exceeded, the Regional Water Board may require repeat sampling on a daily basis until the sample falls below the single sample limit in order to determine the persistence of the exceedance.

When repeat sampling is required because of an exceedance of any one single sample limit, values from all samples collected during that 30-day period shall be used to calculate the geometric mean.

**4.** At a minimum, the mean annual dissolved oxygen concentration of all waters shall be greater than 7 mg/L, and no single determination shall be less than 5.0 mg/L, except when natural conditions cause lesser concentrations.

**5.** Exceedance of the total ammonia (as N) concentrations specified in the Los Angeles Regional Water Board Resolution 2004-022, adopted on March 4, 2004, *Amendment to*

*the Water Quality Control Plan for the Los Angeles Region to Update the Ammonia Objectives for Inland Surface Waters Not Characteristic of Freshwater (including Enclosed Bays, Estuaries, and Wetlands) with the Beneficial Use Designations for Protection of "Aquatic Life"*.

**6.** The presence of visible, floating, suspended or deposited macroscopic particulate matter or foam.

**7.** Oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the receiving water or on objects in the water.

**8.** Suspended or settleable materials, chemical substances or pesticides in amounts that cause nuisance or adversely affect any designated beneficial use.

**9.** Toxic or other deleterious substances in concentrations or quantities which cause deleterious effects on aquatic biota, wildlife, or waterfowl or render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

**10.** Accumulation of bottom deposits or aquatic growths.

**11.** Biostimulatory substances at concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.

**12.** The presence of substances that result in increases of BOD that adversely affect beneficial uses.

**13.** Taste or odor-producing substances in concentrations that alter the natural taste, odor, and/or color of fish, shellfish, or other edible aquatic resources; cause nuisance; or adversely affect beneficial uses.

**14.** Alteration of turbidity, or apparent color beyond present natural background levels.

**15.** Damage, discolor, nor cause formation of sludge deposits on flood control structures or facilities, nor overload the design capacity.

**16.** Degrade surface water communities and populations including vertebrate, invertebrate, and plant species.

**17.** Problems associated with breeding of mosquitoes, gnats, black flies, midges, or other pests.

**18.** Create nuisance, or adversely affect beneficial uses of the receiving water.

**19.** Violation of any applicable water quality standards for receiving waters adopted by the Regional Water Board or State Water Board. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA, or amendments thereto, the Regional Water Board will revise or modify this Order in accordance with such standards.

### C. Groundwater Limitations

The discharge shall not cause the underlying groundwater to be degraded, to exceed water quality objectives, unreasonably effect beneficial uses, or cause a condition of pollution or nuisance.

## VI. PROVISIONS

### A. Standard Provisions

1. **Federal Standard Provisions.** The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.

2. **Regional Water Board Standard Provisions.** The Discharger shall comply with the following provisions.

   **a.** This Order may be modified, revoked, reissued, or terminated in accordance with the provisions of 40 C.F.R. sections 122.44, 122.62, 122.63, 122.64, 125.62 and 125.64. Causes for taking such actions include, but are not limited to: failure to comply with any condition of this Order; endangerment to human health or the environment resulting from the permitted activity; or acquisition of newly-obtained information which would have justified the application of different conditions if known at the time of Order adoption. The filing of a request by the Discharger for an Order modification, revocation, and issuance or termination, or a notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

   **b.** The Discharger must comply with the lawful requirements of municipalities, counties, drainage districts, and other local agencies regarding discharges of waste water to storm drain systems or other water courses under their jurisdiction; including applicable requirements in the municipal storm water management program developed to comply with NPDES permits issued by the Regional Water Board to local agencies.

   **c.** A discharge of waste to any point other than specifically described in this Order and permit is prohibited and constitutes a violation thereof.

   **d.** The Discharger shall comply with all applicable effluent limitations, national standards of performance, toxic effluent standards, and all federal regulations established pursuant to sections 301, 302, 303(d), 304, 306, 307, 316, 318, 405, and 423 of the federal CWA and amendments thereto.

   **e.** These requirements do not exempt the operator of the facility from compliance with any other laws, regulations, or ordinances which may be applicable; they do not legalize this facility, and they leave unaffected any further restraints on the disposal of wastes at this site which may be contained in other statutes or required by other agencies.

   **f.** Oil or oily material, chemicals, refuse, or other waste materials shall not be stored or deposited in areas where they may be picked up by rainfall and carried off of the property and/or discharged to surface waters. Any such spill of such materials shall be contained and removed immediately.

   **g.** A copy of these waste discharge specifications shall be maintained at the discharge facility so as to be available at all times to operating personnel.

   **h.** After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

      **i.** Violation of any term or condition contained in this Order;

      **ii.** Obtaining this Order by misrepresentation, or failure to disclose all relevant facts;

**iii.** A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

**i.** If there is any storage of hazardous or toxic materials or hydrocarbons at this facility and if the facility is not manned at all times, a 24-hour emergency response telephone number shall be prominently posted where it can easily be read from the outside.

**j.** The Discharger shall notify the Regional Water Board not later than 120 days in advance of implementation of any plans to alter the operation and treatment capacity by more than ten percent. Such notification shall include estimates of proposed treatment capacity, and projected effects on effluent quality. Notification shall include submittal of a new report of waste discharge appropriate filing fee.

**k.** All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Regional Water Board as soon as they know or have reason to believe that they have begun or expect to begin to use or manufacture an intermediate or final product or byproduct of any toxic pollutant that was not reported on their application.

**l.** In the event of any change in name, ownership, or control of these waste disposal facilities, the discharger shall notify this Regional Water Board of such change and shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be forwarded to the Regional Water Board.

**m.** The Water Code provides that any person who violates a waste discharge requirement or a provision of the Water Code is subject to civil penalties of up to $5,000 per day, $10,000 per day, or $25,000 per day of violation, or when the violation involves the discharge of pollutants, is subject to civil penalties of up to $10 per gallon per day or $25 per gallon per day of violation; or some combination thereof, depending on the violation, or upon the combination of violations.

**n.** Violation of any of the provisions of the NPDES program or of any of the provisions of this Order may subject the violator to any of the penalties described herein, or any combination thereof, at the discretion of the prosecuting authority; except that only one kind of penalty may be applied for each kind of violation.

**o.** The discharge of any product registered under the Federal Insecticide, Fungicide, and Rodenticide Act to any waste stream which may ultimately be released to waters of the United States, is prohibited unless specifically authorized elsewhere in this permit or another NPDES permit. This requirement is not applicable to products used for lawn and agricultural purposes.

**p.** The discharge of any waste resulting from the combustion of toxic or hazardous wastes to any waste stream that ultimately discharges to waters of the United States is prohibited, unless specifically authorized elsewhere in this permit.

**q.** The Discharger shall notify the Executive Officer in writing no later than 6 months prior to the planned discharge of any chemical, other than the products previously reported to the Executive Officer, which may be toxic to aquatic life. Such notification shall include:

**i.** Name and general composition of the chemical,

**ii.** Frequency of use,

**iii.** Quantities to be used,

**iv.** Proposed discharge concentrations, and

**v.** USEPA registration number, if applicable.

**r.** Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

**s.** In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, Average Monthly Effluent Limitation (AMEL), Maximum Daily Effluent Limitation (MDEL), instantaneous maximum effluent limitation, or receiving water limitation of this Order, the Discharger shall notify the Regional Water Board by telephone (213) 576-6600 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Regional Water Board waives confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

**t.** Prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. (Water Code section 1211).

## B. Monitoring and Reporting Program (MRP) Requirements

The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E.

## C. Special Provisions

### 1. Reopener Provisions

**a.** If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the federal CWA, and amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such more stringent standards.

**b.** This Order may be reopened to include effluent limitations for toxic constituents determined to be present in significant amounts in the discharge through a more comprehensive monitoring program included as part of this Order and based on the results of the RPA.

**c.** This Order may be reopened and modified in accordance with the provisions set forth in 40 C.F.R. parts 122 and 124, to include requirements for the implementation of the watershed management approach or to include new Minimum Levels (MLs).

**d.** This Order may be reopened and modified to revise effluent limitations as a result of future Basin Plan Amendments, such as an update of an objective or the adoption of a TMDL for the Santa Monica Bay or King Harbor.

**e.** This Order may be reopened upon submission by the Discharger of adequate information, as determined by the Regional Water Board, to provide for dilution credits or a mixing zone, as may be appropriate.

**f.** This Order may be reopened and modified to revise limitations or provisions as a result of future updates or amendments to the OTC Policy.

**g.** This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant generated by special conditions included in this Order. These special conditions may be, but are not limited to, fish tissue sampling, whole effluent toxicity, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.

**2. Special Studies, Technical Reports and Additional Monitoring Requirements**

**a. Initial Investigation Toxicity Reduction Evaluation (TRE) Workplan.** The Discharger shall submit to the Regional Water Board an Initial Investigation Toxicity Reduction Evaluation (TRE) workplan (1-2 pages) **within 90 days** of the effective date of this permit. If the Executive Director does not disapprove of the workplan within 60 days, the workplan shall become effective. The Discharger shall use USEPA manual EPA/600/2-88/070 (industrial) as guidance. This plan shall describe the steps the permittee intends to follow in the event that a violation of the chronic toxicity limits occurs, and should include at a minimum:

**i.** A description of the investigation and evaluation techniques that will be used to identify potential causes/sources of toxicity, effluent variability, and treatment system efficiency;

**ii.** A description of the facility's method of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in operation of the facility;

**iii.** If a toxicity identification evaluation (TIE) is necessary, an indication of the person who would conduct the TIEs (i.e., an in-house expert or an outside contractor) (Section V of the MRP, Attachment E, provides references for the guidance manuals that should be used for performing TIEs).

**b. Mixing Zone Study Workplan.** The dilution ratio of 11.5:1 (receiving water to effluent) established in Order No. 00-085 is retained in this Order for discharges to the Pacific Ocean via Discharge Point 001 through December 31, 2020, when the Facility will cease discharges as per the OTC Policy. If discharges will continue past that date, the Discharger must provide advanced notification to the Regional Water Board, as well as a work plan to timely complete a mixing zone study.. The study shall identify the boundary of the zone of initial dilution (ZID) based on modeling results, and include monitoring upstream of the discharge point, directly above the discharge location, at the boundary of the ZID and outside the ZID for the list of constituents included in Table 1 of the Ocean Plan, to confirm the assumptions made by the model.

**3. Storm Water Pollution Prevention Plan (SWPPP), Best Management Practices Plan (BMPP), and Spill Contingency Plan (SCP)**

The Discharger shall submit to the Regional Water Board, **within 90 days** of the effective date of this Order:

**a.** An updated SWPPP that describes site-specific management practices for minimizing contamination of storm water runoff and for preventing contaminated

storm water runoff from being discharged directly to waters of the state. The SWPPP shall be developed in accordance with the requirements in Attachment G.

**b.** A BMPP that will be implemented to reduce the discharge of pollutants and/or trash to the receiving water. The BMPP may be included within the SWPPP as a description of best management practices (BMPs). Attachment G provides information regarding the description of BMPs. The BMPP shall include site-specific plans and procedures implemented and/or to be implemented to prevent hazardous waste/material from being discharged to waters of the state. Further, the Discharger shall assure that the storm water discharges from the Facility would neither cause, nor contribute to the exceedance of water quality standards and objectives, nor create conditions of nuisance in the receiving water, and that any potential unauthorized discharges (i.e., spills) to the receiving water have been effectively prohibited. In particular, a risk assessment of each area identified by the Discharger shall be performed to determine the potential for hazardous or toxic waste/material discharge to surface waters.

**c.** A Spill Contingency Plan SCP that includes a technical report on the preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events at the site.

Plans shall cover all areas of the Facility and shall include an updated drainage map for the Facility. The Discharger shall identify on a map of appropriate scale the areas that contribute runoff to the permitted discharge points. The Discharger shall describe the activities in each area and the potential for contamination of storm water runoff and the discharge of hazardous waste/material and/or trash.

The Discharger shall implement the SWPPP, BMPP, and SCP within 10 days of the approval by the Executive Officer or no later than 90 days after submission to the Regional Water Board, whichever comes first. The SWPPP and the BMPP shall be reviewed annually and at the same time; and the SCP shall also be reviewed annually. Updated information shall be submitted to the Regional Water Board within 30 days of revision.

**4. Construction, Operation and Maintenance Specifications**

**a.** The Discharger shall at all times properly operate and maintain all facilities and systems installed or used to achieve compliance with this order.

**b.** The Discharger shall develop and maintain a record of all spills from the facility. A spill shall be defined as any release of waste not allowed under Section III.A of this Order that causes, or probably will cause, a discharge to any waters of the state. (Health and Safety Code section 5411.5). This record shall be made available to the Regional Water Board and USEPA upon request. The Discharger shall submit to the Regional Water Board and USEPA a report listing all spills, overflows or bypasses occurring during the previous quarter in the quarterly monitoring reports. The reports shall provide the date and time of each spill, the location of each spill, the estimated volume of each spill, including gross volume, amount recovered and amount not recovered; the cause of each spill, whether each spill, entered a receiving water and, if so, the name of the water body and whether it entered via storm drains or other man-made conveyances; mitigation measures implemented; corrective measures implemented or proposed to be implemented to prevent/minimize future occurrences; and beneficial uses impacted.

**5. Special Provisions for Municipal Facilities—Not Applicable**

**6. Other Special Provisions**

**a. Once-Through Cooling Water Compliance Schedule**

**i. Compliance Date and Alternatives**

The Discharger submitted an implementation plan for compliance with the State Water Board's *Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling* (OTC Policy) on April 1, 2011, which was later amended on Jun 17, 2011. According to its implementation plan, the Facility consists of four natural gas electric generating units (Units 5, 6, 7, and 8). Units 1 through 4 were permanently retired in the 1980's. Per its implementation plan, its amendment, and further correspondence, the Discharger has proposed to bring Units 5, 6, 7, and 8, into compliance using Track 1 with the construction of either a simple cycle or combined cycle gas turbine generation (CCGT) facility to replace the 4 units. The compliance mechanism is to be completed in two phases, assuming the redevelopment of the first new CCGT block at the Huntington Beach Generating Station proceeds on schedule, and that contracts, financing, permits, and licenses do not delay the process. The first phase would consist of shutting down Units 6 and 8 by December 2018 and replacing them with a CCGT power block of approximately 496 MW to be ready for commercial operation by the first quarter of 2021. The second phase would consist of shutting down Units 5 and 7 by the final OTC compliance date of December 31, 2020. This Order requires the Discharger to provide annual progress reports to the Regional Water Board to document the Facility's progress towards compliance with the OTC Policy:

**Table 8. Progress Update Schedule for Compliance with OTC Policy**

| Task | Progress Report Due Date |
|---|---|
| 1. Submit Workplan for OTC compliance under Track 1 and/or Track 2. | June 1, 2016 |
| 2. Submit first progress Report on compliance actions. | May 1, 2017 |
| 3. Submit second progress Report. | May 1, 2018 |
| 4. Submit third progress Report. | May 1, 2019 |
| 5. Submit fourth progress Report. | May 1, 2020 |
| 6. Achieve full compliance with Units 5, 6, 7 and 8. | December 31, 2020 |

Based on the need for continued operation to maintain the reliability of the electric system, the Regional Water Board or State Water Board may reopen this Order to suspend the compliance date under the circumstances set forth in OTC Policy section 2.B(2).

**ii. Immediate and Interim Requirements.** The Discharger shall implement the following immediate and interim actions:

(a) As of **October 1, 2011**, any unit that is not directly engaged in power-generating activities or critical system maintenance shall cease intake flows unless it has been demonstrated to the State Water Board that a reduced minimum flow is necessary for operations.

(b) Commencing on **October 1, 2015,** implement measures to mitigate interim impingement and entrainment impacts until full compliance is achieved by December 31, 2020. If proposing to mitigate by funding to the Coastal Conservancy, working with the California Ocean Protection Council, for mitigation projects directed toward increases in marine life associated with the State's Marine Protected Areas within your local area, the funding shall be based on the amount determined by the State Water Board Chief Deputy Director.

**iii. OTC Policy Compliance Update**

On February 12, 2016, the Discharger submitted to the State Water Board supplemental information for the OTC compliance implementation plan. This submission indicated that Units 5-8 are fully contracted through May 31, 2018, and will remain in operation at least through that date. The submission also indicated that due to Power Purchase Agreements awarded to the AES Alamitos and AES Huntington Beach generating stations, the shutdown of Units 5-8 will be required prior to the OTC Policy compliance date of December 31, 2020. Therefore, the Discharger is not considering alternatives for continued operation of the Facility (i.e. the conversion of Units 5-7 to CCGT power blocks) beyond that date.

**7.** At a meeting with the Regional Water Board on May 3, 2016, the Discharger indicated that the current plan is to permanently retire the Facility between May, 2018 and December, 2020. The Facility is no longer planning to construct new CCGT power blocks and the discharge of OTC water will cease when the Facility is permanently retired.

**8. Compliance Schedules—Not Applicable**

## VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in section IV of this Order will be determined as specified below:

### A. Single Constituent Effluent Limitation

If the concentration of the pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported Minimum Level (see Reporting Requirement I.G. of the MRP), then the Discharger is out of compliance.

### B. Effluent Limitations Expressed as a Sum of Several Constituents

If the sum of the individual pollutant concentrations is greater than the effluent limitation, then the Discharger is out of compliance. In calculating the sum of the concentrations of a group of pollutants, consider constituents reported as ND or DNQ to have concentrations equal to zero, provided that the applicable ML is used.

### C. Effluent Limitations Expressed as a Median

In determining compliance with a median limitation, the analytical results in a set of data will be arranged in order of magnitude (either increasing or decreasing order); and

**1.** If the number of measurements (n) is odd, then the median will be calculated as = $X_{(n+1)/2}$, or

**2.** If the number of measurements (n) is even, then the median will be calculated as = $[X_{n/2} + X_{(n/2)+1}]$, i.e., the midpoint between the n/2 and n/2+1 data points.

**D. Mass-based Effluent Limitations**

In calculating mass emission rates from the monthly average concentrations, use one half of the method detection limit for "Not Detected" (ND) and the estimated concentration for "Detected, but Not Quantified" (DNQ) for the calculation of the monthly average concentration. To be consistent with Limitations and Discharge Requirements, Section VII.B, if all pollutants belonging to the same group are reported as ND or DNQ, the sum of the individual pollutant concentration should be considered as zero for the calculation of the monthly average concentration.

**E. Multiple Sample Data**

When determining compliance with an AMEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

**1.** The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

**2.** The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

**F. Average Monthly Effluent Limitation (AMEL)**

If the average (or when applicable, the median determined by subsection E above for multiple sample data) of daily discharges over a calendar month exceeds the AMEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Discharger will be considered out of compliance for that calendar month. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

In determining compliance with the AMEL, the following provisions shall also apply to all constituents:

**1.** If the analytical result of a single sample, monitored monthly, quarterly, semiannually, or annually, does not exceed the AMEL for that constituent, the Discharger has demonstrated compliance with the AMEL for that month.

**2.** If the analytical result of a single sample, monitored monthly, quarterly, semiannually, or annually, exceeds the AMEL for any constituent, the Discharger shall collect four additional samples at approximately equal intervals during the month. All five analytical results shall be reported in the monitoring report for that month, or 45 days after results for the additional samples were received, whichever is later.

When all sample results are greater than or equal to the reported ML (see Reporting Requirement I.G. of the MRP), the numerical average of the analytical results of these five samples will be used for compliance determination.

3. In the event of noncompliance with an AMEL, the sampling frequency for that constituent shall be increased to weekly and shall continue at this level until compliance with the AMEL has been demonstrated.

4. If only one sample was obtained for the month or more than a monthly period and the result exceeds the AMEL, then the Discharger is in violation of the AMEL.

**G. Maximum Daily Effluent Limitations (MDEL)**

If a daily discharge on a calendar day exceeds the MDEL for a given parameter, an alleged violation will be flagged and the Discharger will be considered out of compliance for that day for that parameter. If no sample (daily discharge) is taken over a calendar day, no compliance determination can be made for that day with respect to an effluent violation determination, but compliance determination can be made for that day with respect to reporting violation determination.

**H. Average Concentration Effluent Limitation (for Free Available Chlorine)**

If the average concentration of discharge during a chlorine release period exceeds the average concentration effluent limitation for free available chlorine, an alleged violation will be flagged and the Discharger will be considered out of compliance. Discharge of chlorine is limited to 2 hours/day/unit. The average concentration shall be calculated as the sum of all discharges of free available chlorine measured during a chlorine release period divided by the number of measurements taken for that parameter during that period. If no sample is taken over a chlorine release period, no compliance determination can be made for that chlorine release period with respect to an effluent violation determination, but compliance determination can be made for that chlorine release period with respect to the monitoring and reporting required.

**I. Instantaneous Minimum Effluent Limitation**

If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, a violation will be flagged and the discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of non-compliance with the instantaneous minimum effluent limitation).

**J. Instantaneous Maximum Effluent Limitation**

If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, a violation will be flagged and the discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation).

**K. Chronic Toxicity**

This discharge is subject to determination of “Pass” or “Fail” and “Percent (%) Effect” from a single-effluent concentration chronic toxicity test at the discharge in-stream waste concentration (IWC)—set at 8 percent effluent for discharge at Discharge Point 001 and 100 percent effluent for Discharge Point 002—using the Test of Significant Toxicity (TST) statistical approach described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010), Appendix A, Figure A-1, and Table A-1. The null hypothesis (Ho) for the TST approach is: Mean discharge IWC response ≤0.75 × Mean control response. A test result that rejects this null hypothesis is

reported as “Pass”. A test result that does not reject this null hypothesis is reported as “Fail”. The relative “Percent (%) Effect” at the discharge IWC is defined and reported as: ((Mean control response – Mean discharge IWC response) ÷ Mean control response)) × 100.

Accelerated monitoring for chronic toxicity is triggered when a chronic toxicity test, analyzed using the TST approach, results in “Fail”.

# ATTACHMENT A – DEFINITIONS

**Arithmetic Mean (μ)**
Also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

Arithmetic mean = $\mu = \Sigma x / n$ where: $\Sigma x$ is the sum of the measured ambient water concentrations, and n is the number of samples.

**Average Monthly Effluent Limitation (AMEL)**
The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

**Best Management Practices (BMPs)**
BMPs are methods, measures, or practices designed and selected to reduce or eliminate the discharge of pollutants to surface waters from point and nonpoint source discharges including storm water. BMPs include structural and non-structural control, and operation maintenance procedures, which can be applied before, during, and/or after pollution-producing activities.

**Bioaccumulative**
Those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

**Carcinogenic**
Pollutants are substances that are known to cause cancer in living organisms.

**Coefficient of Variation (CV)**
CV is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

**Daily Discharge**
Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

**Detected, but Not Quantified (DNQ)**
DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

**Dilution Credit**
Dilution Credit is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

**Effluent Concentration Allowance (ECA)**
ECA is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in USEPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

**Enclosed Bays**
Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

**Estimated Chemical Concentration**
The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

**Estuaries**
Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the appropriate areas of the Ventura River, Santa Clara River, Calleguas Creek, Ballona Creek, Dominguez Channel, Los Angeles River and San Gabriel River. Estuaries do not include inland surface waters or ocean waters.

**Existing Discharger**
Any discharger that is not a new discharger. An existing discharger includes an "increasing discharger" (i.e., any existing facility with treatment systems in place for its current discharge that is or will be expanding, upgrading, or modifying its permitted discharge after the effective date of this Order).

**Infeasible**
Not capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

**Inland Surface Waters**
All surface waters of the state that do not include the ocean, enclosed bays, or estuaries.

**Instantaneous Maximum Effluent Limitation**
The highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

**Instantaneous Minimum Effluent Limitation**
The lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

**Low Volume Wastes**
Per 40 C.F.R. 423.11(b): The term *low volume wastes sources* means, taken collectively as if from one source, wastewater from all sources except those for which specific limitations are otherwise established in this part. Low volume wastes sources include, but are not limited to: wastewaters from wet scrubber air pollution control systems, ion exchange water treatment system, water treatment evaporator blowdown, laboratory and sampling streams, boiler blowdown, floor drains, cooling tower basin cleaning wastes, and recirculating house service water systems. Sanitary and air conditioning wastes are not included.

**Maximum Daily Effluent Limitation (MDEL)**
The highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

**Median**
The middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the n/2 and n/2+1).

**Metal Cleaning Wastes**
Per 40 C.F.R. 423.11(d): The term *metal cleaning waste* means any wastewater resulting from cleaning [with or without chemical cleaning compounds] any metal process equipment including, but not limited to, boiler tube cleaning, boiler fireside cleaning, and air preheater cleaning.

**Method Detection Limit (MDL)**
MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in in 40 C.F.R. part 136, Attachment B, revised as of July 3, 1999.

**Minimum Level (ML)**
ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

**Mixing Zone**
Mixing Zone is a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

**Not Detected (ND)**
Sample results which are less than the laboratory's MDL.

**Persistent Pollutants**
Persistent pollutants are substances for which degradation or decomposition in the environment is nonexistent or very slow.

**Pollutant Minimization Program (PMP)**
PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

**Pollution Prevention**
Pollution Prevention means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State Water Resources Control Board (State Water Board) or the Regional Water Board.

**Reporting Level (RL)**
The RL is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order, including an additional factor if applicable as discussed herein. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

**Satellite Collection System**
The portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility to which a sanitary sewer system is tributary.

**Source of Drinking Water**
Any water designated as municipal or domestic supply (MUN) in a Regional Water Board Basin Plan.

**Standard Deviation ($\sigma$)**
Standard Deviation is a measure of variability that is calculated as follows:

$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:
$x$ is the observed value;
$\mu$ is the arithmetic mean of the observed values; and
$n$ is the number of samples.

**Toxicity Reduction Evaluation (TRE)**
TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

## ACRONYMS AND ABBREVIATIONS

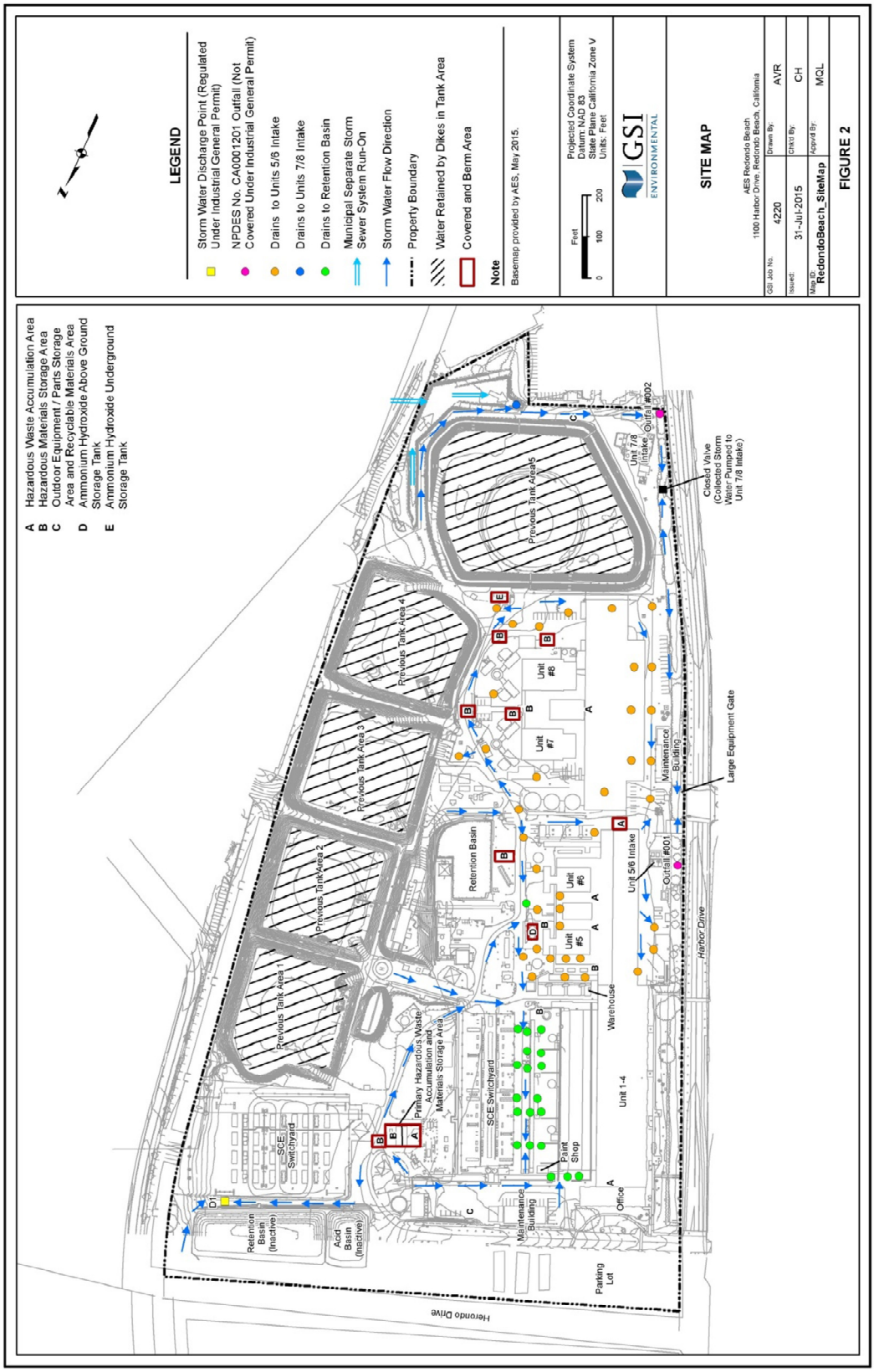
| | |
|---|---|
| AMEL | Average Monthly Effluent Limitation |
| B | Background Concentration |
| BAT | Best Available Technology Economically Achievable |
| Basin Plan | *Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* |
| BCT | Best Conventional Pollutant Control Technology |
| BMP | Best Management Practices |
| BMPP | Best Management Practices Plan |
| BPJ | Best Professional Judgment |
| BOD | Biochemical Oxygen Demand 5-day @ 20 °C |
| BPT | Best Practicable Treatment Control Technology |
| C | Water Quality Objective |
| CCR | California Code of Regulations |
| CEQA | California Environmental Quality Act |
| C.F.R. | Code of Federal Regulations |
| CTR | California Toxics Rule |
| CV | Coefficient of Variation |
| CWA | Clean Water Act |
| CWC | California Water Code |
| Discharger | AES Redondo Beach LLC |
| DMR | Discharge Monitoring Report |
| DNQ | Detected But Not Quantified |
| ELAP | California Department of Public Health Environmental Laboratory Accreditation Program |
| ELG | Effluent Limitations, Guidelines and Standards |
| Facility | Redondo Beach Generating Station |
| Gpd | gallons per day |
| IC | Inhibition Coefficient |
| $IC_{15}$ | Concentration at which the organism is 15% inhibited |
| $IC_{25}$ | Concentration at which the organism is 25% inhibited |
| $IC_{40}$ | Concentration at which the organism is 40% inhibited |
| $IC_{50}$ | Concentration at which the organism is 50% inhibited |
| IWC | In-stream Waste Concentration |
| LA | Load Allocations |
| LOEC | Lowest Observed Effect Concentration |
| µg/L | micrograms per Liter |
| mg/L | milligrams per Liter |
| MDEL | Maximum Daily Effluent Limitation |
| MEC | Maximum Effluent Concentration |
| MGD | Million Gallons Per Day |
| ML | Minimum Level |
| MRP | Monitoring and Reporting Program |
| ND | Not Detected |
| NOEC | No Observable Effect Concentration |
| NPDES | National Pollutant Discharge Elimination System |
| NSPS | New Source Performance Standards |
| NTR | National Toxics Rule |
| OAL | Office of Administrative Law |
| PMEL | Proposed Maximum Daily Effluent Limitation |

| | |
|---|---|
| PMP | Pollutant Minimization Plan |
| POTW | Publicly Owned Treatment Works |
| QA | Quality Assurance |
| QA/QC | Quality Assurance/Quality Control |
| Ocean Plan | *Water Quality Control Plan for Ocean Waters of California* |
| Regional Water Board | California Regional Water Quality Control Board, Los Angeles Region |
| RPA | Reasonable Potential Analysis |
| SCP | Spill Contingency Plan |
| Sediment Quality Plan | *Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1 Sediment Quality* |
| SIP | State Implementation Policy (*Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*) |
| SMR | Self-Monitoring Reports |
| State Water Board | California State Water Resources Control Board |
| SWPPP | Storm Water Pollution Prevention Plan |
| TAC | Test Acceptability Criteria |
| Thermal Plan | *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* |
| TIE | Toxicity Identification Evaluation |
| TMDL | Total Maximum Daily Load |
| TOC | Total Organic Carbon |
| TRE | Toxicity Reduction Evaluation |
| TSD | Technical Support Document |
| TSS | Total Suspended Solid |
| TST | Test of Significant Toxicity |
| $TU_c$ | Chronic Toxicity Unit |
| USEPA | United States Environmental Protection Agency |
| WDR | Waste Discharge Requirements |
| WET | Whole Effluent Toxicity |
| WLA | Waste Load Allocations |
| WQBELs | Water Quality-Based Effluent Limitations |
| WQS | Water Quality Standards |
| % | Percent |

## ATTACHMENT B – FACILITY LOCATION

| | | | |
|---|---|---|---|
| GSI ENVIRONMENTAL | GSI Job No. 4220 | Drawn by: AVR | SITE LOCATION MAP |
| | Issued: 20-Jun-2015 | Chk'd by: CH | AES Redondo Beach<br>1100 Harbo Drive, Redondo Beach, California |
| | Revised: | Aprv'd by: Draft | |
| | Map ID: RedondoBeach_SiteLocMap | FIGURE 1 | |

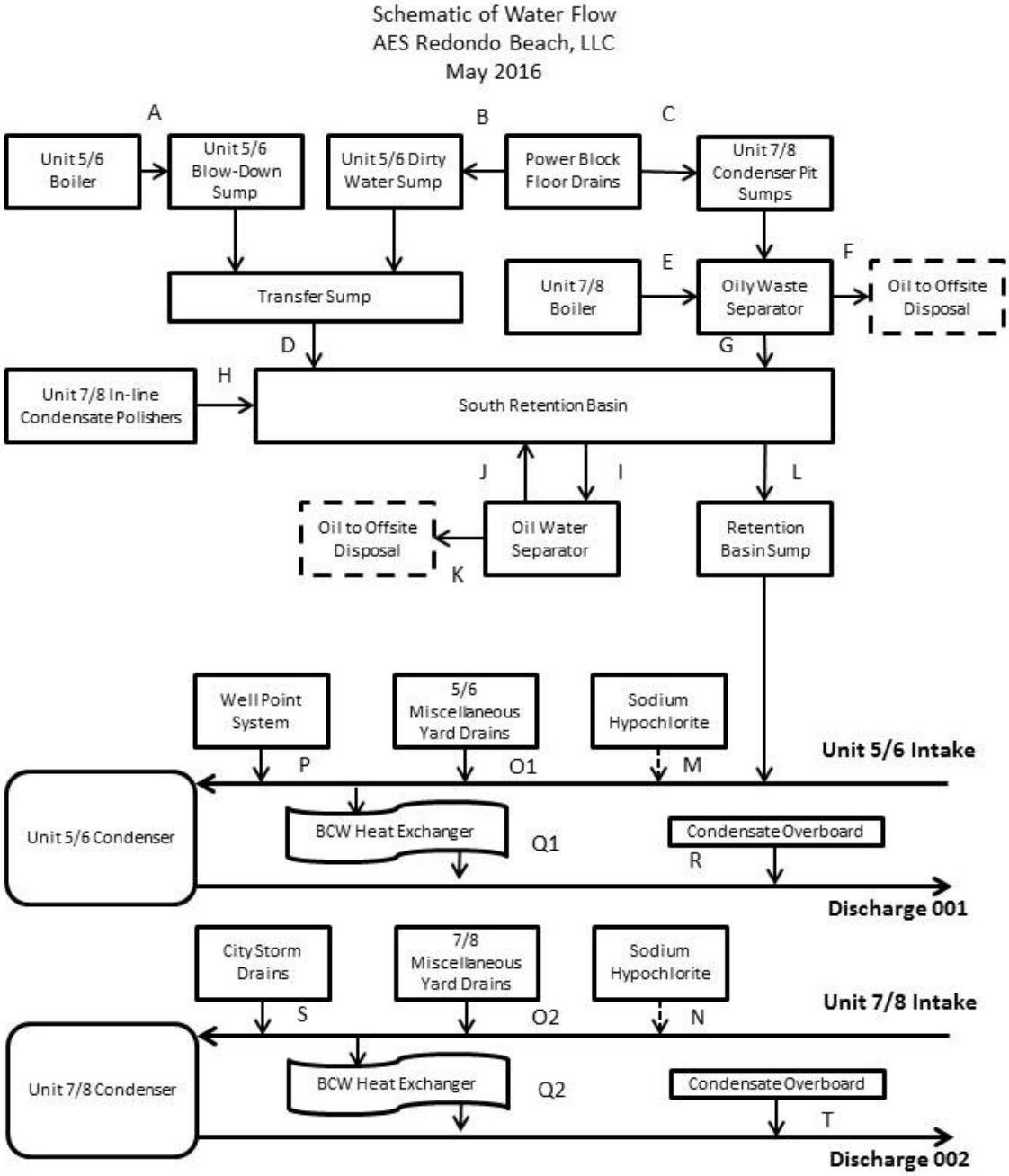
## ATTACHMENT B – SITE PLAN



**ATTACHMENT B – RECEIVING WATER MONITORING STATIONS IN KING HARBOR**

## ATTACHMENT B – RECEIVING WATER MONITORING STATIONS IN SANTA MONICA BAY

## ATTACHMENT C – FLOW SCHEMATIC




Miller, J.

## ATTACHMENT C – FLOW SCHEMATIC

| Footnote | Description | Flow Characterization |
|---|---|---|
| 5/6 Intake | 5/6 Intake | Each of the four circulating water pumps is designed at 37,000 GPM |
| 7/8 Intake | 7/8 Intake | Each of the four circulating water pumps is designed at 117,000 GPM |
| Discharge 001 | Discharge 001 | The maximum discharge flow is 215 MGD |
| Discharge 002 | Discharge 002 | The maximum discharge flow is 674 MGD |
| A | 5 and 6 Boiler Discharge | Discharges from the boiler include boiler drains and blowdown. Approximately 60,000 gallons of water is drained from each boiler after each shut down. Blowdown occurs during start-up and other operating times when the boiler water and/or steam parameters are exceeded. On average there may be 10,000 gallons of blowdown per operating run. |
| B | 5/6 Power Block Floor Drains | Drains exist throughout the operating units; minimal flow during routine operation, however stormwater and OTC saltwater leaks can increase this volume. |
| C | 7/8 Power Block Floor Drains | Drains exist throughout the operating units; minimal flow during routine operation, however stormwater and OTC saltwater leaks can increase this volume |
| D | Water from Transfer Sump | Water collected from within the operating units is collected here before being transferred to the retention basin |
| E | 7 and 8 Boiler Dischage | The discharge from 7/8 boiler is limited to boiler piping drainage. Approximately 30,000 gallons of water is drained from each boiler after each shut down. AES does not control how many shutdowns there will be per year. |
| F | Oil from 7/8 Separator | Oil separated by gravity is removed with a vacuum truck as needed. Quantity of oil removed varies from year to year. |
| G | Water from 7/8 Separator | Water separated from oil |
| H | Polisher Regeneration Water | The 7/8 in-line polishers are regereated approximately 1.5 times per start-up. The regeneration flow is approximately 30,000 gallons per event. |
| I | Retention Basin Surface Oil/Water | The surface of the retention basin is skimmed to remove floating oil at a rate of approximately 1 GPM |
| J | Water from Ret Basin Separator | The water separated from the oil is returned to the retention basin |
| K | Oil from Ret Basin Separator | Approximately 3,000 gallons of oily water is removed from this temporary storage tank annually by vacuum truck. |
| L | Water from the Retention Basin | Water is discharged after allowing sufficient time for separation. The flow is pumped to the forebay of Units 5/6 at an average rate of approximately 200,000 gallons per day, though this is dependent upon influx of water from upstream sources. The flow rate for the overboard pumps is 600 GPM total, equivalent to a daily maximum of 864,000 gallons. |
| M | 5/6 Chlorination | Maximum of 3 gallons of 12.5 wt% sodium hypochlorite per operating pump per day. Approximately 500 gallons per year, historically. |
| N | 7/8 Chlorination | Maximum of 9 gallons of 12.5 wt% sodium hypochlorite per operating pump per day. Approximately 4,000 gallons per year, historically. |
| O1 | 5/6 Miscellaneous Yard Drains | Drains that collect stormwater outside of the power block |
| O2 | 7/8 Miscellaneous Yard Drains | Drains that collect stormwater outside of the power block |
| P | Dewatering Water | Dewatering pumps operate continuously to keep groundwater level beneath Site stable. The water is a mixture of saltwater, groutwater and injected water from the nearby West Coast Basin Barrier Project and is removed at an average of apporximately 1.5 million gallons per day. |
| Q1 | 5/6 Bearing Cooling Water Heat Exchanger | Once through cooling water flows through this system designed to cool plant water without contacting system water |
| Q2 | 7/8 Bearing Cooling Water Heat Exchanger | Once through cooling water flows through this system designed to cool plant water without contacting system water |
| R | 5/6 Condensate Overboard | During start-ups at 5/6 the initial water that comes through the cycle (i.e. is condensed in the hotwell) is not pumped back into the sstem but is sent to the discharge. This is approximately 4,000 gallons per start-up. AES does not control how many start-ups there will be per year, though it is estimated to be less than 100,000 gallons per year. |
| S | City Storm Drains | Stormwater run-off from the city's streets enters the southeast side of the property and commingles with the 7/8 intake water. |
| T | 7/8 Condensate Overboard | Used only in an event when the condensate needs to be discharged rather than circulated through the unit. This is approximately 20,000 gallons per event. It is estimated to be less than 100,000 gallons per year. |

# ATTACHMENT D – STANDARD PROVISIONS

## I. STANDARD PROVISIONS – PERMIT COMPLIANCE

### A. Duty to Comply

**1.** The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (40 C.F.R. § 122.41(a); Wat. Code, §§ 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)

**2.** The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)

### B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 C.F.R. § 122.41(c).)

### C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. § 122.41(d).)

### D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 C.F.R. § 122.41(e).)

### E. Property Rights

**1.** This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)

**2.** The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c).)

**F. Inspection and Entry**

The Discharger shall allow the Regional Water Board, State Water Board, USEPA, and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (33 U.S.C. § 1318(a)(4)(b); 40 C.F.R. § 122.41(i); Wat. Code, §§ 13267, 13383):

**1.** Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(b)(i); 40 C.F.R. § 122.41(i)(1); Wat. Code, §§ 13267, 13383);

**2.** Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(b)(ii); 40 C.F.R. § 122.41(i)(2); Wat. Code, §§ 13267, 13383);

**3.** Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C. § 1318(a)(4)(b)(ii); 40 C.F.R. § 122.41(i)(3); Wat. Code, §§ 13267, 13383); and

**4.** Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (33 U.S.C. § 1318(a)(4)(b); 40 C.F.R. § 122.41(i)(4); Wat. Code, §§ 13267, 13383.)

**G. Bypass**

**1.** Definitions

**a.** “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).)

**b.** “Severe property damage” means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii).)

**2.** Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. § 122.41(m)(2).)

**3.** Prohibition of bypass. Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):

**a.** Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));

**b.** There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and

**c.** The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)

**4.** The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)

**5.** Notice

**a.** Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. As of December 21, 2020 all notices must be submitted electronically by the Discharger to the initial recipient, as defined in 40 C.F.R. section 127.2(b), in compliance with this section and 40 C.F.R. part 3 (including, in all cases, subpart D of part 3), section 122.22, and 40 C.F.R. part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of part 127, the Discharger may be required to report electronically if specified by a particular permit or if required to do so by state law. (40 C.F.R. § 122.41(m)(3)(i).)

**b.** Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). As of December 21, 2020 all notices must be submitted electronically by the Discharger to the initial recipient, as defined in 40 C.F.R. section 127.2(b), in compliance with this section and 40 C.F.R. part 3 (including, in all cases, subpart D of part 3), section 122.22, and 40 C.F.R. part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of part 127, the Discharger may be required to report electronically if specified by a particular permit or if required to do so by state law. (40 C.F.R. § 122.41(m)(3)(ii).)

## H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 C.F.R. § 122.41(n)(1).)

**1.** Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)

**2.** Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):

**a.** An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));

**b.** The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));

**c.** The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and

**d.** The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv).)

**3.** Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

## II. STANDARD PROVISIONS – PERMIT ACTION

### A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. § 122.41(f).)

### B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b).)

### C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. §§ 122.41(l)(3), 122.61.)

## III. STANDARD PROVISIONS – MONITORING

**A.** Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)

**B.** Monitoring must be conducted according to test procedures approved under 40 C.F.R. part 136 for the analyses of pollutants unless another method is required under 40 C.F.R. subchapters N or O. Monitoring must be conducted according to sufficiently sensitive test methods approved under 40 C.F.R. part 136 for the analysis of pollutants or pollutant parameters or as required under 40 C.F.R. chapter 1, subchapter N or O. For the purposes of this paragraph, a method is sufficiently sensitive when:

**1.** The method minimum level (ML) is at or below the level of the most stringent effluent limitation established in the permit for the measured pollutant or pollutant parameter, and either the method ML is at or below the level of the most stringent applicable water quality criterion for the measured pollutant or pollutant parameter or the method ML is above the applicable water quality criterion but the amount of the pollutant or pollutant parameter in the facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or

**2.** The method has the lowest ML of the analytical methods approved under 40 C.F.R. part 136 or required under 40 C.F.R. chapter 1, subchapter N or O for the measured pollutant or pollutant parameter.

In the case of pollutants or pollutant parameters for which there are no approved methods under 40 C.F.R. part 136 or otherwise required under 40 C.F.R. chapter 1, subchapters N or O, monitoring must be conducted according to a test procedure specified in this Order for such pollutants or pollutant parameters. (40 C.F.R. §§ 122.21(e)(3), 122.41(j)(4), 122.44(i)(1)(iv).)

## IV. STANDARD PROVISIONS – RECORDS

**A.** Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 C.F.R. part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)

**B. Records of monitoring information shall include:**

**1.** The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));

**2.** The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));

**3.** The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));

**4.** The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));

**5.** The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and

**6.** The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)

**C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):**

**1.** The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and

**2.** Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2).)

## V. STANDARD PROVISIONS – REPORTING

### A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or USEPA within a reasonable time, any information which the Regional Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, §§ 13267, 13383.)

### B. Signatory and Certification Requirements

**1.** All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 C.F.R. § 122.41(k).)

**2.** All permit applications shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 C.F.R. § 122.22(a)(1).)

**3.** All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

**a.** The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));

**b.** The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and

**c.** The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)

**4.** If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)

**5.** Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 C.F.R. § 122.22(d).)

**6.** If documents described in Standard Provisions – V.B.1, V.B.2, or V.B.3 are submitted electronically by or on behalf of the NPDES-regulated facility, any person providing the

electronic signature for such documents shall meet all relevant requirements of Standard Provisions – Reporting V.B, and shall ensure that all of the relevant requirements of 40 C.F.R. part 3 (including, in all cases, subpart D of part 3) (Cross-Media Electronic Reporting) and 40 C.F.R. part 127 (NPDES Electronic Reporting Requirements) are met for that submission. (40 C.F.R § 122.22(e).)

**C. Monitoring Reports**

**1.** Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.41(l)(4).)

**2.** Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting the results of monitoring, sludge use, or disposal practices. As of December 21, 2016 all reports and forms must be submitted electronically by the Discharger to the initial recipient, as defined in Standard Provisions – Reporting V.J, in compliance with this section and 40 C.F.R. part 3 (including, in all cases, subpart D of part 3), section 122.22, and 40 C.F.R. part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of part 127, the Discharger may be required to report electronically if specified by the permit or if required to do so by state law. (40 C.F.R. § 122.41(l)(4)(i).)

**3.** If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)

**4.** Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

**D. Compliance Schedules**

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 C.F.R. § 122.41(l)(5).)

**E. Twenty-Four Hour Reporting**

**1.** The Discharger shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A report shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental

impacts of the sewer overflow event, and whether the noncompliance was related to wet weather.

As of December 21, 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events must be submitted electronically by the Discharger to the initial recipient, as defined in Standard Provisions – Reporting V.J, in compliance with this section and 40 C.F.R. part 3 (including in all cases, subpart D of part 3), section 122.22, and 40 C.F.R. part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of part 127, the Discharger may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Regional Water Boardmay also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(6)(i).)

**2.** The following shall be included as information that must be reported within 24 hours:

**a.** Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)

**b.** Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)

**3.** The Regional Water Board may waive the above required written report on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(ii)(B).)

**F. Planned Changes**

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 C.F.R. § 122.41(l)(1)):

**1.** The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or

**2.** The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 C.F.R. § 122.41(l)(1)(ii).)

**3.** The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the prior permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R.§ 122.41(l)(1)(iii).)

### G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order's requirements. (40 C.F.R. § 122.41(l)(2).)

### H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in Standard Provision – Reporting V.E and the applicable required data in appendix A to 40 C.F.R. part 127. The Regional Water Boardmay also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(7).)

### I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)

### J. Initial Recipient for Electronic Reporting Data

The owner, operator, or the duly authorized representative is required to electronically submit NPDES information specified in appendix A to 40 C.F.R. part 127 to the appropriate initial recipient defined in 40 C.F.R. section 127.2(b). U.S. EPA will identify and publish the list of initial recipients on its website and in the Federal Register, by state and by NPDES data group [see 40 C.F.R. section 127.2(c)]. U.S. EPA will update and maintain this listing. (40 C.F.R. § 122.41(l)(9).)

## VI. STANDARD PROVISIONS – ENFORCEMENT

The Regional Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13268, 13385, 13386, and 13387.

## VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

### A. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural Dischargers shall notify the Regional Water Board as soon as they know or have reason to believe (40 C.F.R. § 122.42(a)):

**1.** That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. § 122.42(a)(1)):

**a.** 100 micrograms per liter (µg/L) (40 C.F.R. § 122.42(a)(1)(i));

**b.** 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(1)(ii));

**c.** Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(1)(iii)); or

**d.** The level established by the Regional Water Board in accordance with section 122.44(f). (40 C.F.R. § 122.42(a)(1)(iv).)

**2.** That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. § 122.42(a)(2)):

**a.** 500 micrograms per liter (µg/L) (40 C.F.R. § 122.42(a)(2)(i));

**b.** 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(2)(ii));

**c.** Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(2)(iii)); or

**d.** The level established by the Regional Water Board in accordance with section 122.44(f). (40 C.F.R. § 122.42(a)(2)(iv).)

**B. Publicly-Owned Treatment Works (POTWs)**

All POTWs shall provide adequate notice to the Regional Water Board of the following (40 C.F.R. § 122.42(b)):

**1.** Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the CWA if it were directly discharging those pollutants (40 C.F.R. § 122.42(b)(1)); and

**2.** Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order. (40 C.F.R. § 122.42(b)(2).)

**3.** Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 C.F.R. § 122.42(b)(3).)

# ATTACHMENT E – MONITORING AND REPORTING PROGRAM – CI NO. 0536

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## ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP No. 0536)

The Code of Federal Regulations (40 C.F.R. § 122.48) requires that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the California Regional Water Quality Control Board, Los Angeles Region (Regional Water Board) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement federal and California regulations.

### I. GENERAL MONITORING PROVISIONS

**A.** Effluent sampling stations shall be established for Discharge Point No. 001 (Latitude 33.8494444º North, Longitude -118.4022222º West) and Discharge Point No. 002 (Latitude 33.843º North, Longitude -118.394º West. These sampling stations shall be located where representative samples of that effluent can be obtained.

**B.** Effluent samples shall be taken downstream of any addition to treatment works and prior to mixing with the receiving waters.

**C.** The Regional Water Board shall be notified in writing of any change in the sampling stations once established or in the methods for determining the quantities of pollutants in the individual waste streams.

**D.** Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. sections 136.3, 136.4, and 136.5 (revised May 18, 2012); or, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Resources Control Board (State Water Board).

**E.** Laboratories analyzing effluent samples and receiving water samples shall be certified by the State Water Board Environmental Laboratory Accreditation Program (ELAP) or approved by the Executive Officer and must include quality assurance/quality control (QA/QC) data in their reports. A copy of the laboratory certification shall be provided each time a new certification and/or renewal of the certification is obtained from ELAP.

**F.** For any analyses performed for which no procedure is specified in the United States Environmental Protection Agency (USEPA) guidelines or in the MRP, the constituent or parameter analyzed and the method or procedure used must be specified in the monitoring report.

**G.** The monitoring reports shall specify the analytical method used, the Method Detection Limit (MDL), and the Minimum Level (ML) for each pollutant. For the purpose of reporting compliance with numerical limitations, performance goals, and receiving water limitations, analytical data shall be reported by one of the following methods, as appropriate:

**1.** An actual numerical value for sample results greater than or equal to the ML; or

**2.** “Detected, but Not Quantified (DNQ)” if results are greater than or equal to the laboratory’s MDL but less than the ML; or,

**3.** “Not-Detected (ND)” for sample results less than the laboratory’s MDL with the MDL indicated for the analytical method used.

Analytical data reported as “less than” for the purpose of reporting compliance with permit limitations shall be the same or lower than the permit limit(s) established for the given parameter.

Current ML’s (Attachment H) are those listed in Appendix II of the California Ocean Plan (Ocean Plan). In addition, samples for metals analyses, waste seawater discharge, storm

water effluent samples, reference station samples, and receiving water samples must be analyzed by the approved analytical method with the lowest MDL (currently Inductively Coupled Plasma/Mass Spectrometry) described in the Ocean Plan.

**H.** The MLs employed for effluent analyses to determine compliance with effluent limitations shall be lower than the effluent limitations established in this Order for a given parameter. If the ML value is not below the effluent limitation, then the lowest ML value and its associated analytical method shall be selected for compliance purposes. At least once a year, the Discharger shall submit a list of the analytical methods employed for each test and associated laboratory QA/QC procedures.

**I.** The MLs employed for effluent analyses not associated with determining compliance with effluent limitations in this order shall be lower than the lowest applicable water quality objective, for a given parameter. Water quality objectives for parameters may be found in Table 1 of the Ocean Plan. If the ML value is not below the water quality objective, then the lowest ML value and its associated analytical method shall be selected for compliance purposes. At least once a year, the Discharger shall submit a list of the analytical methods employed for each test, the associated laboratory QA/QC procedures, reporting levels (RLs), and method detection limits (MDLs).

The Regional Water Board, in consultation with the State Water Board Quality Assurance Program, shall establish a ML that is not contained in Attachment H to be included in the Discharger's permit in any of the following situations:

**1.** When the pollutant under consideration is not included in Attachment H;

**2.** When the Discharger and Regional Water Board agree to include in the permit a test method that is more sensitive than that specified in 40 C.F.R. part 136 (revised May 18, 2012);

**3.** When the Discharger agrees to use an ML that is lower than that listed in Attachment H;

**4.** When the Discharger demonstrates that the calibration standard matrix is sufficiently different from that used to establish the ML in Attachment H, and proposes an appropriate ML for their matrix, or;

**5.** When the Discharger uses a method whose quantification practices are not consistent with the definition of an ML. Examples of such methods are the USEPA-approved method 1613 for dioxins and furans, method 1624 for volatile organic substances, and method 1625 for semi-volatile organic substances. In such cases, the Discharger, the Regional Water Board, and the State Water Board shall agree on a lowest quantifiable limit and that limit will substitute for the ML for reporting and compliance determination purposes.

**J.** Water/wastewater samples must be analyzed within allowable holding time limits as specified in section 136.3. All QA/QC items must be run on the same dates the samples were actually analyzed, and the results shall be reported in the Regional Water Board format, when it becomes available, and submitted with the laboratory reports. Proper chain of custody procedures must be followed, and a copy of the chain of custody shall be submitted with the report.

**K.** All analyses shall be accompanied by the chain of custody, including but not limited to data and time of sampling, sample identification, and name of person who performed sampling, date of analysis, name of person who performed analysis, QA/QC data, method detection limits, analytical methods, copy of laboratory certification, and a statement, under penalty of perjury, executed by the person responsible for the laboratory.

**L.** The Discharger shall calibrate and perform maintenance procedures on all monitoring instruments to insure accuracy of measurements, or shall insure that both equipment activities will be conducted.

**M.** Field analyses for parameters that require short sample holding times such as pH, total residual chlorine and temperature may be performed on-site by properly-trained personnel acting on behalf of the Discharger. These analyses shall be performed using properly-calibrated and maintained portable instruments in accordance with the methods found at 40 C.F.R. part 136. Records of these analyses shall be maintained at the discharge facility so as to be available at all times to operating personnel and Regional Water Board staff. These records shall include the standard operating and quality-control procedures for all field analyses, records of personnel proficiency training and records of instrument calibration and maintenance. Results of these analyses shall be submitted to the Regional Water Board as part of the corresponding periodic monitoring report. Documentation of the results shall include measurement values, data and time of sample collection, name of analyst and instrument calculation information.

**N.** The Discharger shall have, and implement, an acceptable written quality assurance (QA) plan for laboratory analyses. Unless otherwise specified in the analytical method, duplicate samples must be analyzed at a frequency of 5% (1 in 20 samples) with at least one if there is fewer than 20 samples in a batch. A batch is defined as a single analytical run encompassing no more than 24 hours from to finish. A similar frequency shall be maintained for analyzing spiked samples.

**O.** When requested by the Regional Water Board or USEPA, the Discharger will participate in the NPDES discharge monitoring report QA performance study. The Discharger must have a success rate equal to or greater than 80%.

**P.** For parameters that both average monthly and daily maximum limits are specified and the monitoring frequency is less than four times a month, the following shall apply. If an analytical result is greater than the average monthly limit, the Discharger shall collect four additional samples at approximately equal intervals during the month, until compliance with the average monthly limit has been demonstrated. All five analytical results shall be reported in the monitoring report for that month, or 45 days after results for the additional samples were received, whichever is later. In the event of noncompliance with an average monthly effluent limitation, the sampling frequency for that constituent shall be increased to weekly and shall continue at this level until compliance with the average monthly effluent limitation has been demonstrated. The Discharger shall provide for the approval of the Executive Officer a program to ensure future compliance with the average monthly limit.

**Q.** In the event wastes are transported to a different disposal site during the report period, the following shall be reported in the monitoring report:

**1.** Types of wastes and quantity of each type;

**2.** Name and address for each hauler of wastes (or method of transport if other than by hauling); and

**3.** Location of the final point(s) of disposal for each type of waste.

If no wastes are transported off-site during the reporting period, a statement to that effect shall be submitted.

**R.** Each monitoring report shall state whether or not there was any change in the discharge as described in the Order during the reporting period.

**S.** Laboratories analyzing monitoring samples shall be certified by the State Water Board, in accordance with the provision of Water Code section 13176, and must include quality assurance/quality control data with their reports.

## II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

**Table E-1. Effluent Monitoring Station Locations**

| Discharge Point Name | Monitoring Location Name | Monitoring Location Description |
|---|---|---|
| 001 | EFF-001 | At a location where a representative sample of the commingled wastewater can be obtained after treatment but prior to discharge to the Pacific Ocean via Discharge Point 001. |
| 002 | EFF-002 | At a location where a representative sample of the commingled wastewater can be obtained after treatment but prior to discharge to King Harbor via Discharge Point 002. |
| 001A | INT-001A | At a location from the retention basin where a representative sample of all low volume wastes can be obtained after treatment but prior to commingling with other internal process waste streams or once-through cooling water that is to be discharged via Discharge Point 001. |
| Intake Forebay | FIP-001 | At a location where Fish Impingement Program sampling for Units 5 and 6 can be conducted. |
| Intake Forebay | FIP-002 | At a location where Fish Impingement Program sampling for Units 7 and 8 can be conducted. |

**Table E-2. Receiving Water Monitoring Station Locations**

| Type | Monitoring Location Name | Monitoring Location Description |
|---|---|---|
| Receiving water station | RSW-001 (previously RW1) | At the outfall terminus for Units 7 and 8 (within King Harbor). |
| Receiving water station | RSW-002 (previously RW2) | Located on an arc 500 feet from the point of discharge for Units 7 and 8, in a direction of 292 degree T. |
| Receiving water station | RSW-003 (previously RW3) | On an arc 500 feet from the point of discharge for Units 7 and 8, half the distance between RSW-002 and RSW-004 |
| Receiving water station | RSW-004 (previously RW4) | 500 feet from station RSW-001, on the intake conduit centerline |
| Receiving water station | RSW-005 (previously RW5) | On an arc 500 feet from the point of discharge for Units 7 and 8, half the distance between RSW-004 and RSW-006. |
| Receiving water station | RSW-006 (previously RW6) | On an arc 500 feet from the point of discharge for Units 7 and 8, in a direction of 150 degree T. |
| Receiving water station | RSW-007 (previously RW7) | On an arc 1,325 feet from the point of discharge for Units 7 and 8, in a direction of 292 degree T. |
| Receiving water station | RSW-008 (previously RW8) | On an arc 725 feet from the point of discharge for Units 7 and 8, in a direction of 292 degree T. |
| Receiving water station | RSW-009 (previously RW9) | At the navigation bell buoy outside of King Harbor. |
| Receiving water station | RSW-010 (previously RW10) | Directly between the discharge points for Units 5 and 6 (offshore of Redondo Beach). |
| Receiving water station | RSW-011 (previously RW11) | 1,000 feet down coast of station RSW-010, at the same depth as RSW-010. |
| Receiving water station | RSW-012 (previously RW12) | Directly offshore of Station RSW-011, at a depth of 40 feet. |
| Receiving water station | RSW-013 (previously RW13) | Directly offshore of station RSW-014, at a depth of 40 feet. |
| Receiving water station | RSW-014 (previously RW14) | 1,000 feet up coast of station RSW-010, at the same depth as RSW-010. |
| Receiving water station | RSW-015 (previously RW15) | 1,000 feet inshore of station RSW-010, along the centerline of the discharge conduits. |
| Receiving water station | RSW-016 (previously RW16) | 4,400 feet up coast of station RSW-010, at the same depth as RSW-010. |
| Benthic station | BEN-001 – BEN-007 (previously B1 – B7) | Located directly beneath Monitoring Locations RSW-001 through RSW-007, respectively. |
| Transect station | TRN-001 (previously C1) | Parallel to and 100 feet east of the discharge conduit for Units 7 and 8, initiated at the water edge. |
| Transect station | TRN-002 (previously C2) | Perpendicular to TRN-001 and extending 100 feet on either side of the discharge structure. |
| Transect station | TRN-003 (previously C3) | Parallel to the breakwater adjacent to the intakes for Units 5 and 6. |
| Mussel station | MUS-001 | As close as possible to the outfall of Discharge Point 001. |
| Mussel station | MUS-002 | As close as possible to the outfall of Discharge Point 002. |
| Mussel station | MUS-003 | Manhattan Beach Pier. |
| Zone of Initial Dilution (ZID) | ZID-001 | Outside of ZID within the waste field where initial dilution is completed. |

## III. INFLUENT MONITORING REQUIREMENTS

Fish Impingement Program

Impingement sampling for fish and commercially important macroinvertebrates shall be conducted semiannually at Monitoring Locations FIP-001 and FIP-002.

Fish and macroinvertebrates shall be identified to the lowest possible taxon. For each intake point, data reported shall include numerical abundance of each fish and macroinvertebrate species, wet weight of each species (when combined weight of individuals in each species exceeds 0.2 kg), number of individuals in each 1-centimeter size class (based on standard length) for each species and total number of species collected. When large numbers of given species are collected, length/weight data need only be recorded for 50 individuals and total number and total weight may be estimated based on aliquot samples. Total fish impingement per sampling event shall be reported and data shall be expressed per unit volume water entrained.

**Table E-3. Influent Monitoring at FIP-002**

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Required Analytical Test Method |
|---|---|---|---|---|
| ***Influent Monitoring at Location FIP-002*** | | | | |
| Total Coliform | MPN/ 100 mL | Grab | 2/year | -- |
| Fecal Coliform | MPN/ 100 mL | Grab | 2/year | -- |
| Enterococcus | MPN/ 100 mL | Grab | 2/year | -- |
| Copper, Total Recoverable | µg/L and mass[2] | Grab | 1/month[1] | -- |
| Mercury, Total Recoverable | µg/L and mass[2] | Grab | 1/month[1] | -- |
| Nickel, Total Recoverable | µg/L and mass[2] | Grab | 1/month[1] | -- |
| Silver, Total Recoverable | µg/L and mass[2] | Grab | 1/month[1] | -- |
| Thallium, Total Recoverable | µg/L and mass[2] | Grab | 1/month[1] | -- |
| Zinc, Total Recoverable | µg/L and mass[2] | Grab | 1/month[1] | -- |
| DDT | µg/L and mass[2] | Grab | 1/month[1] | -- |
| PCBs | µg/L and mass[2] | Grab | 1/month[1] | -- |

[1] Monthly monitoring is required from October 2016 through September 2017(one year period). If the discharge is in compliance with the prescribed effluent limitations during this one year period, after requesting and securing approval by the Executive Officer, the monitoring frequency may be decreased to quarterly.

[2] The mass emission (lbs/day) for the discharge shall be calculated and reported using the concentration and the actual flow rate measured at the time of discharge, using the formula:
Mass (lbs/day) = Actual Flow (MGD) x Reported Concentration (mg/L) x 8.34 (conversion factor)

## IV. EFFLUENT MONITORING REQUIREMENTS

### A. Monitoring Location EFF-001

The Discharger shall monitor Discharge Point No. 001 at Monitoring Location EFF-001 as follows:

**Table E-4. Effluent Monitoring at Monitoring Location EFF-001**

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Required Analytical Test Method |
|---|---|---|---|---|
| ***Effluent Monitoring at Location EFF-001*** | | | | |
| Flow | MGD | Flow Meter | Continuous[1] | -- |
| Temperature | °F | Meter | Continuous[3] | -- |
| pH | standard units | Grab | 1/week | -- |
| Ammonia, Total (as N) | mg/L and mass[4] | Grab | 1/year | 2 |
| Nitrate (as N) | mg/L and mass[4] | Grab | 1/year | 2 |
| Chronic Toxicity[5] | Pass or Fail and % effect for TST approach | 24-hour composite or grab | 1/quarter | 2 |
| Total Residual Chlorine | mg/L | Grab | 1/day[6] | 2 |
| Free Available Chlorine | mg/L | Grab | 1/day[6] | 2 |
| Beryllium, Total Recoverable | µg/L and mass[4] | Grab | 1/month[15] | 2 |
| Cadmium, Total Recoverable | µg/L and mass[4] | Grab | 1/month[15] | 2 |
| Chromium (VI)[7] | µg/L and mass[4] | Grab | 1/month[15] | 2 |
| Lead, Total Recoverable | µg/L and mass[4] | Grab | 1/month[15] | 2 |
| Mercury, Total Recoverable | µg/L and mass[4] | Grab | 1/month[15] | 2 |
| Nickel, Total Recoverable | µg/L and mass[4] | Grab | 1/month[15] | 2 |
| Selenium, Total Recoverable | µg/L and mass[4] | Grab | 1/month[15] | 2 |
| Silver, Total Recoverable | µg/L and mass[4] | Grab | 1/month[15] | 2 |
| DDT[8] | µg/L and mass[4] | Grab | 1/month[15] | 2 |
| PCBs[9] | µg/L and mass[4] | Grab | 1/month[15] | 2 |
| TCDD Equivalents[14] | µg/L and mass[4] | Grab | 2/year[11] | 2 |
| Remaining Ocean Plan Pollutants[10] | µg/L | Grab | 2/year[11] | 2 |
| Radioactivity (including gross alpha, gross beta, combined radium-226 and radium-228, tritium, strontium-90 and uranium) | pCi/L | Grab | 1/year | 12 |
| Total Coliform[13] | MPN/ 100 mL | Grab | 2/year | 2 |
| Fecal Coliform[13] | MPN/ 100 mL | Grab | 2/year | 2 |
| Enterococcus[13] | MPN/ 100 mL | Grab | 2/year | 2 |
| ***Low-Volume Wastes Monitoring at Location INT-001A*** | | | | |
| Flow | MGD | Totatlizing Meter | 1/day | -- |
| pH | standard units | Grab | 1/month | -- |
| Total Suspended Solids | mg/L | Grab | 1/month | 2 |
| Oil and Grease | mg/L | Grab | 1/month | 2 |
| Beryllium, Total Recoverable | µg/L | Grab | 1/month[15] | 2 |
| Cadmium, Total Recoverable | µg/L | Grab | 1/month[15] | 2 |
| Chromium (VI)[4] | µg/L | Grab | 1/month[15] | 2 |
| Lead, Total Recoverable | µg/L | Grab | 1/month[15] | 2 |
| Mercury, Total Recoverable | µg/L | Grab | 1/month[15] | 2 |
| Nickel, Total Recoverable | µg/L | Grab | 1/month[15] | 2 |

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Required Analytical Test Method |
|---|---|---|---|---|
| Selenium, Total Recoverable | µg/L | Grab | 1/month[15] | [2] |
| Silver, Total Recoverable | µg/L | Grab | 1/month[15] | [2] |
| Ocean Plan Pollutants[10] | µg/L | Grab | 2/year[11] | [2] |

[1] When continuous monitoring is required, the total daily flow shall be reported. Periods of no flow shall also be reported.

[2] Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136; for priority pollutants, the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding MLs.

[3] Only maximum temperatures for each calendar day shall be reported, except when temperature exceeds 106ºF, in which case the reason(s), duration, and time of day of the events of elevated temperature shall be reported.

[4] The mass emission (lbs/day) for the discharge shall be calculated and reported using the limitation concentration and the actual flow rate measured at the time of discharge, using the formula:

Mass (lbs/day) = Actual Flow (MGD) x Reported Concentration (mg/L) x 8.34 (conversion factor)

[5] Refer to section V, Whole Effluent Toxicity Testing Requirements.

[6] Monitoring is only applicable during periods of chlorine addition. A statement certifying that chlorination did not occur during the day may be submitted in lieu of an analysis.

[7] The Discharger may at their option meet this requirement as total chromium.

[8] DDT shall mean the sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD and 2,4'-DDD.

[9] PCBs shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260.

[10] Pollutants with water quality objectives designated in Table 1 of the Ocean Plan.

[11] Monitoring once per semiannual period (January – June, July – December).

[12] Analyze these radiochemicals by the following USEPA methods: method 900.0 for gross alpha and gross beta, method 903.0 or 903.1 for radium-226, method 904.0 for radium-228, method 906.0 for tritium, method 905.0 for strontium-90, and method 908.0 for uranium. Analysis for combined radium-226 & 228 shall be conducted only if gross alpha results for the same sample exceed 15 pCi/L or beta greater than 50 pCi/L. If radium-226 & 228 exceeds the stipulated criteria, analyze for tritium, strontium-90 and uranium.

A statement certifying that radioactive pollutants were not added to the discharge may be submitted in lieu of monitoring.

[13] For each annual monitoring event, at least five weekly samplings and analyses shall be conducted until a geometric mean can be obtained for each parameter (using the five most recent sample results).

[14] TCDD Equivalents shall mean the sum of the concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown in the table below. USEPA method 1613 may be used to analyze dioxin and furan congeners.

Dioxin-TEQ (TCDD Equivalents) = $\Sigma (C_x \times TEF_x)$

Where:

$C_x$ = concentration of dioxin or furan congener x

$TEF_x$ = TEF for congener x

**Toxicity Equivalency Factors**

| Isomer Group | Toxicity Equivalency Factor (TEF) |
|---|---|
| 2,3,7,8-tetra CDD | 1.0 |
| 2,3,7,8-penta CDD | 0.5 |
| 2,3,7,8-hexa CDDs | 0.1 |
| 2,3,7,8-hepta CDD | 0.01 |
| Octa CDD | 0.001 |
| 2,3,7,8 tetra CDF | 0.1 |
| 1,2,3,7,8 penta CDF | 0.05 |
| 2,3,4,7,8 penta CDF | 0.5 |
| 2,3,7,8 hexa CDFs | 0.1 |
| 2,3,7,8 hepta CDFs | 0.01 |
| Octa CDF | 0.001 |

[15] Monthly monitoring is required from October 2016 through September 2017 (one year period). If the discharge is in compliance with the prescribed effluent limitations during this one year period, after requesting and securing approval by the Executive Officer, the monitoring frequency may be decreased to quarterly.

### B. Monitoring for Low Volume Wastes at Monitoring Location EFF-001

The Discharger shall report the mass emission of all in-plant low volume wastes taken together prior to commingling with once-through cooling water using the calculated sum of mass emissions measured at Monitoring Location INT-001A as follows:

**Table E-5.Total Low Volume Wastes Monitoring**

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Required Analytical Test Method |
|---|---|---|---|---|
| Flow | MGD | -- | 1/day[5] | [2] |
| Beryllium, Total Recoverable | lb/day[3] | Calculated[3] | 1/month[1,6] | [2] |
| Cadmium, Total Recoverable | lb/day[3] | Calculated[3] | 1/month[1,6] | [2] |
| Chromium (VI)[7] | lb/day[3] | Calculated[3] | 1/month[1,6] | [2] |
| Lead, Total Recoverable | lb/day[3] | Calculated[3] | 1/month[1,6] | [2] |
| Mercury, Total Recoverable | lb/day[3] | Calculated[3] | 1/month[1,6] | [2] |
| Nickel, Total Recoverable | lb/day[3] | Calculated[3] | 1/month[1,6] | [2] |
| Selenium, Total Recoverable | lb/day[3] | Calculated[3] | 1/month[1,6] | [2] |
| Silver, Total Recoverable | lb/day[3] | Calculated[3] | 1/month[1,6] | [2] |

1. If no discharges of low volume wastes occurred during the month, the report shall so state.
2. Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136. For priority pollutants, the methods must meet the lowest minimum levels (MLs) specified in Appendix II of the Ocean Plan (2012) that is required to demonstrate compliance. Where no methods are specified for a given pollutant, the methods must be approved by the Regional Water Board or the State Water Board.
3. The mass emission (lbs/day) from each individual in-plant waste streams shall be calculated and reported using the actual concentration and the actual flow rate measured at the time of discharge from the individual in-plant low volume waste streams (as measured in INT-001A) using the formula:

   M (lbs/day) = C x Q x 0.00834
   Where:
   M = mass emission for a pollutant, lbs/day
   C = actual concentration for a pollutant, µg/L
   Q = actual discharge flow rate, MGD

   The combined mass emission of all in-plant waste streams taken together shall be determined as the sum of mass discharges of each parameter in the individual in-plant waste streams.

   Total Mass Emission per day (lbs/day) = (mass emission at INT-001A)
   Where:
   Mass emission at INT-001A is calculated using flow measured at INT-001A (lbs/day)

   The Total Mass Emission per day (lb/day) calculated for each day will be compared with the maximum daily effluent limitations as set forth in Table 8 of this Order for compliance determination; compliance with the 6-month median effluent limitations shall be determined by the median of Total Mass Emission per day values over any 180-day period.
4. The Discharger may at their option meet this limitation as a total chromium limitation.
5. Report flow of each individual low volume waste streams as measured at INT-001A.
6. Monthly monitoring is required from October 2016 through September 2017 (one year period). If the discharge is in compliance with the prescribed effluent limitations during this one year period, after requesting and securing approval by the Executive Officer, the monitoring frequency may be decreased to quarterly.

### C. Monitoring Location EFF-002

The Discharger shall monitor Discharge Point No. 002 at Monitoring Location EFF-002 as follows:

**Table E-6. Effluent Monitoring at Monitoring Location EFF-002**

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Required Analytical Test Method |
|---|---|---|---|---|
| ***Effluent Monitoring at Location EFF-002*** | | | | |
| Flow | MGD | Flow Meter | Continuous[1] | [2] |
| Temperature | °F | Meter | Continuous[3] | [2] |
| pH | standard units | Grab | 1/week | [2] |
| Ammonia, Total (as N) | mg/L and mass[4] | Grab | 1/year | [2] |
| Nitrate (as N) | mg/L and mass[4] | Grab | 1/year | [2] |
| Chronic Toxicity[5] | Pass or Fail and % effect for TST approach | 24-hour composite or grab | 1/quarter | [2] |
| Total Residual Chlorine | mg/L | Grab | 1/day[6] | [2] |
| Free Available Chlorine | mg/L | Grab | 1/day[6] | [2] |
| Copper, Total Recoverable | µg/L and mass[4] | Grab | 1/Month[12] | [2] |
| Mercury, Total Recoverable | µg/L and mass[4] | Grab | 1/Month[12] | [2] |
| Nickel, Total Recoverable | µg/L and mass[4] | Grab | 1/Month[12] | [2] |
| Silver, Total Recoverable | µg/L and mass[4] | Grab | 1/Month[12] | [2] |
| Thallium, Total Recoverable | µg/L and mass[4] | Grab | 1/Month[12] | [2] |
| Zinc, Total Recoverable | µg/L and mass[4] | Grab | 1/Month[12] | [2] |
| DDT[7] | µg/L and mass[4] | Grab | 1/Month[12] | [2] |
| PCBs[8] | µg/L and mass[4] | Grab | 1/Month[12] | [2] |
| TCDD Equivalents[13] | µg/L and mass[4] | Grab | 1/year | [2] |
| Priority Pollutants[9] | µg/L | Grab | 1/year | [2] |
| Radioactivity (including gross alpha, gross beta, combined radium-226 and radium-228, tritium, strontium-90 and uranium) | pCi/L | Grab | 1/year | [10] |
| Total Coliform[11] | MPN/ 100 mL | Grab | 2/year | [2] |
| Fecal Coliform[11] | MPN/ 100 mL | Grab | 2/year | [2] |
| Enterococcus[11] | MPN/ 100 mL | Grab | 2/year | [2] |

[1] When continuous monitoring is required, the total daily flow shall be reported. Periods of no flow shall also be reported.

[2] Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136; for priority pollutants, the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding MLs.

[3] Only maximum temperatures for each calendar day shall be reported, except when temperature exceeds 106ºF, in which case the reason(s), duration, and time of day of the events of elevated temperature shall be reported.

[4] The mass emission (lbs/day) for the discharge shall be calculated and reported using the effluent concentration and the actual flow rate measured at the time of discharge, using the formula:

Mass (lbs/day) = Actual Flow (MGD) x Reported Concentration (mg/L) x 8.34 (conversion factor)

[5] Refer to section V, Whole Effluent Toxicity Testing Requirements.

[6] Monitoring is only applicable during periods of chlorine addition. A statement certifying that chlorination did not occur during the day may be submitted in lieu of an analysis. Multiple grab samples shall be collected at 25, 30, and 35 minutes following the start of chlorination and the highest value of the three measurements shall be reported.

[7] DDT shall mean the sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD and 2,4'-DDD.

[8] PCBs shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260.

[9] Priority pollutants as defined by the CTR defined in Attachment I of this Order.

[10] Analyze these radiochemicals by the following USEPA methods: method 900.0 for gross alpha and gross beta, method 903.0 or 903.1 for radium-226, method 904.0 for radium-228, method 906.0 for tritium, method 905.0 for strontium-90, and method 908.0 for uranium. Analysis for combined radium-226 & 228 shall be conducted only if gross alpha results for the same sample exceed 15 pCi/L or beta greater than 50 pCi/L. If radium-226 & 228 exceeds the stipulated criteria, analyze for tritium, strontium-90 and uranium.

A statement certifying that radioactive pollutants were not added to the discharge may be submitted in lieu of monitoring.

[11] For each annual monitoring event, at least five weekly samplings and analyses shall be conducted until a geometric mean can be obtained for each parameter (using the five most recent sample results).

[12] Monthly monitoring is required from October 2016 through September 2017 (one year period). If the discharge is in compliance with the prescribed effluent limitations during this one year period, after requesting and securing approval by the Executive Officer, the monitoring frequency may be decreased to quarterly.

[13] TCDD equivalents shall be calculated using the following formula, where the ML's and the toxicity equivalency factors (TEFs) are as listed in the Table below. The Discharger shall report all measured values of individual congeners, including data qualifiers. When calculating TCDD equivalents, the Discharger shall set congener concentrations below the ML's to zero. U.S. EPA method 1613 may be used to analyze dioxin and furan congeners.

Dioxin-TEQ (TCDD equivalents) = $\Sigma( C_x \times TEF_x)$

where: $C_x$ = concentration of dioxin or furan congener x

$TEF_x$= TEF for congener x

**Toxicity Equivalency Factors**

| Congeners | Minimum Levels (pg/L) | Toxicity Equivalence Factor (TEF) |
|---|---|---|
| 2,3,7,8 - tetra CDD | 10 | 1.0 |
| 1,2,3,7,8 - penta CDD | 50 | 1.0 |
| 1,2,3,4,7,8 - hexa CDD | 50 | 0.1 |
| 1,2,3,6,7,8 - hexa CDD | 50 | 0.1 |
| 1,2,3,7,8,9 - hexa CDD | 50 | 0.1 |
| 1,2,3,4,6,7,8 - hepta CDD | 50 | 0.01 |
| Octa CDD | 100 | 0.0001 |
| 2,3,7,8 - tetra CDF | 10 | 0.1 |
| 1,2,3,7,8 - penta CDF | 50 | 0.05 |
| 2,3,4,7,8 - penta CDF | 50 | 0.5 |
| 1,2,3,4,7,8 - hexa CDF | 50 | 0.1 |
| 1,2,3,6,7,8 - hexa CDF | 50 | 0.1 |
| 1,2,3,7,8,9 - hexa CDF | 50 | 0.1 |
| 2,3,4,6,7,8 - hexa CDF | 50 | 0.1 |
| 1,2,3,4,6,7,8 - hepta CDFs | 50 | 0.01 |
| 1,2,3,4,7,8,9 - hepta CDFs | 50 | 0.01 |
| Octa CDF | 100 | 0.0001 |

## V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

### A. Definition of Chronic Toxicity

Chronic toxicity measures a sublethal effect (e.g., reduced growth, reproduction) to experimental test organisms exposed to an effluent or ambient waters compared to that of the control organisms. Chronic toxicity test results shall be measured using the two concentration (i.e., discharge in-stream waste concentration and laboratory water control) Test of Significant Toxicity (TST) statistical approach and reported in units of Pass or Fail and % Effect.

### B. Discharge In-stream Waste Concentration (IWC) for Chronic Toxicity

The chronic toxicity IWC is 8 percent [1/(11.5+1)] effluent for discharge at Discharge Point 001 and 100 percent effluent for Discharge Point 002.

### C. Sample Volume and Holding Time

The total sample volume shall be determined by the specific toxicity test method used. Sufficient sample volume shall be collected to perform the required toxicity test including the static renewal test and Toxicity Identification Evaluation (TIE) studies. All toxicity tests shall be conducted as soon as possible following sample collection. No more than 36 hours shall elapse before the conclusion of sample collection and test initiation.

### D. Chronic Marine and Estuarine Species and Test Methods

If effluent samples are collected from outfalls discharging to receiving waters with salinity ≥1 ppt, the Discharger shall conduct the following chronic toxicity tests on effluent samples—at the in-stream waste concentration for the discharge—in accordance with species and test methods in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995). The dilution water used in the toxicity tests may be natural seawater, hypersaline brine (100%) prepared from natural seawater, or artificial seawater prepared from commercial sea salts.In no case shall these species be substituted with another test species unless written authorization from the Executive Officer is received.

**1.** A static renewal toxicity test with the topsmelt, *Atherinops affinis* (Larval Survival and Growth Test Method 1006.01).

**2.** A static non-renewal toxicity test with the purple sea urchin, *Strongylocentrotus purpuratus*, or the sand dollar, *Dendraster excentricus* (Fertilization Test Method 1008.0); or a static non-renewal toxicity test with the red abalone, *Haliotis rufescens* (Larval Shell Development Test Method) or a static non-renewal test with the pacific oyster, *Crassostrea gigas*, and a mussel species, *Mytilus edulis, M. californianus, M. galloprovincialis, or M. trossulus* (Embryo-Larval Development Test Method).

**3.** A static non-renewal toxicity test with the giant kelp, *Macrocystis pyrifera* (Germination and Growth Test Method 1009.0).

### E. Species Sensitivity Screening

Species sensitivity screening shall be conducted monthly for a period of three months. Once each month, the Discharger shall collect a single effluent sample and concurrently conduct three toxicity tests using the fish, an invertebrate, and the alga species previously referenced. The species that exhibits the highest “Percent (%) Effect” at the discharge IWC during species sensitivity screening shall be used for routine quarterly monitoring.

Rescreening is required every 24 months. The Discharger shall rescreen with the three species listed above and continue to monitor with the most sensitive species. If the first suite

of rescreening tests demonstrates that the same species is the most sensitive, then the rescreening does not need to include more than one suite of tests. If a different species is the most sensitive, or if there is ambiguity, then the Discharger shall proceed with suites of screening tests for a minimum of three, but not to exceed five suites.

The most sensitive species determined during recent species sensitivity screening conducted prior to the adoption of this Order may be used for routine quarterly monitoring until 24 months after the date of that screening event, then rescreening is required.

**F. Quality Assurance and Additional Requirements**

Quality assurance measures, instructions, and other recommendations and requirements are found in the test methods manual previously referenced. Additional requirements are specified below.

**1.** The discharge is subject to determination of "Pass" or "Fail" and "Percent Effect" from a single-effluent concentration chronic toxicity test at the discharge IWC using the Test of Significant Toxicity (TST) statistical approach described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010), Appendix A, Figure A-1, and Table A-1. The null hypothesis (Ho) for the TST approach is: Mean discharge IWC response ≤0.75 × Mean control response. A test result that rejects this null hypothesis is reported as "Pass". A test result that does not reject this null hypothesis is reported as "Fail". The relative "Percent (%) Effect" at the discharge IWC is defined and reported as: ((Mean control response - Mean discharge IWC response) ÷ Mean control response)) × 100.

**2.** The Median Monthly Effluent Limit (MMEL) for chronic toxicity only applies when there is a discharge more than one day in a calendar month period. During such calendar months, exactly three independent toxicity tests are required when one toxicity test results in "Fail".

**3.** If the effluent toxicity test does not meet all test acceptability criteria (TAC) specified in the referenced test method, then the Discharger must re-sample and re-test within 14 days.

**4.** The dilution water used in the toxicity tests may be natural seawater, hypersaline brine (100%) prepared from natural seawater, or artificial seawater prepared from commercial sea salts. Reference toxicant tests and effluent toxicity tests shall be conducted using the same test conditions (e.g., same test duration, etc.). Monthly reference toxicant testing is sufficient.

**5.** All reference toxicant test results should be reviewed and reported according to EPA guidance on the evaluation of concentration-response relationships found in *Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing* (40 C.F.R. section 136) (EPA 821-B-00-004, 2000).

**6.** The Discharger shall perform toxicity tests on final effluent samples. Chlorine and ammonia shall not be removed from the effluent sample prior to toxicity testing, unless explicitly authorized under this section of the Monitoring and Reporting Program and the rational is explained in the Fact Sheet (Attachment F).

**G. Preparation of an Initial Investigation TRE Workplan**

The Discharger shall prepare or update and submit a generic Initial Investigation TRE Work Plan within 90 days of the permit effective date, to be ready to respond to toxicity events. The Discharger shall review and update this work plan as necessary so it remains current and applicable to the discharge. At minimum, the work plan shall include:

1. A description of the investigation and evaluation techniques that will be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency.
2. A description of methods for maximizing in-house treatment system efficiency, good housekeeping practices, and a list of all chemicals used in operations at the facility.
3. If a Toxicity Identification Evaluation (TIE) is necessary, an indication of who would conduct the TIEs (i.e., an in-house expert or outside contractor).

**H. Accelerated Monitoring Schedule for Median Monthly Summary Result: "Fail" (or Maximum Daily Single Result: "Fail and % Effect ≥ 50")**

The summary result shall be used when there is discharge more than one day in a calendar month. The single result shall be used when there is discharge of only one day in a calendar month.

Within 24 hours of the time the Discharger becomes aware of this result, the Discharger shall implement an accelerated monitoring schedule consisting of four, five-concentration toxicity tests (including the discharge IWC), conducted at approximately two week intervals, over an eight week period. If each of the accelerated toxicity tests results in "Pass", the Discharger shall return to routine monitoring for the next monitoring period. If one of the accelerated toxicity tests results in "Fail", the Discharger shall immediately implement the Toxicity Reduction Evaluation (TRE) Process conditions set forth below.

The Facility is a peak demand generating station that does not run continuously. Per the OTC Policy implementation plan circulating pumps are not permitted to operate solely for sampling purposes. Therefore accelerated monitoring should end after three months if discharges have not occurred such that five consecutive toxicity tests have been completed at approximately two week periods.

**I. Toxicity Reduction Evaluation (TRE) Process**

1. **Preparation and Implementation of Detailed TRE Work Plan.** The Discharger shall immediately initiate a TRE using—according to the type of treatment facility—EPA manual *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants* (EPA/833/B-99/002, 1999) or EPA manual *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations* (EPA/600/2-88/070, 1989). Within 30 days, the Discharger shall submit to the Regional Water Board Executive Officer a Detailed TRE Work Plan, which shall follow the generic Initial Investigation TRE Work Plan revised as appropriate for this toxicity event. It shall include the following information, and comply with additional conditions set by the Executive Officer:
   a. Further actions by the Discharger to investigate, identify, and correct the causes of toxicity.
   b. Actions the Discharger will take to mitigate the effects of the discharge and prevent the recurrence of toxicity.
   c. A schedule for these actions, progress reports, and the final report.
2. **TIE Implementation.** The Discharger may initiate a TIE as part of a TRE to identify the causes of toxicity using the same species and test method and, as guidance, USEPA manuals: *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures* (EPA/600/6-91/003, 1991); *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/080, 1993); *Methods for Aquatic*

*Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/081, 1993); and *Marine Toxicity Identification Evaluation (TIE): Phase I Guidance Document* (EPA/600/R-96-054, 1996). The TIE should be conducted on the species demonstrating the most sensitive toxicity response.

**3.** Many recommended TRE elements parallel required or recommended efforts for source control, pollution prevention, and storm water control programs. TRE efforts should be coordinated with such efforts. As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the sources and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with toxicity evaluation parameters.

**4.** The Discharger shall conduct routine effluent monitoring for the duration of the TRE process. Additional accelerated monitoring and TRE work plans are not required once a TRE is begun.

**5.** The Regional Water Board recognizes that toxicity may be episodic and identification of causes and reduction of sources of toxicity may not be successful in all cases. The TRE may be ended at any stage if monitoring finds there is no longer toxicity.

### J. Reporting

The Self-Monitoring Report (SMR) shall include a full laboratory report for each toxicity test. This report shall be prepared using the format and content of the test methods manual chapter called Report Preparation, including:

**1.** The toxicity test results for the TST approach, reported as “Pass” or “Fail” and “Percent (%) Effect” at the chronic toxicity IWC for the discharge.

**2.** Water quality measurements for each toxicity test (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, chlorine, ammonia).

**3.** TRE/TIE results. The Regional Water Board Executive Officer shall be notified no later than 30 days from completion of each aspect of TRE/TIE analyses.

**4.** Statistical program (e.g., TST calculator, CETIS, etc.) output results for each toxicity test.

## VI. LAND DISCHARGE MONITORING REQUIREMENTS—NOT APPLICABLE

## VII. RECYCLING MONITORING REQUIREMENTS—NOT APPLICABLE

## VIII. RECEIVING WATER MONITORING REQUIREMENTS

### A. Surface Water Monitoring at Monitoring Locations RSW-001 through RSW-016

The Discharger shall monitor the receiving waters at Monitoring Locations RSW-001 through RSW-003 and RSW-005 through RSW-016 as follows:

**Table E-7. Receiving Water Monitoring Requirements for RSW-001 through RSW-016**

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Required Analytical Test Method |
|---|---|---|---|---|
| pH | Standard units | Profile | 2/year[1,2] | [3] |
| Temperature | °F | Profile | 2/year[1,4] | [3] |
| Salinity | ppt | Profile | 2/year[1] | [3] |
| Dissolved Oxygen | mg/L | Profile | 2/year[1] | [3] |
| Ammonia Nitrogen, Total (as N)[5] | mg/L | Grab | 1/year[1,6] | [3] |
| Chronic Toxicity[5] | Pass or Fail and % effect for TST approach | 24-hour composite or grab | 1/year | [7] |
| Priority pollutants[5,8] | µg/L | Grab | 1/year[1] | [3] |

[1] Dissolved oxygen levels, temperature, salinity, and pH shall be measured semi-annually at the surface, mid-depth and bottom at each monitoring location, at a minimum.
[2] Semi-annual monitoring shall be conducted in summer and in winter. All monitoring locations shall be sampled on both the flood and ebb tides during each semi-annual survey, as near to the start of the flood and ebb tides as is practicable.
[3] Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136; for priority pollutants, the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding MLs.
[4] Temperature profiles shall be measured semi-annually (summer and winter) each year at each monitoring location from surface to bottom at a minimum of one-meter intervals.
[5] Monitoring is required solely at Monitoring Location RSW-004 (King Harbor).
[6] pH, temperature and salinity must be collected at the same time as ammonia samples.
[7] Refer to section V, Whole Effluent Toxicity Testing Requirements.
[8] Priority pollutants as defined by the CTR defined in Attachment I of this Order.

**B. Benthic Monitoring (Monitoring Locations BEN-001 through BEN-007)**

**1. Sediment Samples for Assessment of Benthic Infauna**

**a.** The Discharger shall collect and analyze samples for benthic fauna once per year at Monitoring Locations BEN-001 through BEN-007.

**b.** One liter sediment core samples shall be collected by divers at each of the benthic stations for biological examination and determination of biomass and diversity. Four replicates shall be obtained at each station for benthic analyses, and each shall be analyzed separately. A fifth sample shall be taken at each station for sediment analyses and general description.

**c.** Each benthic replicate sample shall be sieved through a 1.0 mm standard mesh screen. All organisms recovered shall be enumerated and identified to the lowest taxon possible. Infaunal organisms shall be reported as concentrations per liter for each replicate and each station. Total abundance, number of species and Shannon-Weiner diversity indices shall be calculated (using natural logs) for each replicate and each station. Biomass shall be determined as the wet weight in grams or milligrams retained on a 0.5 millimeter screen per unit volume (e.g., 1 liter) of sediment. Biomass shall be reported for each major taxonomic group (e.g., polychaetes, crustaceans, mollusks) for each replicate and each station.

**d.** Procedures and test methods shall adhere to the following federal guidelines when applicable: Macroinvertebrate Field and Laboratory Methods for Evaluation the Biological Integrity of Surface Waters (1990) –EPA/600/4-90/030 (PB91-171363). This manual describes guidelines and standardized procedures for the use of macroinvertebrates in evaluating the biological integrity of surface waters.

**6. Sediments Samples for Grain Size and Chemical Analyses**

The Discharger shall collect and analyze sediment samples for parameters in the following table:

**Table E-8. Receiving Water Monitoring for BEN-001 through BEN-007**

| Parameter | Units | Sample Type | Minimum Sampling Frequency |
|---|---|---|---|
| Sediment Grain Size[2] | -- | Core | 1/year |
| Arsenic | mg/kg | Core[3] | 1/year |
| Beryllium | mg/kg | Core[3] | 1/year |
| Cadmium | mg/kg | Core[3] | 1/year |
| Copper | mg/kg | Core[3] | 1/year |
| Chromium, Total | mg/kg | Core[3] | 1/year |
| Chromium (III) | mg/kg | Core[3] | 1/year |
| Lead | mg/kg | Core[3] | 1/year |
| Mercury | mg/kg | Core[3] | 1/year |
| Nickel | mg/kg | Core[3] | 1/year |
| Selenium | mg/kg | Core[3] | 1/year |
| Silver | mg/kg | Core[3] | 1/year |
| Thallium | mg/kg | Core[3] | 1/year |
| Zinc | mg/kg | Core[3] | 1/year |
| Acid Soluble Sulfides | mg/kg | Core[3] | 1/year |
| Pesticides[4] | mg/kg | Core[3] | 1/year |
| PAHs[5] | mg/kg | Core[3] | 1/year |

[1] Dry weight basis.
[2] Sediment grain size analyses shall be performed on each sediment sample (sufficiently detailed to calculate weight in relation to phi size).
[3] A separate grab sample shall be collected at each station whenever a biological sample is collected. Sub-samples (upper two centimenters) shall be taken from the grab for sediment chemistry analyses.
[4] Pesticides shall mean aldrin, chlordane, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, dieldrin, alpha-endosulfan, beta-endosulfan, endosulfan sulfate, endrin, heptachlor, heptachlor epoxide, and toxaphene.
[5] PAHs shall mean acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene and pyrene.

### C. Bioaccumulation Monitoring (Monitoring Location MUS-001, MUS-002 and MUS-003)

Naturally occurring mussels (*Mytilus* spp.) shall be collected during the summer from the discharge conduit, as close to the point of discharge as possible, for bioaccumulation monitoring. If mussels are unavailable near the discharge site, source mussels may be transplanted from clean locations and left in place for 30-60 days. Mussel tissue shall be analyzed for the parameters listed in the Table below.

**Table E-9. Mussels Bioaccumulation (Monitoring Locations MUS-001, MUS-002 and MUS-003)**

| Parameter | Sample Type | Minimum Sampling Frequency | Required Analytical Test Method |
|---|---|---|---|
| Arsenic | Tissue | 1/(2 years) | [1] |
| Berylium | Tissue | 1/(2 years) | [1] |
| Cadmium | Tissue | 1/(2 years) | [1] |
| Chromium (III) | Tissue | 1/(2 years) | [1] |
| Lead | Tissue | 1/(2 years) | [1] |
| Mercury | Tissue | 1/(2 years) | [1] |
| Nickel | Tissue | 1/(2 years) | [1] |
| Selenium | Tissue | 1/(2 years) | [1] |
| Silver | Tissue | 1/(2 years) | [1] |
| Thallium | Tissue | 1/(2 years) | [1] |
| Zinc | Tissue | 1/(2 years) | [1] |
| Pesticides[2] | Tissue | 1/(2 years) | [1] |
| PAHs[3] | Tissue | 1/(2 years) | [1] |

[1] Procedures used to determine compliance with bioaccumulation monitoring should use the *USEPA. Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories* (November 2000, EPA 823-B-00-007), NOAA Technical Memorandum NOS ORCA 130, *Sampling and Analytical Methods of the National Status and Trends Program Mussel Watch Project* (1998 update), and/or State Mussel Watch Program, 1987-1993 Data Report, State Water Resources Control Board 94-1WQ.

[2] Pesticides shall mean aldrin, chlordane, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, dieldrin, alpha-endosulfan, beta-endosulfan, endosulfan sulfate, endrin, heptachlor, heptachlor epoxide, and toxaphene.

[3] PAHs shall mean acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene and pyrene.

### D. Video/Cine Transects (Monitoring Locations TRN-001, TRN-002 and TRN-003)

Video or cine transect stations shall be occupied and sampled semi-annually during the summer and winter as follows:

1. Cine transects shall be filmed (or videotaped) by diver operated camera during a swim along the bottom following a 50 meter transect line marked at 1-meter intervals.
2. Fishes and macroinvertebrates shall be reported as counts per transect, by species. This number shall be standardized by dividing it by underwater visibility in meters.
3. Cine transects shall be conducted only when underwater visibility exceeds 3 meters.

### E. Receiving Water Monitoring at the Zone of Initial Dilution (Monitoring Location ZID-001)

The Discharger shall monitor the receiving water outside the zone of initial dilution (ZID) within the waste field at Monitoring Location ZID-001 as shown in the table below. Alternatively, this requirement may be met by the annual receiving water monitoring at stations RSW-10 through RSW-16 if the Discharger is able to demonstrate that one of these stations is located outside of ZID where initial dilution is complete.

**Table E-10. Compliance Monitoring at the Zone of Initial Dilution at Monitoring Location ZID-001**

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Required Analytical Test Method |
|---|---|---|---|---|
| All Table 1 Parameters in the Ocean Plan (Including toxicity) | -- | Grab | 1/Permit Term[1] | [2] |

1. The Discharger shall conduct compliance monitoring at Monitoring Location ZID-001 at least once during the term of this Order at a time of discharge from Discharge Point 001
2. Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136. For priority pollutants, the methods must meet the lowest minimum levels (MLs) specified in Appendix II of the Ocean Plan (2012) that is required to demonstrate compliance. Where no methods are specified for a given pollutant, the methods must be approved by this Regional Water Board or the State Water Board.

### F. Regional Monitoring Program

**1.** Discharger participation in regional monitoring programs is required as a condition of this permit. While participation in regional programs is required under this permit, revisions to the Discharger's monitoring program at the direction of the Regional Water Board may be necessary to accomplish the goals of regional monitoring or to allow the performance of special studies to investigate regional or site-specific water issues of concern. These revisions may include a reduction or increase in the number of parameters to be monitored, the frequency of monitoring, or the number and size of samples to be collected. Such changes may be authorized by the Executive Officer upon written notification to the Discharger.

The regional programs which must be conducted under this permit include:

**a.** Future Southern California Bight regional surveys, including benthic infauna, sediment chemistry, fish communities and fish predator risk; and

**b.** Central Region Kelp Monitoring Program – quarterly overflights to assess kelp beds.

**2.** Regular regional monitoring for the Southern California Bight has been established, occurring at four- to five-year intervals, and coordinated by the Southern California Coastal Water Research Project with discharger agencies and numerous other entities. The sixth regional monitoring program is expected to begin during 2018. The Discharger shall complete collection and analysis of samples in accordance with the schedule established by the Steering Committee directing the Bight-wide regional monitoring surveys. The level of participation shall be similar to that provided by the Discharger in previous regional surveys conducted in 1994, 1998, 2003, 2008 and 2013.

**3.** The Regional Water Board has helped to establish the Central Region Kelp Survey Consortium to conduct regional kelp bed monitoring. This program is designed to require ocean dischargers in the Los Angeles Water Board's jurisdiction to undertake a collaborative program (which may include participation by Orange County ocean dischargers) to monitor kelp beds in the Southern California Bight, patterned after the successful program implemented by the San Diego Regional Water Board since 1985.

Data collected in this regional survey will be used to assess status and trends in kelp bed health and spatial extent. The regional nature of the survey will allow the status of beds local to specific dischargers to be compared to regional trends. The regional kelp monitoring survey was initiated during 2003.

The regional survey will consist primarily of quarterly aerial overflights to assess the size and health of existing kelp beds. The Discharger shall participate in the management and technical committees responsible for development of the final survey design. The Discharger also shall provide appropriate financial support to help fund the survey; the shared funding costs will be based on the number of participants in the study, but shall not exceed a maximum of $10,000 per year per share.

## IX. OTHER MONITORING REQUIREMENTS

### A. Visual Monitoring of Receiving Water Sampling Point

**1.** A visual observation station shall be established in the vicinity of the discharge point to the receiving water.

**2.** General observations of the receiving water shall occur semiannually when receiving water monitoring occurs, and this shall occur at a time when the Facility is discharging. All receiving water observations shall be reported in the quarterly monitoring report. If no discharge occurred during the observation period, this shall be reported. Observations shall be descriptive where applicable, such that colors, approximate amounts, or types of materials are noted. The following observations shall be made:

**a.** Tidal stage, time and date of monitoring.

**b.** General water and weather conditions.

**c.** Color of water.

**d.** Appearance of oil films or grease, or floatable materials.

**e.** Extent of visible turbidity or color patches.

**f.** Description of odor, if any, of the receiving water.

**g.** Depth at each station for each sample point.

**h.** Presence or absence of red tide.

**i.** Presence of marine life.

**j.** Presence and activity of the California least term and the California brown pelican.

**k.** Presence or absence of trash.

### B. Outfall and Diffuser Inspection

The ocean outfall shall be externally inspected a minimum of once per permit term. Inspections shall include observations and photographic/videographic records of the outfall pipes and adjacent ocean bottom. The pipes shall be visually inspected by a diver, manned submarine, or remotely operated vehicle. A summary report of the inspection findings of the previous year shall be included in the annual monitoring report (due by February 1 of each year). This written report, augmented with videographic and/or photographic images, will provide a description of the observed condition of the discharge pipe from shallow water to the terminus.

## X. REPORTING REQUIREMENTS

### A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. If there is no discharge during any reporting period, the report shall so state.
3. Each monitoring report shall contain a separate section titled "Summary of Non-Compliance" which discusses the compliance record and corrective actions taken or planned that may be needed to bring the discharge into full compliance with waste discharge requirements. This section shall clearly list all non-compliance with waste discharge requirements, as well as all excursions of effluent limitations.
4. The Discharger shall inform the Regional Water Board well in advance of any proposed construction activity that could potentially affect compliance with applicable requirements.
5. The Discharger shall report the results of chronic toxicity testing, TRE and TIE as required in the Attachment E, Monitoring and Reporting, Section V.I.

### B. Self-Monitoring Reports (SMRs)

1. The Discharger shall electronically submit SMRs using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html). The CIWQS Web site will provide additional information for SMR submittal in the event there will be a planned service interruption for electronic submittal.

2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through X. The Discharger shall submit quarterly and annual SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the schedule in the table below. The schedule will commence on the closest monitoring period start date following or on the permit effective date.

**Table E-11. Monitoring Periods and Reporting Schedule**

| Sampling Frequency | Monitoring Period | Start Date | Duration | SMR Due Date |
|---|---|---|---|---|
| Continuous | All | Permit effective date | Ongoing | Submit with quarterly SMR |
| 1/month | Monthly | First day of each calendar month | First day of calendar month through last day of calendar month | Submit with quarterly SMR |
| 1/quarter | 1st Quarter | January 1, 2017 | January 1 through March 31 | May 1 |
| | 2nd Quarter | April 1, 2017 | April 1 through June 30 | August 1 |
| | 3rd Quarter | July 1, 2017 | July 1 through September 30 | November 1 |
| | 4th Quarter | October 1, 2017 | October 1 through December 31 | February 1 |
| 2/year | 1st Semiannual | January 1, 2017 | January 1 through June 30 | August 1 |
| | 2nd Semiannual | July 1, 2017 | July 1 through December 31 | February 1 |
| 1/year | Annual | January 1, 2017 | January 1 through December 31 | February 1 |

4. **Reporting Protocols.** The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in 40 C.F.R. part 136.

   The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

   **a.** Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

   **b.** Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

   For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (± a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

   **c.** Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

   **d.** Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

5. **Compliance Determination.** Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined above and Attachment A of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

6. **Multiple Sample Data.** When determining compliance with an AMEL or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

   a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

   b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

7. The Discharger shall submit SMRs in accordance with the following requirements:

   a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.

   b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

**C. Discharge Monitoring Reports (DMRs)**

1. On August 1, 2014, notification was given specifically for the electronic submittal of DMRs. Therefore, the Discharger shall submit DMRs electronically via CIWQS.

**D. Other Reports**

1. The Discharger shall report the results of the TRE/TIE, SWPP, BMP Plan, and SCP required by Special Provisions – IX.C of this Order. The Discharger shall submit reports with the first quarterly SMR scheduled to be submitted on or immediately following the report due date.

**2.** Within 90 days of the effective date of this permit, the Discharger is required to submit the following to the Regional Water Board:

**a.** Initial Investigation TRE Workplan

**b.** Updated SWPPP

**c.** Updated BMPP

**d.** Updated SCP

**3.** The receiving water monitoring report containing the results of bimonthly, semiannual and annual monitoring shall be received at the Regional Water Board by **March 1** of each year following the calendar year of data collection.

**4.** The initial dilution ratio of 11.5:1 (receiving water to effluent) established in Order No. 00-085 is retained in this Order contingent on the Facility ceasing discharges from Discharge Point 001 by December 31, 2020. If discharges will continue past that date, the Discharger must provide advanced notification to the Regional Water Board, as well as a work plan to timely complete a mixing zone study. The study shall identify the boundary of the zone of initial dilution (ZID) based on modeling results, and include monitoring upstream of the discharge point, directly above the discharge location, at the boundary of the ZID and outside the ZID for the list of constituents included in Table 1 of the Ocean Plan, to confirm the assumptions made by the model.

# ATTACHMENT F – FACT SHEET

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# ATTACHMENT F – FACT SHEET

As described in section II.B of this Order, the California Regional Water Quality Control Board, Los Angeles Region (Regional Water Board) incorporates this Fact Sheet as findings of the Regional Water Board supporting the issuance of this Order. This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Only those sections or subsections of this Order that are specifically identified as "not applicable" have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as "not applicable" are fully applicable to this Discharger.

## I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

**Table F-1. Facility Information**

| | |
|---|---|
| **WDID** | 4B192111003 |
| **Discharger** | AES Redondo Beach LLC |
| **Name of Facility** | Redondo Beach Generating Station |
| **Facility Address** | 1100 North Harbor Drive |
| | Redondo Beach, CA 90277 |
| | Los Angeles County |
| **Facility Contact, Title and Phone** | Jose Perez, Site Leader, (310) 318-7575 |
| **Authorized Person to Sign and Submit Reports** | Jose Perez, Site Leader, (310) 318-7575 |
| **Mailing Address** | 1100 North Harbor Drive, Redondo Beach, CA 90277 |
| **Billing Address** | SAME |
| **Type of Facility** | Industrial (Electric Services Steam Generation; SIC 4911) |
| **Major or Minor Facility** | Major |
| **Threat to Water Quality** | 1 |
| **Complexity** | A |
| **Pretreatment Program** | N/A |
| **Recycling Requirements** | N/A |
| **Facility Permitted Flow** | Discharge Point 001 - 215 MGD<br>Discharge Point 002 - 674 MGD |
| **Facility Design Flow** | Discharge Point 001 - 215 MGD<br>Discharge Point 002 - 674 MGD |
| **Watershed** | Santa Monica Bay Watershed Management Area |
| **Receiving Water** | Pacific Ocean (Discharge Point 001), King Harbor (Discharge Point 002) |
| **Receiving Water Type** | Ocean waters (Discharge Point 001), enclosed bay (Discharge Point 002) |

**A.** AES Redondo Beach, LLC is the owner and operator of the Redondo Beach Generating Station, a steam-electric generating facility located at 1100 North Harbor Drive in Redondo Beach, California. AES Redondo Beach LLC is hereinafter referred to as Discharger. Redondo Beach Generating Station is hereinafter referred to as Facility. Attachment B of this Order includes a map of the Facility location.

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

**B.** The Facility discharges wastewater to the Pacific Ocean, a water of the United States. The Facility also discharges wastewater to King Harbor, a water of the United States within the Santa Monica Bay Watershed Management Area. The Discharger was previously regulated by Order No. 00-085 which was adopted on May 9, 2000, modified on June 29, 2000, and expired on May 10, 2005.

**C.** The Discharger filed a Report of Waste Discharge (ROWD) and submitted an application for reissuance of its WDRs and NPDES Permit on November 12, 2004.The renewal of the permits for coastal power plants was delayed as a result of efforts to develop and implement the Statewide Water Quality Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (OTC Policy). The OTC Policy was adopted on October 1, 2010, and amended on June 18, 2013. The amendment specified that the Regional Water Board would review, update and renew these permits. On August 7, 2014, the Regional Water Board requested an updated ROWD to reflect the current conditions/operations at the Facility. The Discharger filed an updated ROWD on September 29, 2014. Supplemental information was requested on October 15, 2014 and received on November 7, 2014. The application was deemed complete on November 12, 2014.

**D.** Pursuant to the provisions of the Code of Federal Regulations (C.F.R.) [40 C.F.R. section 122.6] and the California Code of Regulations [Title 23, Section 2235.4], Order No. 00-085 was administratively extended until the adoption of a new order.

**E.** A site visit was conducted on June 23, 2014, to observe operations and collect additional data to develop permit limitations and requirements for waste discharge.

## II. FACILITY DESCRIPTION

The Facility is a generating station with a capacity of 1,356 megawatts that operates during peak demand. There are four active fossil-fueled, steam-powered electric generating units on site (Units 5-8). Units 1-4 are no longer in service. The generating units operate using once-through-cooling (OTC) water drawn from two submerged intakes in King Harbor and one submerged intake in Santa Monica Bay using circulation pumps.

The Facility discharges OTC water, low volume wastewater, and storm water to the Pacific Ocean through Discharge Point 001, located off the northwest corner of the King Harbor breakwater. The Facility also discharges OTC water and storm water to King Harbor through Discharge Point 002, located in the southeast corner of the harbor. OTC water accounts for greater than 99 percent of the total discharge from the Facility. Process wastewaters are combined with OTC water prior to discharge. The ROWD submitted by the Discharger indicated a maximum discharge of 215 million gallons per day (MGD) from Discharge Point 001 and 674 MGD from Discharge Point 002. The flows represent the maximum capacities of the cooling water systems combined with the maximum flows of all contributing in-plant waste streams.

### A. Description of Wastewater and Biosolids Treatment and Controls

Wastewater treatment units at the plant consist of several oil/water separators and three retention basins (the North, Acid, and South Basins). The North and Acid Basins have been out of service since 2011. In-plant waste streams generated at Units 5-8 are treated in the South Basin prior to discharge through Discharge Point 001.

**1. Once-Through Cooling Water**

Cooling water for the Facility is withdrawn from three submerged offshore intakes—two located in King Harbor and one located just outside the King Harbor breakwater. Units 5 and 6 withdraw cooling water from the two 10-foot diameter intakes in King Harbor and Units 7 and 8 withdraw cooling water from a 14-foot diameter intake located just outside the breakwater.

The intakes for Units 5 and 6 terminate in a shared 50-foot-wide forebay which splits into four 10.2 foot-wide bays each equipped with trash racks and traveling water screens which prevent debris from entering the cooling water system. Downstream of the four traveling screens are four circulating water pumps, each with a design pumping capacity of 37,000 gallons per minute (gpm).

The intake for Units 7 and 8 terminates in a single 55-foot-wide forebay which splits into four 11.2-foot-wide bays each equipped with trash racks and traveling water screens. Downstream of the four traveling screens are four circulating water pumps, each with a design pumping capacity of 117,000 gpm.

Marine biofouling—the formation of an insulating layer of slime-producing organisms on the cooling water conduits and forebays—is controlled by heat treatments and chlorine injection. During heat treatments, a portion of the heated discharge water is diverted into the respective forebays and intake conduits to raise water temperature. The water is raised to a temperature of 115ºF for a duration of 1 hour and 40 minutes. This effectively increases the temperature of the circulating water and extirpates many encrusting organisms that adhere to cooling structures. As a result of the heat treatments, calcareous shell debris accumulates in the intake structure and may appear in the discharge.

In addition to bio-fouling of the intake structure, the use of ocean water as a matrix for heat removal can result in bio-fouling of conduits and heat-transfer structures within the Facility. Biological growths which accumulate within the structures of the once-through cooling water system reduce the heat transfer efficiency of the condensers. Periodic chlorination of intake water is performed to control biological growths.

**7. Internal Process Wastewater**

The Facility is permitted to discharge a number of process wastewaters which are commingled with once-through cooling water prior to discharge. These permitted waste streams include: low volume wastes, storm water runoff and groundwater dewatering.

**a. Low Volume Wastes.** Low-volume wastes include wastes from boiler blowdown, boiler condensate overboard, reverse osmosis reject water and in-plant drains. Low volume wastes are collected in the South Basin which has a capacity of 1,000,000 gallons. The maximum discharge of low volume wastes from the retention basin is 864,000 gpd which includes various combinations of the following:

**i. Boiler Blowdown.** Water is occasionally removed from the boilers using steam pressure. This process is known as boiler blowdown and is used to control the buildup of total dissolved solids in the boiler. The sources of impurities in the boiler are the intake water; internal corrosion of the boiler; and chemicals added to the boiler system to control scale formation, corrosion, pH and solids deposition. Blowdown is necessary during startup, shutdown, and occasionally necessary during normal operation. The flow rate from the blowdown process is up to 10,000 gallons per event. There is the potential for several blowdown events per day so the maximum volume can be up to 60,000 gpd. Boiler

blowdown water from Units 5 and 6 is discharged to the South Basin (Units 7 and 8 do not generate boiler blowdown waste).

ii. **Boiler Drains.** Water is drained from the boilers at each shut-down. During Units 5 and 6 shut-downs, approximately 50,000 gallons of water is drained and directed to the South Basin. During Units 7 and 8 shut-downs, approximately 30,000 gallons of water is drained and directed to the South Basin.

iii. **Boiler Condensate Overboard.** Under normal operating conditions there is no condensate overboard discharge. Condensate overboard discharges, which generally occur only during unit start-up, are primarily composed of condensed steam. Condensate overboard is directly discharged to the receiving water and does not undergo treatment. Boiler condensate overboard produced in Units 5 and 6 (approximately 25,000 gallons per start-up) and in Units 7 and 8 (approximately 25,000 gallons per start-up) are directed to Discharge Point 001.

iv. **Polisher Regeneration.** Units 7 and 8 have in-line polishers that use ion exchange resin to remove ionized contaminants and filter corrosion products (crud) from the boiler feed water condensate so that it can be recycled to the boiler. When the resin's ion removal capacity has been exhausted, the resin must be regenerated with acid and caustic to regain its ability to remove contaminants. Units 7 and 8 polishers are regenerated approximately 1.5 times per start-up. The volume of waste water produced in the polisher regeneration process is approximately 90,000 gallons and is directed to the South Basin.

v. **Reverse Osmosis Reject Water.** This discharge consists of reverse osmosis reject water. Reverse osmosis is used to purify water used in the Facility processes. The maximum volume of reverse osmosis reject water is 40,000 gpd, which is directed to the South Basin.

vi. **Power Block Floor Drains.** Power block floor drains collect equipment wash water, residual oil, detergent, power block area storm water runoff and OTC saltwater leaks. Wastes collected in floor drains within each power block (up to 864,000 gpd) are treated in the South Basin and discharged at Discharge Point 001.

b. **Metal Cleaning Wastes.** Metal cleaning wastes, both chemical and non-chemical, are periodically generated when the metallic surfaces of Facility systems are cleaned. Air preheater and boiler fireside washes are conducted manually without the use of chemical cleaning agents. Other Facility equipment (i.e. boilers) require chemical-based cleanings to remove scale, rust, and corrosion accumulated during normal operation. The Facility previously retained the capacity to discharge these wastes to the receiving water. The discharge of metal cleaning wastes has ceased and these wastes are currently contained and transported offsite to an authorized waste facility. A review of monitoring data submitted by the Discharger found that no discharge of metal cleaning wastes occurred between November, 2010 and November, 2015. Therefore, effluent limitations and monitoring requirements for metal cleaning wastes from the prior order have not been retained in this Order.

c. **Storm Water Runoff from Yard Drains.** Storm water runoff from the paved exteriors of the Facility and runoff from city streets is collected by yard drains and directed through four drainage systems. One system drains runoff from the southwestern area of the Facility to the South Basin where it is commingled with

other low volume wastes. Another system drains runoff from the central area of the Facility to the intake for Units 5 and 6 where it is commingled with OTC water. Another system drains runoff from the southern area of the Facility to the intake for Units 7 and 8 where it is commingled with OTC water. The final system drains runoff from the northern area of the Facility without further treatment to storm water outfall D1. Discharges from the Facility through outfall D1 are covered under the statewide General Industrial Storm Water permit (NPDES No. CAS000001).

**d. Groundwater Dewatering.** An accumulation of groundwater seepage occurs at the Facility. The water is a mixture of seawater, fresh groundwater and barrier injection water from the West Coast Basin Barrier Project—a seawater intrusion barrier system owned and operated by the Los Angeles County Flood Control District. A well point system extracts groundwater at an average rate of 1.5 MGD. The untreated groundwater is conveyed directly to Discharge Point 001 where it is commingled with OTC water and low volume wastes prior to effluent monitoring. This Order does not require monitoring of the dewatered groundwater.

## B. Discharge Points and Receiving Waters

### 1. Discharge Point 001

The Facility discharges once through cooling (OTC) water from Units 5 and 6, and various in-plant wastes through Discharge Point 001. Discharge Point 001 is located at the end of an outfall structure that extends 1,600 feet offshore to the Santa Monica Bay (latitude 33.8494444°, longitude -118.4022222°, terminus depth 25 feet below Mean Lower Low Water (MLLW)). The discharge through Discharge Point 001 is an ocean discharge.

Order No. 00-085 established an initial dilution ratio for discharges from Discharge Point 001 of 11.5:1 (receiving water to effluent). Dilution for the discharge was established on the basis of technical memorandums submitted by Southern California Edison (SCE), the previous owner of the Facility, and the State Water Board.

Memorandums from SCE dated January, 1979, and April 13, 1979, developed the technical basis for the dilution ratio estimate. The estimate was developed on the basis of field estimates using eight sets of effluent and ambient temperature data in the immediate vicinity of the outfall. The estimate was further extrapolated on the basis of typical plume behavior for shallow water discharges of this type. A memorandum from the State Water Board dated May 4, 1984, incorporated the SCE approach with several modifications.

The initial dilution ratio of 11.5:1 (receiving water to effluent) established in Order No. 00-085 is retained in this Order for Discharge Point 001 which discharges to the ocean. As per the OTC Policy the Facility will cease discharges from Discharge Point 001 by December 31, 2020. If discharges will continue past that date, the Discharger must provide advanced notification to the Regional Water Board, as well as a work plan to timely complete a mixing zone study. The study shall identify the boundary of the zone of initial dilution (ZID) based on modeling results, and include monitoring upstream of the discharge point, directly above the discharge location, at the boundary of the ZID and outside the ZID for the list of constituents included in Table 1 of the Ocean Plan, to confirm the assumptions made by the model.

### 2. Discharge Point 002

The Facility discharges OTC water from Units 7 and 8 through Discharge Point 002. Discharge Point 002 is located at the end of an outfall structure that extends 300 feet

offshore to King Harbor (latitude 33.843º, longitude -118.394º, terminus depth 20 feet below MLLW).

Order No. 00-085 considered the receiving waters (King Harbor) as ocean waters and therefore established permit limitations and conditions to protect beneficial uses and water quality objectives for ocean waters as described by the California Ocean Plan (1997). The Basin Plan (Figure 2-10 and Table 2-3), however, classifies King Harbor as an enclosed bay. The State Water Board, in a memo dated July 18, 2001, identifies the receiving waters for the Facility as subject to requirements of the State Implementation Policy (SIP), which is applicable to the inland surface waters, enclosed bays, and estuaries of the State. In a letter dated January 21, 2003, the Regional Water Board notified the Discharger of the reclassification of the outfall from an ocean discharge to an enclosed bay discharge. This Order reflects the reclassification of the discharge location and therefore implements the SIP.

### C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

Order No. 00-085 included effluent limitations for all discharges from Discharge Points 001 and 002 as well as specific effluent limitations for discharges of metal cleaning wastes and low volume wastes. For the purpose of the renewal of an existing permit, Regional Water Board staff considers SMR data submitted during the term of the prior permit, typically a five-year period. Due to the delay in the renewal of the permits for coastal power plants discussed in Section I.C above Order No. 00-085 has been in effect for a period of more than fourteen years. For the purpose of development of this Order, SMR data from only the last five years was analyzed as would typically be the case for permit renewal. SMR data collected between November, 2009 and September, 2015 were analyzed. As explained in section II.B above, the effluent limitations from the prior order were based on the California Ocean Plan (1997). The effluent limitations from the prior order for discharges from Discharge Points 001 and 002 and representative monitoring data are as follows:

**Table F-2. Historic Effluent Limitations and Monitoring Data**

| Parameter | Units | Effluent Limitations | | | Monitoring Data | |
|---|---|---|---|---|---|---|
| | | Average Monthly | Maximum Daily | Instantaneous Minimum/ Maximum | Average Monthly | Maximum Daily |
| ***Effluent Limitations and Monitoring Data for Discharge Point 001[1]*** | | | | | | |
| pH | S.U. | -- | -- | 6.0/9.0 | -- | 7.22-8.6 |
| Temperature | °F | -- | -- | [2] | -- | 120 |
| Total Residual Chlorine[3,4] | mg/L | -- | 0.2 | -- | -- | 0.08 |
| Free Available Chlorine | mg/L | -- | 0.2 | -- | -- | 0.05 |
| Arsenic, Total Recoverable | µg/L | 65.5 | 366 | -- | 29.4 | 29.4 |
| Cadmium, Total Recoverable | µg/L | 12.5 | 50 | -- | DNQ, RL = 1 | DNQ, RL = 1 |
| Chromium (VI)[5] | µg/L | 25 | 100 | -- | ND | ND |
| Copper, Total Recoverable | µg/L | 14.5 | 77 | -- | 11.2 | 11.2 |
| Lead, Total Recoverable | µg/L | 25 | 100 | -- | DNQ, RL = 1 | DNQ, RL = 1 |
| Mercury, Total Recoverable | µg/L | 0.494 | 2.0 | -- | DNQ, RL = 0.2 | DNQ, RL = 0.2 |
| Nickel, Total Recoverable | µg/L | 62.5 | 250 | -- | 1.47 | 1.47 |
| Selenium, Total Recoverable | µg/L | 188 | 752 | -- | 0.359 | 0.414 |

| Parameter | Units | Effluent Limitations | | | Monitoring Data | |
|---|---|---|---|---|---|---|
| | | Average Monthly | Maximum Daily | Instantaneous Minimum/ Maximum | Average Monthly | Maximum Daily |
| Silver, Total Recoverable | µg/L | 7.0 | 33 | -- | 4.46 | 4.46 |
| Zinc, Total Recoverable | µg/L | 158 | 908 | -- | 34.8 | 47.7 |
| Chronic Toxicity | $TU_c$ | -- | 12.5 | -- | -- | 2 |
| Radioactivity | pCi/L | [6] | | | -- | NR |
| ***Effluent Limitations and Monitoring Data for Discharge Point 002[1]*** | | | | | | |
| pH | S.U. | -- | -- | 6.0/9.0 | -- | 6.61-8.55 |
| Temperature | °F | -- | -- | [2] | -- | 101.1/ 111.6 |
| Total Residual Chlorine[3,4] | mg/L | -- | 0.2 | -- | -- | ND |
| Free Available Chlorine | mg/L | -- | 0.2 | -- | -- | ND |
| Arsenic, Total Recoverable | µg/L | 43 | 235 | -- | 27.6 | 27.6 |
| Cadmium, Total Recoverable | µg/L | 8 | 32 | -- | DNQ, RL = 1 | DNQ, RL = 1 |
| Chromium (VI)[5] | µg/L | 16 | 64 | -- | ND | DNQ, RL = 0.4 |
| Copper, Total Recoverable | µg/L | 10 | 50 | -- | 18.6 | 42.2 |
| Lead, Total Recoverable | µg/L | 16 | 64 | -- | 0.676 | 1.12 |
| Mercury, Total Recoverable | µg/L | 0.317 | 1.27 | -- | 0.068 | 0.068 |
| Nickel, Total Recoverable | µg/L | 40 | 160 | -- | 26.9 | 27.1 |
| Selenium, Total Recoverable | µg/L | 120 | 480 | -- | ND | ND |
| Silver, Total Recoverable | µg/L | 4.48 | 21 | -- | 3.7 | 3.7 |
| Zinc, Total Recoverable | µg/L | 104 | 548 | -- | 21.7 | 133 |
| Chronic Toxicity | $TU_c$ | -- | 8.0 | -- | -- | 1 |
| Radioactivity | pCi/L | [6] | | | -- | NR |
| ***Effluent Limitations and Monitoring Data for Metal Cleaning Wastes*** | | | | | | |
| Total Suspended Solids | mg/L | 30 | 100 | -- | [7] | |
| Oil and Grease | mg/L | 15 | 20 | -- | | |
| Copper, Total Recoverable | mg/L | 1.0 | 1.0 | -- | | |
| Iron, Total Recoverable | mg/L | 1.0 | 1.0 | -- | | |
| ***Effluent Limitations and Monitoring Data for Low Volume Wastes*** | | | | | | |
| Total Suspended Solids | mg/L | 30 | 100 | -- | 33 | 111 |
| Oil and Grease | mg/L | 15 | 20 | -- | 12 | 22 |
| ***Effluent Limitations and Monitoring Data for Yard Drains*** | | | | | | |
| Total Suspended Solids | mg/L | 30 | 100 | -- | 28 | 28 |
| Oil and Grease | mg/L | 15 | 20 | -- | 2.3 | 2.3 |

ND: Not Detected, DNQ: Detected but Not Quantified, NR: Not Reported, RL: Reporting Limit

[1] Concentration limits are based on Ocean Plan objectives using a dilution ratio of 11.5 parts of seawater to 1 part effluent. Metal limits are for total recoverable form.

[2] The temperature of wastes discharged shall not exceed 106°F during normal operation of the facility. During heat treatment, the temperature of wastes discharged shall not exceed 125°F except during adjustment of the recirculation gate at which time the temperature of wastes discharged shall not exceed: 135°F. Temperature fluctuations during gate adjustment above 125°F shall not 'last for more than thirty (30) minutes.

[3] Chlorine shall not be discharged from any single generating unit for more than two hours per day (i.e., 24-hour period). If other oxidants are used, it shall be total oxidants and reported as residual chlorine.

[4] For chlorine discharge from any single generating unit up to 10 minutes per condenser half per shift, the daily limit of total residual chlorine is 0.2 mg/L. For chlorine discharges exceeding 10 minutes, the applicable total residual chlorine limitations shall be that calculated using procedures outlined in Table 1 of the California Ocean Plan adopted and effective on July 23, 1997.

[5] The discharger has the option to meet the hexavalent chromium limitations with a total chromium analysis. However, if the total chromium level exceeds the hexavalent chromium limitation, it will be considered a violation unless an analysis has been made for hexavalent chromium in a replicate sample and the result is in compliance with the hexavalent chromium limits.

[6] Not to exceed limits specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30269 of the California Code of Regulations or subsequent revisions.

[7] No discharge of metal cleaning wastes occurred between November, 2010 and November, 2015.

## D. Compliance Summary

Data submitted to the Regional Water Board during the last five years of the term of Order 00-085 indicate that the Discharger has experienced violations of numeric permit limits as outlined in the table below:

**Table F-3. Effluent Limitation Violations**

| Date | Type of Limitation | Pollutant | Units | Effluent Limitation | Result |
|---|---|---|---|---|---|
| 10/19/2011 | MDEL[1] | Oil and Grease | mg/L | 20 | 22 |
| 11/30/2011 | AMEL[2] | Copper | µg/L | 10 | 19 |

[1] Effluent limitation for low volume wastes.
[2] Effluent limitation for Discharge Point 002.

The Regional Water Board has also identified multiple instances where the Discharger failed to sample for pH as required. These instances of non-compliance were addressed through oral communication with the Discharger to clarify the requirements.

The 2011 violation for oil and grease was classified as a Class 3 (minor) violation. Sampling for oil and grease in low volume wastes has been conducted monthly since this violation and all results have been within the effluent limitations. Therefore, no enforcement action was necessary.

The 2011 violation for copper was classified as a Class 2 (moderate) violation. Sampling for copper at Discharge Point 002 has been conducted monthly since this violation and all results have been within the effluent limitations. Therefore, no enforcement action was necessary.

## E. Planned Changes

The Discharger indicates that changes are planned to comply with the requirements of Clean Water Act Section 316(b). These changes are discussed in Section III.C.7 below.

## III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the requirements and authorities described in this section.

### A. Legal Authorities

This Order serves as WDRs pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this facility to surface waters

### B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of CEQA, (commencing with section 21100) of Division 13 of the Public Resources Code.

### C. State and Federal Laws, Regulations, Policies, and Plans

1. **Water Quality Control Plan.** The Regional Water Board adopted a *Water Quality Control Plan Los Angeles Region Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (hereinafter Basin Plan) on June 13, 1994, that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan. In addition, the Basin Plan implements State Water Board Resolution 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to the Pacific Ocean and King Harbor are as follows:

**Table F-4. Basin Plan Beneficial Uses**

| Discharge Point | Receiving Water Name | Beneficial Use(s) |
|---|---|---|
| 001 | Pacific Ocean | Nearshore Zone: Industrial service supply (IND); navigation (NAV); water contact recreation (REC-1); non-contact water recreation (REC-2); commercial and sport fishing (COMM); marine habitat (MAR); wildlife habitat (WILD); preservation of biological habitats (BIOL)[1]; rare, threatened, or endangered species (RARE)[2]; migration of aquatic organisms (MIGR)[3]; spawning, reproduction, and/or early development (SPWN)[3]; and shellfish harvesting (SHELL)[4]<br><br>Offshore Zone: Industrial service supply (IND); navigation (NAV); water contact recreation (REC-1); non-contact water recreation (REC-2); commercial and sport fishing (COMM); marine habitat (MAR); wildlife habitat (WILD); rare, threatened, or endangered species (RARE)[2]; migration of aquatic organisms (MIGR)[3]; spawning, reproduction, and/or early development (SPWN)[3]; and shellfish harvesting (SHELL)<br><br>Redondo Beach: Industrial service supply (IND); navigation (NAV); water contact recreation (REC-1); non-contact water recreation (REC-2); commercial and sport fishing (COMM); marine habitat (MAR); wildlife habitat (WILD); rare, threatened, or endangered species (RARE); migration of aquatic organisms (MIGR); spawning, reproduction, and/or early development (SPWN)[3]; and shellfish harvesting (SHELL) |
| 002 | King Harbor | Existing: Industrial service supply (IND); navigation (NAV); water contact recreation (REC-1); non-contact water recreation (REC-2); commercial and sport fishing (COMM); marine habitat (MAR); wildlife habitat (WILD); and rare, threatened, or endangered species (RARE) |

[1] Areas of Special Biological Significance (along coast from Latigo Point to Laguna Point) and Big Sycamore Canyon and Abalone Cove Ecological Reserves and Point Fermin Marine Life Refuge.
[2] One or more rare species utilizes all ocean, bays, estuaries, and coastal wetlands for foraging and/or nesting.
[3] Aquatic organisms utilize all bays, estuaries, lagoons, and coastal wetlands, to a certain extent, for spawning and early development. This may include migration into areas which are heavily influenced by freshwater inputs.
[4] Areas exhibiting large shellfish populations include Malibu, Point Dume, Point Fermin, White Point and Zuma Beach.

2. **Enclosed Bays and Estuaries Policy.** The Water Quality Control Policy for the Enclosed Bays and Estuaries of California (Enclosed Bay and Estuaries Policy), adopted by the State Water Resources Control Board (State Water Board) as Resolution No. 95-84 on November 16, 1995, states that:

> *It is the policy of the State Water Board that the discharge of municipal wastewaters and industrial process waters (exclusive of cooling water discharges) to enclosed bays and estuaries, other than the San Francisco Bay- Delta system, shall be phased out at the earliest practicable date. Exceptions to this provision may be granted by a Regional Water Board only when the Regional Water Board finds that the wastewater in question would consistently be treated and discharged in such a*

*manner that it would enhance the quality of receiving waters above that which would occur in the absence of the discharge.*

While the Facility discharges to King Harbor, the wastewater is comprised primarily of once-through cooling water (approximately 99 percent). The requirements to phase out discharges to enclosed bays and estuaries excludes once-through cooling water. In addition, this Order contains provisions necessary to protect all beneficial uses of the receiving water.

3. **Thermal Plan.** The State Water Board adopted the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan) on January 7, 1971, and amended this plan on September 18, 1975. This plan contains temperature objectives for surface waters. Definition 10 of the Thermal Plan states that any discharge which was taking place prior to the adoption of the plan is considered an existing discharge. The Facility was built and placed into service by Southern California Edison between 1954 and 1967, and is therefore considered an existing discharge. Water Quality Objective 3.A.1 of the Thermal Plan is applicable to existing thermal discharges to the coastal waters of California and therefore applicable to discharges from the Facility through Discharge Point 001:

   *Elevated temperature wastes shall comply with limitations necessary to assure protection of the beneficial uses and areas of special biological significance.*

   Water Quality Objective 4.A.1 of the Thermal Plan is applicable to existing thermal discharges to the enclosed bays of California and therefore applicable to discharges from the Facility through Discharge Point 002:

   *Elevated temperature wastes shall comply with limitations necessary to assure protection of the beneficial uses.*

   Requirements of this Order implement the Thermal Plan.

4. **California Ocean Plan.** The State Water Board adopted the Water Quality Control Plan for Ocean Waters of California, California Ocean Plan (Ocean Plan) in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, 2005, 2009, and 2012. The State Water Board adopted the latest amendment on October 16, 2012, and it became effective on August 19, 2013. The Ocean Plan is applicable, in its entirety, to point source discharges to the ocean. The Ocean Plan identifies beneficial uses of ocean waters of the state to be protected as summarized below:

**Table F-5. Ocean Plan Beneficial Uses**

| Discharge Point | Receiving Water | Beneficial Uses |
|---|---|---|
| Outfall 001 | Pacific Ocean | Industrial water supply; water contact and non-contact recreation, including aesthetic enjoyment; navigation; commercial and sport fishing; mariculture[1]; preservation and enhancement of designated Areas of Special Biological Significance (ASBS)[2]; rare and endangered species; marine habitat; fish migration; fish spawning and shellfish[3] harvesting |

1. MARICULTURE is the culture of plants and animals in marine waters independent of any pollution source.
2. AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE (ASBS) are those areas designated by the State Water Board as requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable.
3. SHELLFISH are organisms identified by the California Department of Health Services as shellfish for public health purposes (i.e., mussels, clams and oysters).

In order to protect the beneficial uses, the Ocean Plan establishes water quality objectives and a program of implementation. Requirements of this Order implement the Ocean Plan.

5. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and amended it on May 4, 1995 and November 9, 1999. About forty criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain federal water quality criteria for priority pollutants. The CTR was used to develop effluent limits included in this Order.

6. **State Implementation Policy.** On March 2, 2000, the State Water Board adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

7. **Clean Water Act Section 316(b) – Impingement and Entrainment.** 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 related to entrainment (drawing organisms into the cooling water system) and impingement (trapping organisms against the intake screens).

   On May 4, 2010 the State Water Board adopted a Statewide Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (OTC Policy). The OTC Policy became effective on October 1, 2010.

   The OTC Policy establishes technology-based standards to implement federal CWA section 316(b) and reduce the harmful effects associated with cooling water intake structures on marine and estuarine life. The OTC Policy applies to existing power plants that currently have the ability to withdraw water from the State's coastal and estuarine

waters using a single-pass system, also known as once-through cooling. Closed-cycle wet cooling has been selected as BTA.

The Policy requires compliance under two alternatives:

**a.** Track 1, where an owner or operator of an existing power plant must reduce intake flow rate at each unit, at a minimum, to a level commensurate with that which can be attained by a closed-cycle wet cooling system. A minimum 93 percent reduction in intake flow rate for each unit is required for Track 1 compliance, compared to the unit's design intake flow rate. The through-screen intake velocity must not exceed 0.5 foot per second. The installation of closed cycle dry cooling systems meets the intent and minimum reduction requirements of this compliance alternative, or

**b.** Track 2, where an owner or operator of an existing power plant demonstrates to the State Water Board's satisfaction that compliance with Track 1 is not feasible, the owner or operator of an existing power plant must reduce impingement mortality and entrainment of marine life for the facility, on a unit-by-unit basis, to a comparable level to that which would be achieved under Track 1, using operational or structural controls, or both.

All owners or operators of existing power plants were required to submit an implementation plan identifying the OTC compliance alternative selected by April 1, 2011. The Discharger submitted an implementation plan on April 1, 2011. A revised implementation plan was later submitted on June 17, 2011. Additional implementation information was submitted on March 31, 2013 and November 8, 2013. Per the submitted information, the Discharger has indicated that the proposed mechanism to bring all of its units (5, 6, 7 and 8) into OTC compliance will be via Track 1.

The Track 1 compliance will be completed in two phases and will consist in the construction of dry-cooled natural gas-fired combined cycle gas turbine (CCGT) power blocks. Phase 1 consists of the conversion of Units 6 and 8 to CCGT power blocks. Phase 2 consists of the conversion of Units 5 and 7 to CCGT power blocks. The OTC Policy includes a final completion date of December 31, 2020 for the completion of both phases.

**OTC Policy Compliance Update**

On February 12, 2016, the Discharger submitted to the State Water Board supplemental information for the OTC compliance implementation plan. This submission indicated that Units 5-8 are fully contracted through May 31, 2018, and will remain in operation at least through that date. The submission also indicated that due to Power Purchase Agreements awarded to the AES Alamitos and AES Huntington Beach generating stations, the shutdown of Units 5-8 will be required prior to the OTC Policy compliance date of December 31, 2020. Therefore, the Discharger is not considering alternatives for continued operation of the Facility (i.e. the conversion of Units 5-7 to CCGT power blocks) beyond that date.

At a meeting with the Regional Water Board on May 3, 2016, the Discharger indicated that the current plan is to permanently retire the Facility between May, 2018 and December, 2020. The Facility is no longer planning to construct new CCGT power blocks and the discharge of OTC water will cease when the Facility is permanently retired.

**8. Antidegradation Policy.** Federal regulation 40 C.F.R. section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16 ("Statement of Policy with Respect to Maintaining

High Quality of Waters in California"). Resolution 68-16 is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of section 131.12 and State Water Board Resolution 68-16.

9. **Anti-Backsliding Requirements.** Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.

10. **Endangered Species Act Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code, §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state, including protecting rare and endangered species. The discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

11. **Trash Provisions Requirements.** The State Water Board adopted a narrative water quality objective and implementation requirements to control trash, through resolution 2015-0019 *"Amendment to the Ocean Plan and Part I Trash Provisions of the Water Quality control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California"* (Trash provisions). The Resolution was approved by OAL on December 2, 2015 and became effective upon USEPA approval on January 12, 2016. The Trash Provisions apply to all surface waters of the State, with the exception of those waters within the jurisdiction of the Regional Water Board where trash or debris Total Maximum Daily Loads (TMDLs) are in effect prior to the effective date of the Trash Amendments. There are currently no Trash TMDLs applicable to the discharge described in this Order; therefore the discharge is subject to Trash Provisions. This Order includes a prohibition of discharges of trash to surface water. In addition, through requirements to implement BMPs, this Order, satisfies conditions of the Trash Provisions.

### D. Impaired Water Bodies on CWA 303(d) List

Section 303(d) of the CWA requires states to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. For CWA section 303(d)-listed water bodies and pollutants, the Regional Water Board develops and adopts TMDLs that specify WLAs for point sources and load allocations (LAs) for non-point sources, as appropriate.

The USEPA approved the State's 2012 CWA section 303(d) list of impaired water bodies on June 26, 2015. Certain receiving waters in the Los Angeles and Ventura County watersheds do not fully support beneficial uses and therefore have been classified as impaired on the 2012 CWA section 303(d) list and have been scheduled for TMDL development.

The Facility discharges once-through cooling water commingled with internal process wastewater into the Santa Monica Bay. The 2012 State Water Board's California CWA section 303(d) List classifies the Santa Monica Bay (Offshore and Nearshore, including Redondo Beach and King Harbor) as impaired. The pollutants of concern include: DDT (tissue & sediment), PCBs (tissue & sediment), sediment toxicity, debris, and fish

consumption advisory (due to DDT and PCBs). The inclusion of the Santa Monica Bay on the 2012 CWA section 303(d) list documents the waterbody's lack of assimilative capacity for the pollutants of concern. The 2012 list also classifies the Santa Monica Bay Beaches as impaired for indicator bacteria.

### E. Santa Monica Bay Debris TMDL

The Regional Water Board adopted Resolution No. R10-101 on November 4, 2010, that amended the Basin Plan to incorporate the *Santa Monica Bay Nearshore and Offshore Debris TMDL* (Santa Monica Bay Debris TMDL). The TMDL was approved by the USEPA on March 20, 2012. Responsible parties identified in the TMDL include agencies and jurisdictions under the Municipal Separate Storm Sewer System (MS4) NPDES Program. The TMDL does not include requirements applicable to the Discharger. Therefore, this Order does not contain requirements based on the Santa Monica Bay Debris TMDL.

### F. Santa Monica Bay DDTs and PCBs TMDL

The USEPA established the *Santa Monica Bay Total Maximum Daily Loads for DDTs and PCBs* (Santa Monica Bay DDTs and PCBs TMDL) on March 26, 2012. The TMDL includes waste load allocations for DDTs and PCBs for point sources, including the Facility. This Order implements the requirements of the Santa Monica Bay DDTs and PCBs TMDL.

### G. Santa Monica Bay Beaches Dry Weather and Wet Weather Bacteria TMDLs

The Regional Water Board adopted Resolution No. 2002-004 on January 24, 2002, that amended the Basin Plan to incorporate the *Santa Monica Bay Beaches Dry Weather Bacteria TMDL*. The TMDL was approved by the USEPA on June 13, 2003. The Regional Water Board adopted Resolution No. 2002-022 on December 12, 2002, that amended the Basin Plan to incorporate the *Santa Monica Bay Beaches Wet Weather Bacteria TMDL*. The TMDL was approved by the USEPA on June 19, 2003. Responsible parties identified in these TMDLs include agencies and jurisdictions under the MS4 NPDES Program. These TMDLs do not include requirements applicable to the Discharger. Therefore, this Order does not contain requirements based on these TMDLs.

### H. Other Plans, Polices and Regulations—Not Applicable

## IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 C.F.R. section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 C.F.R. section 122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water.

Pollutants of concern for the discharges covered under this Order were based on effluent monitoring data, constituents regulated under Order No. 00-085, and the pollutants on the 303(d) list for the Santa Monica Bay. Order No. 00-085 included effluent limitations for pH, temperature, total residual chlorine, free available chlorine, arsenic, cadmium, chromium (VI), copper, lead, mercury, nickel, selenium, silver, zinc, chronic toxicity and radioactivity. The Santa Monica Bay is listed as impaired for DDT (tissue & sediment), PCBs (tissue & sediment), sediment toxicity, debris, and fish consumption advisory (due to DDT and PCBs). Also, the Santa Monica Bay Beaches are listed as impaired for indicator bacteria.

## A. Discharge Prohibitions

Discharge prohibitions in this Order are based on the Federal Clean Water Act, Basin Plan, Water Code, State Water Resources Control Board's plans and policies, California Ocean Plan, USEPA guidance and regulations, and previous permit provisions. As discussed in Sections IV.B.2 and IV.B.3 of this Fact Sheet, the discharge of polychlorinated biphenyl compounds (PCBs) is prohibited based on the standards applicable to steam-electric generating facilities contained in 40 C.F.R. part 423.

## B. Technology-Based Effluent Limitations

### 1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at 40 C.F.R. section 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Best Professional Judgment (BPJ) in accordance with 40 C.F.R. section 125.3.

The CWA requires that technology-based effluent limitations be established based on several levels of controls:

**a.** Best practicable treatment control technology (BPT) represents the average of the best existing performance by well-operated facilities within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.

**b.** Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.

**c.** Best conventional pollutant control technology (BCT) represents the control from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering a two-part reasonableness test. The first test compares the relationship between the costs of attaining a reduction in effluent discharge and the resulting benefits. The second test examines the cost and level of reduction of pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources. Effluent limitations must be reasonable under both tests.

**d.** New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires USEPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BAT, BCT, and NSPS. Section 402(a)(1) of the CWA and 40 C.F.R. section 125.3 authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern. Where BPJ is used, the Regional Water Board must consider specific factors outlined in 40 C.F.R. section 125.3.

### 2. Applicable Technology-Based Effluent Limitations

Pursuant to CWA section 306 (b) (1) (B), USEPA has established standards of performance for the steam electric power point source category, for existing and new sources at 40 C.F.R part 423. These regulations apply to the Facility as "*an establishment primarily engaged in the generation of electricity for distribution and sale which results primarily from a process utilizing fossil-type fuel … in conjunction with a thermal cycle employing the steam water system as the thermodynamic medium*" (40 C.F.R section 423.10). Standards of performance for existing facilities (instead of new source performance standards) are applicable to the Facility, because its construction was commenced before the publication of regulations on November 19, 1982, which proposed standards of performance for the industry.

The following are applicable technology-based standards of performance (BPT and BAT) applicable to the Facility from the ELGs for existing sources at 40 C.F.R part 423. The guidelines do not include standards of performance based on BCT.

The table below lists the Facility's waste streams subject to the ELGs for steam electric power generating point sources.

**Table F-6. Plant Waste Streams Subject to Effluent Limitation Guidelines**

| Discharge Point | Waste Stream | ELG Classification | Volume (MGD) |
|---|---|---|---|
| 001 | Units 5-6 once –through cooling (OTC) water | OTC water | 215 |
| 001 | Retention basin discharge | Low volume wastes | 0.864 |
| 002 | Units 7-8 OTC water | OTC water | 674 |

40 C.F.R. part 423 contains ELGs applicable to the following process waters: low volume wastes, fly ash transport water, bottom ash transport water, metal cleaning wastes (both chemical and non-chemical), once through cooling water, cooling tower blowdown, and discharges of coal pile runoff. Of these, the ELGs that apply to discharges from this Facility include: low volume wastes and once-through cooling water at Discharge Point 001; and OTC water at Discharge Point 002.

#### a. Standards of Performance Based on BPT

Applicable effluent limitations established on the basis of BPT are summarized as follows:

**i.** The pH of all discharges, except once-through cooling water, shall be within the range of 6.0 – 9.0 standard units [40 C.F.R section 423.12 (b) (1)].

**ii.** There shall be no discharge of polychlorinated biphenyl (PCB) compounds such as those commonly used for transformer fluid [40 C.F.R. section 423.12 (b) (2)].

**iii.** *Low volume wastes* are defined as wastewater sources for which specific limitations are not established by the effluent limitation guidelines at 40 C.F.R. part 423. The quantity of pollutants discharged from low volume waste sources shall not exceed the quantity determined by multiplying the flow of the low volume waste sources times the concentration listed in the following table [40 C.F.R. section 423.12 (b) (3)].

**Table F-7. BPT Effluent Limitations for Low Volume Wastes**

| Parameter | Units | Effluent Limitations | |
|---|---|---|---|
| | | Average of Daily Values for 30 Consecutive Days Shall Not Exceed[1] | Maximum for Any 1 Day[2] |
| TSS | mg/L | 30.0 | 100.0 |
| Oil and Grease | mg/L | 15.0 | 20.0 |

[1] Applied as an average monthly (30-day average) limitation.
[2] Applied as a maximum daily limitation.

**iv.** *Once-through cooling water* is defined as water passed through the main cooling condensers in one or two passes for the purpose of removing waste heat. The quantity of pollutants discharged in once through cooling water shall not exceed the quantity determined by multiplying the flow of once through cooling water sources times the concentration listed in the following table [40 C.F.R. section 423.12 (b) (6)].

**Table F-8. BPT Effluent Limitations for Once-through Cooling Water**

| Parameter | Units | Effluent Limitations | |
|---|---|---|---|
| | | Average Concentration | Maximum Concentration |
| Free available chlorine | mg/L | 0.2 | 0.5 |

**v.** Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Regional Water Board that the units in a particular location cannot operate at or below this level or chlorination [40 C.F.R. section 423.12 (b) (8)].

**vi.** In the event that waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant attributable to each controlled waste source shall not exceed the specified limitations for that waste source.

**Table F-9. BPT Effluent Limitation Guidelines from 40 C.F.R. section 423.12**

| Parameter | Units | Effluent Limitations | | | | |
|---|---|---|---|---|---|---|
| | | Average Monthly | Average Concentration | Maximum Daily | Instantaneous | |
| | | | | | Minimum | Maximum |
| ***Effluent Limitations for Low Volume Wastes*** | | | | | | |
| Total Suspended Solids | mg/L | 30[1] | -- | 100 | -- | -- |
| Oil and Grease | mg/L | 15[1] | -- | 20 | -- | -- |
| ***Effluent Limitations for Once-through Cooling Water*** | | | | | | |
| Free Available Chlorine | mg/L | -- | 0.2 | -- | -- | 0.5 |

[1] Applied as a 30-day average concentration.

**b. Standards of Performance Based on BAT**

Applicable effluent limitations established on the basis of BAT are summarized as follows:

**i.** There shall be no discharge of polychlorinated biphenyl compounds (PCBs) such as those commonly used for transformer fluid [40 C.F.R section 423.13 (a)].

**ii.** For any plant with a total rated electric generating capacity of 25 or more megawatts the quantity of pollutants discharged in once through cooling water from each discharge point shall not exceed the quantity determined by multiplying the flow of once through cooling water from each discharge point times the concentration listed in the following table [40 C.F.R. section 423.13 (b) (1)].

**Table F-10. BAT Effluent Limitations for Once-through Cooling Water**

| Parameter | Units | Effluent Limitations |
|---|---|---|
| | | Maximum Concentration |
| Total Residual Chlorine | mg/L | 0.20 |

Total residual chlorine may not be discharged from any single generating unit for more than two hours per day unless the Discharger demonstrates to the permitting authority that discharge for more than two hours per day is required for macroinvertebrate control [40 C.F.R. section 423.13 (b) (2)].

**iii.** At the permitting authority's discretion, the quantity of pollutant allowed to be discharged may be expressed as a concentration limitation instead of the mass based limitations specified in paragraphs (ii) and (iii) of this section. Concentration limitations shall be those concentrations specified in this section.

**Table F-11. BAT Effluent Limitation Guidelines from 40 C.F.R. section 423.13**

| Parameter | Units | Effluent Limitations | | | |
|---|---|---|---|---|---|
| | | Average Monthly | Maximum Daily | Instantaneous Minimum | Instantaneous Maximum |
| ***Effluent Limitations for Once-through Cooling Water*** | | | | | |
| PCBs[1] | µg/L | [2] | | | |
| Total Residual Chlorine | mg/L | -- | 0.2 | -- | -- |

[1] PCBs shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Arolclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260.
[2] The Discharge of PCBs is prohibited.

### 8. Summary of Technology-Based Effluent Limitations

Effluent limitations in 40 C.F.R. section 423.12(b)(11) and section 423.13(g) specify that, at the permitting authority's discretion, effluent limitations may be expressed as a concentration-based limitation instead of the mass-based limitations otherwise specified. Consistent with the prior order, technology-based effluent limitations in this Order are expressed as concentration-based limitations.

Effluent limitations are specific to the type of discharge. The pH of all discharges, except once-through cooling water, shall be within the range of 6.0 – 9.0 standard units [40 C.F.R section 423.12 (b) (1)]. There shall be no discharge of PCBs such as those commonly used in transformers.

A summary of the technology-based effluent limitations for Discharge Points 001 and 002 is shown below.

**Table F-12. Summary of Technology-Based Effluent Limitations**

| Parameter | Units | Effluent Limitations | | | | |
|---|---|---|---|---|---|---|
| | | Average Monthly | Average Concentration | Maximum Daily | Instantaneous | |
| | | | | | Minimum | Maximum |
| ***Effluent Limitations for Once-through Cooling Water*** | | | | | | |
| PCBs[1] | µg/L | [2] | | | | |
| Free Available Chlorine[3,4] | mg/L | -- | 0.2 | -- | -- | 0.5 |
| Total Residual Chlorine[3,4] | mg/L | -- | -- | 0.2 | -- | -- |
| ***Effluent Limitations for Low Volume Wastes*** | | | | | | |
| Total Suspended Solids | mg/L | 30[5] | -- | 100 | -- | -- |
| Oil and Grease | mg/L | 15[5] | -- | 20 | -- | -- |
| pH | s.u. | -- | -- | -- | 6.0 | 9.0 |

[1] PCBs shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Arolclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260.
[2] The Discharge of PCBs that originate from the Facility is prohibited.
[3] If other oxidants are used, this shall be the total of all oxidants reported as residual chlorine.
[4] Total residual and free available chlorine may not be discharged from any single generating unit for more than two hours per day unless the Discharger demonstrates to the permitting authority that discharge for more than two hours per day is required for macroinvertebrate control.
[5] Applied as a 30-day average concentration.

### C. Water Quality-Based Effluent Limitations (WQBELs)

#### 1. Scope and Authority

CWA Section 301(b) and 40 C.F.R. section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

Section 122.44(d)(1)(i) of 40 C.F.R. requires that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated beneficial uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the Ocean Plan, CTR and NTR.

#### 2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

**a. Basin Plan.** The Regional Water Board adopted a Basin Plan that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the Basin Plan. The Facility discharges to the Pacific Ocean and to King Harbor. The beneficial uses applicable to the Pacific Ocean and King Harbor are summarized in section III.C.1 of this Fact Sheet. The Basin Plan includes both narrative and numeric water quality objectives applicable to these receiving waters.

Priority pollutant water quality criteria in the CTR are applicable to King Harbor, the receiving water for Outfall 001. The CTR contains both saltwater and freshwater criteria. Because a distinct separation generally does not exist between freshwater and saltwater aquatic communities, the following apply, in accordance with 40 C.F.R. section 131.38(c)(3): freshwater criteria apply at salinities of 1 part per thousand (ppt) and below at locations where this occurs 95 percent or more of the time. The CTR criteria for saltwater, or human health for consumption of organisms, whichever is more stringent, are used to prescribe the effluent limitations to protect the beneficial uses of King Harbor.

**b. Ocean Plan.** As noted in section III.C of this Fact Sheet, the State Water Board adopted an Ocean Plan that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the Ocean Plan. The beneficial uses applicable to the Pacific Ocean are summarized in section III.C.1 of this Fact Sheet. The Ocean Plan includes both narrative and numeric water quality objectives applicable to the receiving water for discharges through Outfall 001.

**c. State Implementation Policy.** As noted in section III.C of this Fact Sheet, the State Water Board adopted a State Implementation Policy (SIP) that establishes

implementation provisions to achieve the priority pollutant criteria promulgated for California by the USEPA through the CTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The beneficial uses applicable to King Harbor are summarized in section III.C.1 of this Fact Sheet The Basin Plan includes both narrative and numeric water quality objectives applicable to the receiving water.

**d. Thermal Plan.** The State Water Board adopted the Thermal Plan on May 18, 1972. The Thermal Plan includes narrative water quality objectives for discharges of elevated temperature wastes for existing discharges (those discharges at least under construction prior to the adoption of the Plan) and for new discharges. A revised Thermal Plan was adopted by the State Water Board on September 18, 1975. Definition 10 of the Thermal Plan states that any discharge which was taking place prior to the adoption of the plan is considered an existing discharge. The Facility was built and placed into service by Southern California Edison between 1954 and 1967, and is therefore considered an existing discharge.

**e. Santa Monica Bay DDTs and PCBs TMDL.** Consistent with 40 C.F.R. sections 130.2 and 130.7, and section 303(d) of the CWA and USEPA guidance for developing TMDLs in California, the USEPA issued the *Santa Monica Bay Total Maximum Daily Loads for DDTs and PCBs* on March 26, 2012. It includes waste load allocations (WLAs) for DDT and PCBs for point sources, including the Facility, that are described in Table 6-2 of the TMDL.

The Regional Water Board developed WQBELs for DDTs and PCBs on the basis of the WLAs. The Regional Water Board developed WQBEL's pursuant to 40 C.F.R. section 122.44(d)(1)(vii), which does not require or contemplate a reasonable potential analysis. Additionally, section 8 of the TMDL, (Implementation Recommendations) stipulates that "all discharges with WLAs identified in Table 6-2 are to be considered by NPDES permit writers to have reasonable potential under 40 C.F.R. 122.44(d) and require WQBELs following this TMDL."

The TMDL provides WLAs for the Discharger for DDT and PCBs equal to 0.00017 µg/L and 0.000019 µg/L, respectively, which are intended to meet the target concentrations within the receiving water. The WLAs are equal to the Ocean Plan objectives for the protection of human health.

As described in section 6.2 of the TMDL (Wasteload Allocations), the WLAs are to be translated to WQBELs with no further adjustment of dilution credit or background concentrations. In section 8.1, USEPA recommends the concentration-based WLAs be implemented as monthly average WQBELs in permits. As follows, monthly average effluent limitations for DDTs are included in this Order; however, the more stringent technology-based effluent limitations (TBELs) for PCBs is "no discharge" from the Facility and it is included as a narrative effluent limitation, rather than an effluent limitation based on the WLA (see discussion in section IV.D.). The TBEL for PCBs in this Order has been applied as prohibition of discharges from the facility. The Santa Monica Bay is impaired for PCBs. The concentrations of PCBs in the intake water exceed the TBEL established for discharges of PCBs from the facility. PCB containing equipment is present on the site. The equipment is located within secondary containment to ensure that any spill is kept within the area. Monitoring of the Retention Basin has resulted in no detections of PCBs. Therefore, concentrations of the pollutant in the intake and effluent will be evaluated to determine if the facility operations are contributing to the concentration of PCBs in

the effluent. Any increase in the effluent concentration of PCBs relative to the intake concentration yields a potential violation of the TBEL for PCBs.

The method for translating the DDT WLA into permit limits will vary between Discharge Point 001 and Discharge Point 002. At the time of TMDL development, the generating stations individual NPDES permits were considered ocean discharges, with Ocean Plan objectives and procedures. Following the period of initial TMDL development, the Regional Water Board notified the Discharger by letter dated January 21, 2003 that Discharge Point 002 was reclassified from an ocean discharge to an enclosed bay discharge. As a result of the reclassification for Discharge Point 002, CTR criteria and SIP procedures would apply in lieu of the Ocean Plan. Despite the reclassification, WQBELs must incorporate the assumptions of the TMDL WLAs to be consistent with the overall framework for achieving water quality objectives. Therefore the WQBEL for DDT at the Facility is translated directly into a monthly average effluent limit for Discharge Point 001. For Discharge Point 002, WQBELs for DDT are calculated from the WLAs provided in Table 6-2 of the TMDL using SIP procedures which incorporate statistical multipliers (see section IV.C.7 of this Fact Sheet).

**3. Determining the Need for WQBELs for Discharge Point 001**

**a.** Discharge Point 001 is located in the Santa Monica Bay and is subject to permitting procedures contained in the Ocean Plan. The need for effluent limitations based on water quality objectives in Table 1 of the Ocean Plan was evaluated in accordance with C.F.R. section 122.44(d) and guidance for statistically determining the "reasonable potential" for a discharged pollutant to exceed an objective, as outlined in the "California Ocean Plan Reasonable Potential Analysis (RPA) Amendment" that was adopted by the State Water Board on April 21, 2005. The statistical approach combines knowledge of effluent variability (as estimated by a coefficient of variation) with the uncertainty due to a limited amount of effluent data to estimate a maximum effluent value at a high level of confidence. This estimated maximum effluent value is based on a lognormal distribution of daily effluent values. Projected receiving water values (based on the estimated maximum effluent value or the reported maximum effluent value and minimum probable initial dilution), can then be compared to the appropriate objective to determine the potential for an exceedance of that objective and the need for an effluent limitation.

The water quality objectives contained in the Ocean Plan are summarized in the table below. This table includes pollutants which had effluent limitations for Discharge Point 001 in the prior order and/or pollutants which were detected in the effluent.

**Table F-13. Ocean Plan Water Quality Objectives[1]**

| Parameter | 6-Month Median (µg/L) | Daily Maximum (µg/L) | Instantaneous Maximum (µg/L) | 30-Day Average (µg/L) |
|---|---|---|---|---|
| **Objectives for Protection of Marine Aquatic Life** | | | | |
| Arsenic | 8 | 32 | 80 | -- |
| Cadmium | 1 | 4 | 10 | -- |
| Chromium VI | 2 | 8 | 20 | -- |
| Copper | 3 | 12 | 30 | -- |

| Parameter | 6-Month Median (µg/L) | Daily Maximum (µg/L) | Instantaneous Maximum (µg/L) | 30-Day Average (µg/L) |
|---|---|---|---|---|
| Lead | 2 | 8 | 20 | -- |
| Mercury | 0.04 | 0.16 | 0.4 | -- |
| Nickel | 5 | 20 | 50 | -- |
| Selenium | 15 | 60 | 150 | -- |
| Silver | 0.7 | 2.8 | 7 | -- |
| Zinc | 20 | 80 | 200 | -- |
| Total Residual Chlorine | 2 | 8 | 60 | -- |
| Ammonia (as N) | 600 | 2400 | 6000 | -- |
| Chronic Toxicity | -- | 1 | -- | -- |
| Radioactivity | Not to exceed limits specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30253 of the California Code of Regulations. Reference to Section 30253 is prospective, including future changes to any incorporated provisions of federal law, as the changes take effect. | | | |
| **Objectives for Protection of Human Health – Non-Carcinogens** | | | | |
| Antimony | -- | -- | -- | 1,200 |
| Chromium (III) | -- | -- | -- | 190,000 |
| Thallium | -- | -- | -- | 2 |
| **Objectives for Protection of Human Health – Carcinogens** | | | | |
| Beryllium | -- | -- | -- | 0.033 |

1. Water quality objectives for Ocean Plan Table 1 pollutants which had effluent limitations for Discharge Point 001 in the prior order and/or pollutants which were detected in the effluent.

According to the 2012 Ocean Plan amendment, the RPA can yield three endpoints:

Endpoint 1, an effluent limitation is required and monitoring is required;

Endpoint 2, an effluent limitation is not required and the Regional Water Board may require monitoring; and

Endpoint 3, the RPA is inconclusive, monitoring is required, and an existing effluent limitation may be retained or a permit reopener clause may be included to allow inclusion of an effluent limitation if future monitoring warrants the inclusion.

**a. Minimum Initial Dilution**

The implementation provisions for Table 1 in section III.C of the Ocean Plan specify that the minimum initial dilution is the lowest average initial dilution within any single month of the year. Dilution estimates are to be based on observed waste flow characteristics, observed receiving water density structure, and the assumption that no currents of sufficient strength to influence the initial dilution process flow across the discharge structure. Before establishing a dilution credit for a discharge, it must

first be determined if, and how much, receiving water is available to dilute the discharge.

As previously discussed the prior order established the minimum initial dilution factor (Dm) for discharges from the Facility at Discharge Point 001 to be 11.5 to 1. The Discharger has indicated that no additions or modifications to the Facility or the outfall at Discharge Point 001 have been proposed that would alter the previously determined dilution characteristics. Therefore, the dilution ratios established in Order 00-085 are retained in this Order for the discharge to the Pacific Ocean and applied to the RPA and WQBELs established herein. As discussed in Section C.9.b of this Fact Sheet, dilution credits are not allowed for Discharge Point 002.

**b. RPA Results for Discharge Point 001**

Effluent data submitted to the Los Angeles Water Board for the period from November, 2010 through November, 2015 for Discharge Point 001 was considered in the RPA. The dilution credit of 11.5 applicable to the ocean outfall was considered to evaluate reasonable potential in accordance with the procedures contained in the Ocean Plan. Based on the evaluation using the *RPcalc 2.2* software tool, which was developed by the State Water Board for the purpose of conducting RPAs of ocean discharges, the discharge demonstrates reasonable potential to cause or contribute to an excursion above an Ocean Plan Table 1 water quality objective for beryllium and that effluent limits are required for this pollutant.

The Regional Water Board has determined that total residual chlorine and chronic toxicity demonstrate reasonable potential based on Step 13 of the RPA procedure described in Appendix VI of the Ocean Plan which states that one may conduct an RPA on the basis of best professional judgment. The discharge is subject to TBELs resulting from ELGs for total residual chlorine. Permitting procedures in the EPA "*NPDES Permit Writers Manual*" require comparing the WQBEL to the Technology-based limit and applying the more stringent as limit. This step ensures that any TBELs applied as limits would not allow for an exceedance of a water quality objective. In regard to chronic toxicity, the large volume of chlorinated discharge warrant inclusion of a chronic toxicity limit based on Step 13 of the Ocean Plan, which allows for consideration of the potential toxic impact of discharges. Therefore, consistent with Step 13 of the Ocean Plan, the Regional Water Board has determined that the discharge demonstrates reasonable potential to cause or contribute to an exceedance of water quality standards for chlorine and chronic toxicity in the receiving water (Endpoint 1). Effluent limitations for these pollutants are retained in this Order.

Based on the evaluation using the *RPcalc 2.2* software tool the discharge does not demonstrate reasonable potential for arsenic, copper and zinc (Endpoint 2). The prior order included effluent limitations for these pollutants. Thus, as specified in the Ocean Plan, effluent limitations for these pollutants have not been retained in this Order.

For many of the Ocean Plan Table 1 parameters, most of the sampling events yielded non-detect results. Evaluation using the *RPcalc 2.2* software tool yielded Endpoint 3 result. This result means the RPA was inconclusive. The Ocean Plan indicates that when the RPA is inconclusive, monitoring for the pollutant is required and any effluent limitation for a pollutant from the prior order shall be retained in the permit. Order No. 00-085 included effluent limitations for cadmium, chromium (VI), lead, mercury, nickel, selenium, and silver. The limitations for these pollutants are

retained in this Order. Effluent limitations for all other pollutants displaying Endpoint 3 are not included in this Order. However, the Order does include monitoring for these constituents and a reopener such that limits may be inserted if the monitoring data yields reasonable potential.

A summary of the RPA results is provided in the table below:

**Table F-14. Reasonable Potential Analysis (RPA) Results Summary for Discharge Point 001**

| Pollutant | Units | n[1] | MEC[2,3] | Most Stringent Criteria | Background | RPA Endpoint[4] |
|---|---|---|---|---|---|---|
| **Objectives for Protection of Marine Aquatic Life** | | | | | | |
| Arsenic, Total Recoverable | µg/L | 12 | 29.4 | 8 | 3 | Endpoint 2 |
| Cadmium, Total Recoverable | µg/L | 12 | <0.0835[5] | 1 | 0 | Endpoint 3 |
| Chromium (Hexavalent), Total Recoverable | µg/L | 13 | <4 | 2 | 0 | Endpoint 3 |
| Copper, Total Recoverable | µg/L | 12 | 11.2 | 3 | 2 | Endpoint 2 |
| Lead, Total Recoverable | µg/L | 12 | 0.183[5] | 2 | 0 | Endpoint 3 |
| Mercury | µg/L | 10 | 0.0831[5] | 0.04 | 0.0005 | Endpoint 3 |
| Nickel, Total Recoverable | µg/L | 12 | 1.47 | 5 | 0 | Endpoint 3 |
| Selenium, Total Recoverable | µg/L | 12 | 0.414[5] | 15 | 0 | Endpoint 3 |
| Silver, Total Recoverable | µg/L | 12 | 4.46[5] | 0.7 | 0.16 | Endpoint 3 |
| Zinc, Total Recoverable | µg/L | 12 | 47.7 | 20 | 8 | Endpoint 2 |
| Cyanide | µg/L | 1 | <7 | 1 | 0 | Endpoint 3 |
| Total Chlorine Residual | µg/L | 2 | 80 | 2 | 0 | Endpoint 1[6] |
| Ammonia | µg/L | 6 | 280 | 600 | 0 | Endpoint 3 |
| Chronic Toxicity | TUc | 49 | 2 | 1 | 0 | Endpoint 1[6] |
| Phenolic Compounds (non-chlorinated)[7] | µg/L | 1 | <1 | 30 | 0 | Endpoint 3 |
| Chlorinated Phenolics[8] | µg/L | 1 | <1.2 | 1 | 0 | Endpoint 3 |
| Endosulfan | µg/L | 1 | <0.014 | 0.009 | 0 | Endpoint 3 |
| Endrin | µg/L | 1 | <0.015 | 0.002 | 0 | Endpoint 3 |
| HCH[9] | µg/L | 1 | <0.014 | 0.004 | 0 | Endpoint 3 |
| **Objectives for Protection of Human Health – Non-Carcinogens** | | | | | | |
| Acrolein | µg/L | 1 | <14 | 220 | 0 | Endpoint 3 |
| Antimony | µg/L | 11 | 10.1[5] | 1200 | 0 | Endpoint 3 |
| Bis(2-chloroethoxy) methane | µg/L | 1 | <1.3 | 4.4 | 0 | Endpoint 3 |
| Bis(2-chloroisopropyl) ether | µg/L | 1 | <1.6 | 1200 | 0 | Endpoint 3 |
| Chlorobenzene | µg/L | 1 | <0.17 | 570 | 0 | Endpoint 3 |

| Pollutant | Units | n[1] | MEC[2,3] | Most Stringent Criteria | Background | RPA Endpoint[4] |
|---|---|---|---|---|---|---|
| Chromium (III) | µg/L | 12 | 11.5 | 190,000 | 0 | Endpoint 3 |
| Di-n-butyl-phthalate | µg/L | 1 | <1.5 | 3,500 | 0 | Endpoint 3 |
| Dichlorobenzenes | µg/L | 2 | <1.5 | 5,100 | 0 | Endpoint 3 |
| Diethyl phthalate | µg/L | 1 | <1.4 | 33,000 | 0 | Endpoint 3 |
| Dimethyl phthalate | µg/L | 1 | <1.3 | 820,000 | 0 | Endpoint 3 |
| 4,6-dinitro-2-methylphenol | µg/L | 1 | <7.1 | 220 | 0 | Endpoint 3 |
| 2,4-dinitrophenol | µg/L | 1 | <6.7 | 4.0 | 0 | Endpoint 3 |
| Ethylbenzene | µg/L | 1 | <0.14 | 4,100 | 0 | Endpoint 3 |
| Fluoranthene | µg/L | 1 | <1.6 | 15 | 0 | Endpoint 3 |
| Hexachlorocyclopentadiene | µg/L | 1 | <3.5 | 58 | 0 | Endpoint 3 |
| Nitrobenzene | µg/L | 1 | <1.5 | 4.9 | 0 | Endpoint 3 |
| Thallium | µg/L | 9 | 10[5] | 2 | 0 | Endpoint 3 |
| Toluene | µg/L | 1 | <0.24 | 85,000 | 0 | Endpoint 3 |
| Tributyltin | µg/L | [7] | -- | 0.0014 | 0 | Endpoint 3 |
| 1,1,1-trichloroethane | µg/L | 1 | <0.3 | 540,000 | 0 | Endpoint 3 |
| **Objectives for Protection of Human Health – Carcinogens** | | | | | | |
| Acrylonitrile | µg/L | 1 | <8 | 0.10 | 0 | Endpoint 3 |
| Aldrin | µg/L | 1 | <0.013 | 0.000022 | 0 | Endpoint 3 |
| Benzene | µg/L | 1 | <0.14 | 5.9 | 0 | Endpoint 3 |
| Benzidine | µg/L | 1 | <3.3 | 0.000069 | 0 | Endpoint 3 |
| Beryllium | µg/L | 12 | 22.6 | 0.033 | 0 | Endpoint 1 |
| Bis(2-chloroethyl) ether | µg/L | 1 | <1.2 | 0.045 | 0 | Endpoint 3 |
| Bis(2-ethylhexyl) phthalate | µg/L | 1 | <1.6 | 3.5 | 0 | Endpoint 3 |
| Carbon tetrachloride | µg/L | 1 | <0.23 | 0.90 | 0 | Endpoint 3 |
| Chlordane | µg/L | 1 | <0.17 | 0.000023 | 0 | Endpoint 3 |
| Chlorodibromomethane | µg/L | 1 | <0.25 | 8.6 | 0 | Endpoint 3 |
| Chloroform | µg/L | 1 | <0.46 | 130 | 0 | Endpoint 3 |
| DDT[10] | µg/L | 1 | <0.013 | 0.00017 | 0 | Endpoint 3 |
| 1,4-dichlorobenzene | µg/L | 1 | <0.43 | 18 | 0 | Endpoint 3 |
| 3,3'-dichlorobenzidine | µg/L | 1 | <1.3 | 0.0081 | 0 | Endpoint 3 |
| 1,2-dichloroethane | µg/L | 1 | <0.24 | 28 | 0 | Endpoint 3 |
| 1,1-dichloroethylene | µg/L | 1 | <0.43 | 0.9 | 0 | Endpoint 3 |
| Dichlorobromomethane | µg/L | 1 | <0.21 | 6.2 | 0 | Endpoint 3 |

| Pollutant | Units | n[1] | MEC[2,3] | Most Stringent Criteria | Background | RPA Endpoint[4] |
|---|---|---|---|---|---|---|
| Dichloromethane | µg/L | [7] | -- | 450 | 0 | Endpoint 3 |
| 1,3-dichloropropene | µg/L | 1 | <0.25 | 8.9 | 0 | Endpoint 3 |
| Dieldrin | µg/L | 1 | <0.014 | 0.00004 | 0 | Endpoint 3 |
| 2,4-dinitrotoluene | µg/L | 1 | <1.2 | 2.6 | 0 | Endpoint 3 |
| 1,2-diphenylhydrazine | µg/L | 1 | <0.43 | 0.16 | 0 | Endpoint 3 |
| Halomethanes[11] | µg/L | 1 | <0.5 | 130 | 0 | Endpoint 3 |
| Heptachlor | µg/L | 1 | <0.013 | 0.00005 | 0 | Endpoint 3 |
| Heptachlor epoxide | µg/L | 1 | <0.013 | 0.00002 | 0 | Endpoint 3 |
| Hexachlorobenzene | µg/L | 1 | <1.5 | 0.00021 | 0 | Endpoint 3 |
| Hexachlorobutadiene | µg/L | 1 | <1.4 | 14 | 0 | Endpoint 3 |
| Hexachloroethane | µg/L | 1 | <1.5 | 2.5 | 0 | Endpoint 3 |
| Isophorone | µg/L | 1 | <1.3 | 730 | 0 | Endpoint 3 |
| N-nitrosodimethylamine | µg/L | 1 | <1.6 | 7.3 | 0 | Endpoint 3 |
| N-nitrosodi-N-propylamine | µg/L | 1 | <1.2 | 0.38 | 0 | Endpoint 3 |
| N-nitrosodiphenylamine | µg/L | 1 | <1.4 | 2.5 | 0 | Endpoint 3 |
| PAHs[12] | µg/L | 1 | <1.1 | 0.0088 | 0 | Endpoint 3 |
| PCBs[13] | µg/L | 1 | <0.063 | 0.000019 | 0 | Endpoint 3 |
| TCDD equivalents[14] | µg/L | 1 | <0.00000066 | $3.9 \times 10^{-9}$ | 0 | Endpoint 3 |
| 1,1,2,2-tetrachloroethane | µg/L | 1 | <0.41 | 2.3 | 0 | Endpoint 3 |
| Tetrachloroethylene | µg/L | 1 | <0.39 | 2.0 | 0 | Endpoint 3 |
| Toxaphene | µg/L | 1 | <0.3 | 0.00021 | 0 | Endpoint 3 |
| Trichloroethylene | µg/L | 1 | <0.37 | 27 | 0 | Endpoint 3 |
| 1,1,2-trichloroethane | µg/L | 1 | <0.38 | 9.4 | 0 | Endpoint 3 |
| 2,4,6-trichlorophenol | µg/L | 1 | <1.3 | 0.29 | 0 | Endpoint 3 |
| Vinyl chloride | µg/L | 1 | <0.3 | 36 | 0 | Endpoint 3 |

1. Number of data points available for the RPA.
2. If there is a detected value, the highest reported value is summarized in the table. If there are no detected values, the lowest MDL is summarized in the table.
3. Note that the reported MEC does not account for dilution. The RPA does account for dilution; therefore it is possible for a parameter with an MEC in exceedance of the most stringent criteria not to present an Endpoint 1.
4. Endpoint 1 – Reasonable Potential (RP) determined, limit required, monitoring required.
   Endpoint 2 – Discharger determined not to have RP, monitoring may be established.
   Endpoint 3 – RPA was inconclusive, carry over previous limitations if applicable, and establish monitoring.
5. Result was detected at a concentration greater than the method detection limit (MDL) and less than the ML.
6. Total residual chlorine and chronic toxicity possesses reasonable potential based on Step 13 of Ocean Plan and Resolution 88-80 which stipulates that the Discharger's 301(g) exception to Ocean Plan requirements for total residual chlorine is contingent upon the discharge at Discharge Point 001 meeting a chronic toxicity limits of 19 TUc as a daily maximum.
7. Non-chlorinated phenolic compounds represent the sum of 2-nitrophenol; phenol; 2,4-dimethylphenol; 2,4-dinitrophenol; 2-methyl-4,6-dinitrophenol; and 4-nitrophenol.
8. Chlorinated phenolic compounds represent the sum of 2-chlorophenol; 2,4-dichlorophenol; 2,4,6-trichlorophenol; 4-chloro-3-methylphenol; and pentachlorophenol.
9. HCH shall mean the sum of alpha, beta, gamma (lindane), and delta isomers of hexachlorocyclohexane.
10. DDT shall mean the sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD, and 2,4'-DDD.
11. Halomethanes shall mean the sum of bromoform, bromomethane (methyl bromide), and chloromethane (methyl chloride).
12. PAHs shall mean the sum of acenaphthylene; anthracene; 1,2-benzanthracene; 3,4-benzofluoranthene; benzo(k)fluoranthene; 1,12-benzoperylene; benzo(a)pyrene; chrysene; dibenzo(a,h)anthracene; fluorine; indeno(1,2,3-cd)pyrene; phenanthrene; and pyrene.
13. PCBs shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Arolclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260.
14. TCDD Equivalents shall mean the sum of the concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown in the table below. USEPA method 1613 may be used to analyze dioxin and furan congeners.

    Dioxin-TEQ (TCDD Equivalents) = $\Sigma (C_x \times TEF_x)$

    Where:

    $C_x$ = concentration of dioxin or furan congener x

    $TEF_x$ = TEF for congener x

**Toxicity Equivalency Factors**

| Isomer Group | Toxicity Equivalency Factor (TEF) |
|---|---|
| 2,3,7,8-tetra CDD | 1.0 |
| 2,3,7,8-penta CDD | 0.5 |
| 2,3,7,8-hexa CDDs | 0.1 |
| 2,3,7,8-hepta CDD | 0.01 |
| Octa CDD | 0.001 |
| 2,3,7,8 tetra CDF | 0.1 |
| 1,2,3,7,8 penta CDF | 0.05 |
| 2,3,4,7,8 penta CDF | 0.5 |
| 2,3,7,8 hexa CDFs | 0.1 |
| 2,3,7,8 hepta CDFs | 0.01 |
| Octa CDF | 0.001 |

**4. WQBEL Calculations for Discharge Point 001**

From the Table 1 water quality objectives of the Ocean Plan, effluent limitations are calculated according to Equation 1 of the Ocean Plan for all pollutants, except for radioactivity:

$$Ce = Co + Dm(Co - Cs)$$

Where:

Ce = the effluent limitation (µg/L)
Co = the water quality objective to be met at the completion of initial dilution (µg/L)
Cs = background seawater concentration (µg/L)
Dm = minimum probable initial dilution expressed as parts seawater per part wastewater

As discussed in Sections II.B and IV.C.3 of the Fact Sheet, the Dm, approved by the State Water Board, is 11.5:1.

Table 3 of the Ocean Plan establishes background concentrations (represented as "Cs") for some pollutants to be used when determining reasonable potential. In accordance with Table 1 implementation procedures, Cs equals zero for all pollutants not established in Table C. The background concentrations provided in Table C are summarized below:

**Table F-15. Background Seawater Concentrations (Cs)**

| Parameter | Ocean Plan Table 3 Background Concentration (µg/L) |
|---|---|
| Arsenic | 3 |
| Copper | 2 |
| Mercury | 0.0005 |
| Silver | 0.16 |
| Zinc | 8 |

Section III.C.8.d of the Ocean Plan describes compliance determination for Table 1 pollutants for dischargers that use a large volume of ocean water for once-through cooling and states:

> *Effluent concentration values ($C_e$) shall be determined through the use of equation 1 considering the minimum probable initial dilution of the combined effluent (in-plant waste streams plus cooling water flow). These concentration values shall then be converted to mass emission limitations as indicated in equation 3. The mass emission limits will then serve as requirements applied to all in-plant waste streams taken together which discharge into the cooling water flow, except for total chlorine residual, acute [if applicable per Section 3 (c)] and chronic toxicity, and instantaneous maximum concentrations in Table 1 shall apply to, and be measured in, the combined final effluent, as adjusted for dilution with ocean water.*

In accordance with Ocean Plan implementation procedures for dischargers using a large volume of ocean water for once-through cooling, this Order establishes WQBELs applicable to the combined discharge through Discharge Point 001 as concentration-based limitations for all Ocean Plan Table 1 parameters requiring instantaneous maximum; and as both concentration- and mass-based limitations for all Table 1 parameters requiring 6-month median, daily maximum, and average monthly (30-day average) limitations. This Order also establishes WQBELs applicable to the low volume in-plant waste streams as mass-based limitations for all Table 1 parameters requiring 6-

month median, average monthly (30-day average), and daily maximum effluent limitations, with compliance determined by the **total in-plant waste streams mass discharge** taken together, which will be calculated as the sum of the mass discharges from the individual in-plant waste streams.

The following demonstrates how the WQBELs, taking silver as an example, are established:

**Silver**

*Compute effluent concentration limitations and values at Discharge Point 001:*

As previously stated the Ocean Plan equation for effluent limitations (Ce) is:

Ce = Co + Dm (Co - Cs)

As defined above for Discharge Point 001 for silver:

Co = 0.7 µg/L (6-Month Median)
2.8 µg/L (Daily Maximum)
7 µg/L (Instantaneous Maximum)
Cs = 0.16 (Background Seawater Concentration)
Dm = 11.5 (minimum probable initial dilution)

Therefore:

$C_e$ = 0.7 µg/L + 11.5 (0.7 µg/L – 0.16) = **6.9 µg/L** (6-Month Median)
$C_e$ = 2.8 µg/L + 11.5 (2.8 µg/L – 0.16) = **33 µg/L** (Daily Maximum)
$C_e$ = 7 µg/L + 11.5 (7 µg/L – 0.16) = **86 µg/L** (Instantaneous Maximum)

Section III.C.4.j of the Ocean Plan states that the permit "shall also specify effluent limitations in terms of mass emission rate limits" applicable to the commingled discharge in addition to concentration-based WQBELs. This Order establishes mass emission rate effluent limitations applicable to the commingled discharge at Discharge Point 001 (i.e., instantaneous maximum WQBELs). The mass emission rate limits are calculated utilizing Equation 3 of the Ocean Plan:

$L_e$ = 0.00834 x Ce x Q

Where

$L_e$ = the total mass emission limitation (lbs/day)

Ce = the effluent concentration limit (µg/L)

Q = the flow rate (MGD)*Compute the total mass-based limitations ($L_e$) of silver for the combined effluent flow at Discharge Point 001 based on a maximum combined flow of 215 MGD at Monitoring Location EFF-001.*

$L_e$ = 0.00834 x 6.9 µg/L x 215 MGD = **12.4 lbs/day** (6-Month Median)

$L_e$ = 0.00834 x 33 µg/L x 215 MGD = **59.1 lbs/day** (Daily Maximum)

*Compute the total maximum mass emission limitations ($L_e$) of silver for all in-plant waste streams taken together based on a maximum combined flow of 0.305 MGD (which includes 0.065 for low volume wastes) discharged at Monitoring Location INT-001A:*

$L_e$ = 0.00834 x 6.9 µg/L x 0.305 MGD = 0.018 lbs/day (6-Month Median)
$L_e$ = 0.00834 x 33 µg/L x 0.305 MGD = 0.084 lbs/day (Daily Maximum)

**5. Bacteria**

The Ocean Plan contains water quality objectives for bacteria that apply to the discharge to the Pacific Ocean from Discharge Point 001 as follows:

Water-Contact Standards

Both the State Water Board and the California Department of Public Health (CDPH) have established standards to protect water contact recreation in coastal waters from bacterial contamination. Subsection a of this section contains bacterial objectives adopted by the State Water Board for ocean waters used for water contact recreation. Subsection b describes the bacteriological standards adopted by CDPH for coastal waters adjacent to public beaches and public water contact sports areas in ocean waters.

a. State Water Board Water-Contact Standards

1) Within a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline, and in areas outside this zone used for water contact sports, as determined by the Regional Board (i.e., waters designated as REC-1), but including all kelp beds, the following bacterial objectives shall be maintained throughout the water column:

30-day Geometric Mean – The following standards are based on the geometric mean of the five most recent samples from each site:

i. Total coliform density shall not exceed 1,000 per 100 mL;
ii. Fecal coliform density shall not exceed 200 per 100 mL; and
iii. Enterococcus density shall not exceed 35 per 100 mL.

Single Sample Maximum:

i. Total coliform density shall not exceed 10,000 per 100 mL;
ii. Fecal coliform density shall not exceed 400 per 100 mL;
iii. Enterococcus density shall not exceed 104 per 100 mL; and
iv. Total coliform density shall not exceed 1,000 per 100 mL when the fecal coliform/total coliform ratio exceeds 0.1.

2) The “Initial Dilution Zone” of wastewater outfalls shall be excluded from designation as "kelp beds” for purposes of bacterial standards, and Regional Boards should recommend extension of such exclusion zone where warranted to the State Water Board (for consideration under Chapter III. J.). Adventitious assemblages of kelp plants on waste discharge structures (e.g., outfall pipes and diffusers) do not constitute kelp beds for purposes of bacterial standards.

b. CDPH Standards

CDPH has established minimum protective bacteriological standards for coastal waters adjacent to public beaches and for public water-contact sports areas in ocean waters. These standards are found in the California Code of Regulations, title 17, section 7958, and they are identical to the objectives contained in subsection a. above. When a public beach or public water-contact sports area fails to meet these standards, CDPH or the local public health officer may post with warning signs or otherwise restrict use of the public beach or public water-contact sports area until the standards are met. The CDPH regulations impose more frequent monitoring and

more stringent posting and closure requirements on certain high-use public beaches that are located adjacent to a storm drain that flows in the summer.

For beaches not covered under AB 411 regulations, CDPH imposes the same standards as contained in Title 17 and requires weekly sampling but allows the county health officer more discretion in making posting and closure decisions.

Shellfish Harvesting Standards

a. At all areas where shellfish* may be harvested for human consumption, as determined by the Regional Board, the following bacterial objectives shall be maintained throughout the water column:

   1) The median total coliform density shall not exceed 70 per 100 mL, and not more than 10 percent of the samples shall exceed 230 per 100 mL.

This Order includes bacterial monitoring in order to confirm that the discharge is not contributing to bacterial impairment in the receiving water. In addition, this Order contains receiving water limitations for bacteria to ensure that the discharge is not contributing to an impairment of the receiving water environment**.**

**6. Radioactivity**

The prior order included an effluent limitation for radioactivity based on Ocean Plan water quality objectives. This Order retains the effluent limitation for radioactivity for Discharge Point 001.

**7. Temperature**

The prior order included effluent limitations for temperature based on specific water quality objectives for existing coastal water dischargers in the Thermal plan. This Order retains the effluent limitations for temperature for Discharge Point 001.

**8. Whole Effluent Toxicity**

Whole effluent toxicity (WET) protects the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. WET tests measure the degree of response of exposed aquatic test organisms to an effluent. The WET approach allows for protection of the narrative “no toxics in toxics amounts” criterion while implementing numeric criteria for toxicity. There are two types of WET tests: acute and chronic. An acute toxicity test is conducted over a short time and measures mortality. A chronic toxicity test is conducted over a longer period of time and may measure mortality, reproduction and growth.

Although chronic toxicity data did not demonstrate statistical reasonable potential, Regional Water Board staff has determined that chronic toxicity possesses reasonable potential based on Step 13 (other available information) from the Ocean Plan. As explained below, the chronic toxicity limitation in this Order implements the USEPA’s 2010 Test of Significant Toxicity (TST) statistical approach. The chronic toxicity effluent limitations in this Order are as stringent as necessary to protect the Ocean Plan water quality objective for chronic toxicity.

The Ocean Plan establishes a daily maximum chronic toxicity objective of 1.0 TUc = 100/NOEC, using a 5-concentration hypothesis test. In 2010, USEPA endorsed the peer-reviewed TST statistical approach in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010) as an improved hypothesis-testing tool to evaluate data from USEPA’s toxicity test methods. The TST statistical approach more reliably identifies toxicity—in relation to the chronic

(0.25 or more) and acute (0.20 or more) mean responses of regulatory management concern—than the NOEC hypothesis-point testing approach used in the Ocean Plan. TST results are also more transparent than the point estimate model approach used for acute toxicity in the Ocean Plan that is not designed to address the question of statistical uncertainty around the modeled toxicity test result in relation to the effect level of concern. The TST is the superior approach for addressing statistical uncertainty when used in combination with USEPA's toxicity test methods and is implemented in federal permits issued by USEPA Region 9.

The TST's null hypothesis for chronic toxicity is:

$H_0$: Mean response (In-stream Waste Concentration (IWC) in % effluent) ≤ mean response (Control).

Results obtained from the chronic toxicity test are analyzed using the TST approach and an acceptable level of chronic toxicity is demonstrated by rejecting the null hypothesis and reporting "Pass" or "P".

The chronic toxicity IWC for Discharge Point 001 is 100/(11.5 + 1) = 8 percent effluent.

**9. Final WQBELs for Discharge Point 001**

A summary of the WQBELs for the combined discharge at Discharge Point 001 are described in the following table:

**Table F-16. Summary of Water Quality-based Effluent Limitations for Discharge Point 001**

| Parameter | Units | Effluent Limitations | | | |
|---|---|---|---|---|---|
| | | 6-Month Median | Daily Maximum | Instantaneous Maximum | 30-day Average |
| Temperature | °F | [1] | | | |
| Beryllium, Total Recoverable | µg/L | -- | -- | -- | 0.41 |
| Cadmium, Total Recoverable | µg/L | 12.5 | 50 | 125 | -- |
| Chromium (VI)[2] | µg/L | 25 | 100 | 250 | -- |
| Lead, Total Recoverable | µg/L | 25 | 100 | 250 | -- |
| Mercury, Total Recoverable | µg/L | 0.49 | 2 | 5 | -- |
| Nickel, Total Recoverable | µg/L | 62.5 | 250 | 625 | -- |
| Selenium, Total Recoverable | µg/L | 188 | 750 | 1875 | -- |
| Silver, Total Recoverable | µg/L | 6.9 | 33 | 86 | -- |
| Chronic Toxicity | Pass or Fail and % Effect | -- | Pass or % Effect <50[3] | -- | Pass[3,4] |
| DDT[5] | µg/L | | -- | -- | 0.00017 |

| Parameter | Units | Effluent Limitations | | | |
|---|---|---|---|---|---|
| | | 6-Month Median | Daily Maximum | Instantaneous Maximum | 30-day Average |
| PCBs[6] | µg/L | [7] | | | |
| Radioactivity | [8] | | | | |

[1] The temperature of wastes discharged shall not exceed 106°F during normal operation of the facility. During heat treatment, the temperature of wastes discharged shall not exceed 125°F except during adjustment of the recirculation gate at which time the temperature of wastes discharged shall not exceed 135°F. Temperature fluctuations during gate adjustment above 125°F shall not last for more than thirty minutes.
[2] The Discharger may at their option meet this effluent limitation as a total chromium effluent limitation.
[3] Report "Pass" or "Fail" for Median Monthly Effluent Limitation (MMEL). Report "Pass" or "Fail" and "% Effect" for Maximum Daily Effluent Limitation (MDEL). During a calendar month, exactly three independent toxicity tests are required for routine monitoring when one toxicity test results in "Fail".
[4] This is a Median Monthly Effluent Limitation.
[5] DDT shall mean the sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD, and 2,4'-DDD.
[6] PCBs shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260.
[7] The Discharge of PCBs that originate from the Facility is prohibited (See Order Prohibitions section IV.A).
[8] Not to exceed limits specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30253 of the California Code of Regulations. Reference to Section 30253 is prospective, including future changes to any incorporated provisions of federal law, as the changes take effect.

### 10. Determining the Need for WQBELs for Discharge Point 002

**c.** Discharge Point 002 is located in King Harbor and is subject to permitting procedures contained in the State Implementation Plan (SIP). In accordance with section 1.3 of the SIP, the Regional Water Board conducts a Reasonable Potential Analysis (RPA) for each priority pollutant with an applicable criterion or objective to determine if a WQBEL is required in the permit. The Regional Water Board analyzes effluent and receiving water data and identifies the maximum observed effluent concentration (MEC) and maximum background concentration (B) in the receiving water for each constituent. To determine reasonable potential, the MEC and the B are then compared with the applicable water quality objectives (C) outlined in the CTR, NTR, as well as the Basin Plan. For all pollutants that have a reasonable potential to cause or contribute to an excursion above a state water quality standard, numeric WQBELs are required. To conduct the RPA, the Regional Water Board identifies the MEC and maximum background concentration in the receiving water for each constituent, based on data provided by the Discharger.

Section 1.3 specifies three triggers to complete a RPA:

Trigger 1 – If the MEC ≥ C, a limit is needed.

Trigger 2 – If B > C and the pollutant is detected in the effluent, a limit is needed.

Trigger 3 – If other related information such as CWA 303(d) listing for a pollutant, discharge type, compliance history, etc. indicates that a WQBEL is required.

Sufficient effluent and receiving water data are needed to conduct a complete RPA. If data are not sufficient, the Discharger will be required to gather the appropriate data for the Regional Water Board to conduct the RPA. Upon review of the data, and if the Regional Water Board determines that WQBELs are needed to protect the beneficial uses, the permit will be reopened for appropriate modification.

Effluent data for Discharge Point 002 submitted to the Regional Water Board from November, 2010 through November, 2015 were used for the RPA. The discharger

was not required to monitor the receiving water column for priority pollutants and as a result did not collect such data. Receiving water data from King Harbor was available from SMR data submitted by a nearby permitted facility-Seaside Lagoon (NPDES No. CA0064297). The date range of Seaside Lagoon data corresponded to the date range for the Facility effluent data.

**d. Assimilative Capacity and Dilution Credit**

Order No. 00-085 established a dilution credit for the discharges from Facility based on the policies and procedures contained in the Ocean Plan as last amended in 2012. However, as discussed in section II.B of this Fact Sheet, the receiving water is no longer categorized as an ocean discharge and is now regulated as an inland surface water. The dilution credit determined for the Facility under the Ocean Plan is no longer applicable, instead dilution shall be determined based on the policies and procedures contained in the SIP.

Insufficient information is available to assess the appropriateness of establishing dilution credit in relation to requirements in the SIP; therefore, this Order has established WQBELs on the assumption of zero assimilative capacity. The impact of assuming zero assimilative capacity within the receiving water is that discharge limitations are end-of-pipe limits with no allowance for dilution within the receiving water.

**e. RPA Results for Discharge Point 002**

The RPA was performed for the priority pollutants included in the Basin Plan and the CTR criteria for which data are available. Based on the RPA, pollutants that demonstrate reasonable potential are copper, mercury, nickel, silver, thallium, and zinc. These parameters resulted in Trigger 1 reasonable potential because the MEC was greater than C. Effluent limitations contained in Order No. 00-085 for pollutants which do not display reasonable potential are not retained in this Order. Therefore the prior order effluent limitations for arsenic, cadmium, hexavalent chromium, lead and selenium are not included in this Order (see section IV.D.1 for further discussion of compliance with anti-backsliding requirements).

The reasonable potential analysis for ammonia was performed based on water quality objectives applicable to the receiving water contained in the Basin Plan. Consistent with procedures contained in the Basin Plan, the water quality objectives for ammonia were converted to total ammonia concentrations (i.e., ammonia plus ammonium concentrations) utilizing receiving water pH, temperature, and salinity data from receiving water monitoring station RSW-003 in King Harbor. Higher pH and temperature and lower salinity result in a higher percentage of unionized ammonia ergo, a lower concentration. The 90$^{th}$ percentile pH and temperature, and the 10$^{th}$ percentile salinity were selected to convert the acute unionized ammonia objective to a total ammonia concentration. The 50$^{th}$ percentile pH, temperature, and salinity were selected to convert the chronic ammonia objective to total ammonia concentration. Total ammonia in the effluent from Discharge Point 002 did not demonstrate reasonable potential and ammonia effluent limitations are not required.

The Regional Water Board has determined that total residual chlorine and chronic toxicity demonstrate reasonable potential based on Step 7 of the RPA which states that other information may be used to determine if a WQBEL is required. The discharge is subject to TBELs resulting from ELGs for total residual chlorine. Permitting procedures in the EPA "*NPDES Permit Writers Manual*" require comparing the WQBEL to the TBEL and applying the more stringent limit. This step

ensures that any TBELs applied as limits would not allow for an exceedance of a water quality objective. In regard to chronic toxicity, information which may be considered under Step 7 includes consideration of the potential toxic impact of the discharge. The large volume of chlorinated discharge warrants inclusion of a chronic toxicity WQBEL. Therefore, consistent with Step 7 of the SIP, the Regional Water Board has determined that the discharge demonstrates reasonable potential to cause or contribute to an exceedance of water quality standards for chlorine and chronic toxicity in the receiving water. Effluent limitations for these pollutants are retained in this Order.

The following table summarizes results from the RPA at Discharge Point 002.

**Table F-17. Reasonable Potential Analysis (RPA) Results Summary for Discharge Point 002**

| CTR No. | Constituent | Units | Applicable Water Quality Criteria (C) | Maximum Effluent Conc. (MEC) | Maximum Detected Receiving Water Conc. (B) | RPA Result - Need Limit? | Reason[1] |
|---|---|---|---|---|---|---|---|
| -- | Ammonia Nitrogen, Total (as N) | µg/L | 1.4 | 0.17 | NA | No | MEC<C |
| 1 | Antimony | µg/L | 4,300 | 7.61 | 32.96 | No | MEC<C |
| 2 | Arsenic | µg/L | 36 | 27.6 | 19 | No | MEC<C |
| 3 | Beryllium | µg/L | No Criteria | 19.2 | <0.03 | No | No Criteria |
| 4 | Cadmium | µg/L | 9.36 | 0.0877 | <0.01 | No | MEC<C |
| 5a | Chromium III | µg/L | No Criteria | 11.5 | No Data | No | No Criteria |
| 5b | Chromium (VI) | µg/L | 50 | <0.67 | 3 | No | MEC<C |
| 6 | Copper | µg/L | 3.7 | 42.2 | 32.46 | **Yes** | **Trigger 1** |
| 7 | Lead | µg/L | 8.52 | 1.12 | <0.2 | No | MEC<C |
| 8 | Mercury | µg/L | 0.051 | 0.068 | 0.082 | **Yes** | **Trigger 1** |
| 9 | Nickel | µg/L | 8.3 | 27.1 | 5 | **Yes** | **Trigger 1** |
| 10 | Selenium | µg/L | 71 | <0.347 | 318 | No | MEC<C |
| 11 | Silver | µg/L | 2.2 | 3.7 | 27 | **Yes** | **Trigger 1** |
| 12 | Thallium | µg/L | 6.3 | 9.02 | <0.1 | **Yes** | **Trigger 1** |
| 13 | Zinc | µg/L | 86 | 133 | 963 | **Yes** | **Trigger 1** |
| -- | Chronic Toxicity | $TU_c$ | 1 | 1 | NA | **Yes** | **Trigger 3** |

NA = not available
[1] Section 1.3 of the SIP specifies three triggers to complete an RPA:
Trigger 1 – If the MEC ≥ C, a limit is needed.
Trigger 2 – If B > C and the pollutant is detected in the effluent, a limit is needed.
Trigger 3 – If other related information such as CWA 303(d) listing for a pollutant, discharge type, compliance history, etc. indicates that a WQBEL is required.

**11. WQBEL Calculations for Discharge Point 002**

**a.** If reasonable potential exists to exceed applicable water quality criteria or objectives, then a WQBEL must be established in accordance with one or more of the three procedures contained in section 1.4 of the SIP. These procedures include:

**i.** If applicable and available, use the WLA established as part of a TMDL.

**ii.** Use of a steady-state model to derive MDELs and AMELs.

**iii.** Where sufficient effluent and receiving water data exist, use of a dynamic model, which has been approved by the Regional Water Board.

**b.** The final WQBELs for copper, mercury, nickel, silver and thallium are based on monitoring results and following the procedure based on the steady-state model, available in Section 1.4 of the SIP.

**c.** Insufficient information is available to assess the appropriateness of establishing dilution credit in relation to requirements in the SIP; therefore, this Order has established WQBELs on the assumption of zero assimilative capacity. However, in accordance with the reopener provision in Section VI.C.1.e, this Order may be reopened upon the submission by the Discharger of adequate information to establish appropriate dilution credits or a mixing zone, as determined by the Regional Water Board.

**d.** <u>WQBEL Calculation Example for Discharge Point 002</u>

Using nickel as an example, the following demonstrates how WQBELs were established for this Order. The tables in Attachment J summarize the development and calculation of all WQBELs at Discharger Point 002 for this Order using the process described below.

The process for developing these limits is in accordance with Section 1.4 of the SIP and also with the *Santa Monica Bay Total Maximum Daily Loads for DDT and PCBs*.

*Calculation of aquatic life AMEL and MDEL*:

**Step 1:** For each constituent requiring an effluent limit, identify the applicable water quality criteria or objective. For each criterion, determine the effluent concentration allowance (ECA) using the following steady state equation:

$ECA = C + D(C-B)$ when $C > B$, and

$ECA = C$ when $C \leq B$,

Where

C = The priority pollutant criterion/objective, adjusted if necessary for hardness, pH and translators.

D = The dilution credit, and

B = The ambient background concentration

As discussed above, this Order does not allow dilution; therefore

$ECA = C$

For nickel, the applicable water quality criteria are:

$ECA = WLA_{acute} = 75\ \mu g/L$

$ECA = WLA_{chronic} = 8.3\ \mu g/L$

Note that when a WLA has been established through a TMDL for a parameter, the WLA is set equal to the ECA. For example, the ECA for DDT was set to the WLA from the *Santa Monica Bay Total Maximum Daily Loads for DDT and PCBs* (0.00017 µg/L).

**Step 2:** For each ECA based on aquatic life criterion/objective, determine the long-term average discharge condition (LTA) by multiplying the ECA by a factor (multiplier). The multiplier is a statistically based factor that adjusts the ECA to account for effluent variability. The value of the multiplier varies depending on the coefficient of variation (CV) of the data set and whether it is an acute or chronic criterion/objective. Table 1 of the SIP provides pre-calculated values for the multipliers based on the value of the CV. Equations to develop the multipliers in place of using values in the tables are provided in section 1.4, Step 3 of the SIP and will not be repeated here.

$LTA_{acute} = ECA_{acute} \times Multiplier_{acute\ 99}$

$LTA_{chronic} = ECA_{chronic} \times Multiplier_{chronic\ 99}$

The CV for the data set must be determined before the multipliers can be selected and will vary depending on the number of samples and the standard deviation of a data set. If the data set is less than 10 samples, or at least 80% of the samples in the data set are reported as non-detect, the CV shall be set equal to 0.6. If the data set is greater than 10 samples, and at least 20% of all the samples in the data set are reported as detected, the CV shall be equal to the standard deviation (σ) of the data set divided by the average of the data set. For nickel there were 13 samples and 11 were reported as detected, therefore a calculated CV applies. For effluent data points below the detection limit, a value of one-half of the detection limit was used in the calculations per SIP instructions. For nickel the calculated average was 8.52 with a σ value of 10.75. Therefore the CV was determined as follows:

$CV = \sigma/average = 10.75/8.52 = 1.26$

For nickel, the following data were used to develop the acute and chronic LTAs using equations provided in section 1.4, Step 3 of the SIP (Table 1 of the SIP also provides this data up to three decimals):

| No. of Samples | CV | ECA $Multiplier_{acute}$ | ECA $Multiplier_{chronic}$ |
|---|---|---|---|
| 13 | 1.26 | 0.166 | 0.307 |

$LTA_{acute} = 75\ \mu g/L \times 0.166 = 12.4\ \mu g/L$

$LTA_{chronic} = 8.3\ \mu g/L \times 0.307 = 2.55\ \mu g/L$

**Step 3:** Select the most limiting (lowest) of the LTA.

$LTA$ = most limiting of $LTA_{acute}$ or $LTA_{chronic}$

For nickel, the most limiting LTA was the $LTA_{chronic}$

$LTA_{selenium} = LTA_{chronic} = 2.55\ \mu g/L$

**Step 4:** Calculate the WQBELs by multiplying the LTA by a factor (multiplier). WQBELs are expressed as Maximum Daily Effluent Limit (MDEL) or Average Monthly Effluent Limit (AMEL). The multiplier is a statistically based factor that adjusts the LTA for the averaging periods and exceedance frequencies of the criteria/objectives and the effluent limitations. The value of the multiplier varies depending on the probability basis, the CV of the data set, the number of samples (for AMEL) and whether it is a monthly average or daily maximum limit. Table 2 of the SIP provides pre-calculated values for the multipliers based on the value of the CV and the number of samples. Equations to develop the multipliers are provided in section 1.4, Step 5 of the SIP and will not be repeated here.

$MDEL_{aquatic\ life} = LTA \times MDEL_{multiplier\ 99}$

For nickel the following data were used to develop the MDEL using equations provided in section 1.4, Step 5 of the SIP:

| No. of Samples | CV | $Multiplier_{MDEL99}$ | $Multiplier_{AMEL95}$ |
|---|---|---|---|
| 4 | 1.26 | 6.02 | 2.19 |

AMEL= 2.55 µg/L x 2.19 = 5.6 µg/L

MDEL= 2.55 µg/L x 6.02 = 15 µg/L

**Step 5:** For the ECA based on human health, set the AMEL equal to the $ECA_{human\ health}$

$AMEL_{human\ health} = ECA_{human\ health}$

For nickel:

$AMEL_{human\ health}$ = 4,600 µg/L

**Step 6:** Calculate the MDEL for human health by multiplying the AMEL by the ratio of $Multipler_{MDEL}$ to the $Multiplier_{AMEL}$. Table 2 of the SIP provides pre-calculated ratios to be used in this calculation based on the CV and the number of samples.

$MDEL_{human\ health} = AMEL_{human\ health} \times (Multiplier_{MDEL} / Multiplier_{AMEL})$

For nickel, the following data were used to develop the $MDEL_{human\ health}$:

| No. of Samples | CV | $Multiplier_{MDEL\ 99}$ | $Multiplier_{AMEL\ 95}$ | Ratio |
|---|---|---|---|---|
| 4 | 1.26 | 6.02 | 2.19 | 2.74 |

For nickel:

$MDEL_{human\ health}$= 4,600 µg/L x 2.74 = 12,604 µg/L

**Step 7:** Select the lower of the AMEL and MDEL based on aquatic life and human health as the WQBEL for the Order. For nickel the AMEL and MDEL for aquatic life apply.

**12. WQBELs at Discharge Point 002 Based on Basin Plan Objectives**

**a. pH.** Instantaneous maximum and minimum effluent limitations for pH based on Basin Plan objectives (6.5 – 8.5) are more stringent than pH limitations based on applicable ELGs (6.0 – 9.0; see Section IV.B of the Fact Sheet). This Order establishes the more stringent limitations based on Basin Plan objectives.

**b. Bacteria.** The Basin Plan establishes water quality objectives for bacteria in receiving waters designated for water contact recreation (REC-1) that are applicable to the discharge from this Facility. As the discharge is to King Harbor, the following water quality objectives for marine waters apply:

**i.** *Geometric Mean Limits*

(a) *Total coliform density shall not exceed 1,000/100 ml.*

(b) *Fecal coliform density shall not exceed 200/100 ml.*

(c) *Enterococcus shall not exceed 35/100 ml.*

**ii.** *Single Sample Limits*

(a) *Total coliform density shall not exceed 10,000/100 ml.*

(b) *Fecal coliform density shall not exceed 400/100 ml.*

(c) *Enterococcus shall not exceed 104/100 ml.*

(d) *Total coliform density shall not exceed 1,000/100 ml, if the ratio of fecal-to-total coliform exceeds 0.1.*

This Order includes bacterial monitoring in order to confirm that the discharge is not contributing to bacterial impairment in the receiving water. In addition, this Order contains receiving water limitations for bacteria to ensure that the discharge is not contributing to an impairment of the receiving water environment**.**

**c. Ammonia.** A reasonable potential analysis was performed for ammonia at Discharge Point 002. The Basin Plan objective for ammonia was translated from unionized to total ammonia as described in this Fact Sheet section IV.C.6.c. The effluent did not demonstrate reasonable potential to exceed the Basin Plan objective and effluent limitations are not required.

**d. Dissolved Oxygen.** This Order addresses dissolved oxygen through receiving water limitations.

**e. Total Residual Chlorine.** Disinfection of wastewaters with chlorine produces residual chlorine. Chlorine and its reaction products are toxic to aquatic life. The limit for residual chlorine is based on the Basin Plan (page 3-9) narrative, "*Chlorine residual shall not be present in surface water discharges at concentrations that exceed 0.1 mg/L and shall not persist in receiving waters at any concentration that causes impairment of beneficial uses.*" As discussed in Section IV.B of the Fact Sheet, TBELs for total residual chlorine are applicable to the combined discharge at Discharge Point 002. However, the applicable TBEL is less stringent than the WQBEL of 0.1 mg/L based on the water quality objective contained in the Basin Plan. Therefore, this Order establishes the more stringent total residual chlorine effluent limitation based on Basin Plan objectives.

**f. Radioactivity.** Order 00-082 included effluent limitations specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30269 of the

California Code of Regulations. These limitations were based on requirements of the Ocean Plan. These limitations have not been retained in this Order for Discharge Point 002 due to the recategorization of the discharge from a marine discharge to an enclosed bay discharge. The Basin Plan states that "Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life." Therefore, this Order establishes the Basin Plan narrative effluent limitation for radionuclides for Discharge Point 002.

**g. Temperature.** The Basin Plan lists temperature requirements for the receiving waters and references the Thermal Plan. Based on the requirements of the Thermal Plan and a white paper developed by Regional Water Board staff entitled *Temperature and Dissolved Oxygen Impacts on Biota in Tidal Estuaries and Enclosed Bays in the Los Angeles Region*, a maximum effluent temperature limitation of 86°F is included in this Order. The white paper evaluated the optimum temperatures for aquatic species routinely available in surface water bodies within the Los Angeles Region including: steelhead, topsmelt, ghost shrimp, brown rock crab, jackknife clam, and blue mussel.

The Facility discharges once-through cooling water, process wastewater and storm water through Discharge Point 002 to King Harbor. As a result of the reclassification of Discharge Point 002 to an inland surface discharge the Thermal Plan water quality objective for existing coastal water dischargers no longer applies. Definition 10 of the Thermal Plan states that any discharge which was taking place prior to the adoption of the plan is considered an existing discharge. The Facility was built and placed into service by Southern California Edison prior to the adoption of the Thermal Plan, and is therefore considered an existing discharge. Water Quality Objective 4A of the Thermal Plan is applicable to existing thermal discharges to the enclosed bays of California and therefore applicable to discharges from the Facility through Discharge Point 002:

*4A(1) Elevated temperature waste discharges shall comply with limitations necessary to assure protection of beneficial uses.*

In compliance with the Thermal Plan and in accordance with Regional Water Board specifications, this Order establishes an instantaneous maximum effluent limitation for temperature of 86°F for discharges from the Facility through Discharge Point 002.

**13. Whole Effluent Toxicity**

Whole effluent toxicity (WET) protects the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. WET tests measure the degree of response of exposed aquatic test organisms to an effluent. The WET approach allows for protection of the narrative "no toxics in toxic amounts" criterion while implementing numeric criteria for toxicity. There are two types of WET tests: acute and chronic. An acute toxicity test is conducted over a short time period and measures mortality. A chronic toxicity test is conducted over a longer period of time and may measure mortality, reproduction, and growth.

The Basin Plan specifies a narrative objective for toxicity, requiring that all waters be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental responses in aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator

species, and/or significant alterations in population, community ecology, or receiving water biota.

Order No. 00-085 contained a maximum daily effluent limitations for chronic toxicity of 8.0 $TU_c$ at Discharge Point 002. The Regional Water Board has determined that chronic toxicity demonstrates reasonable potential based on Step 7 of the RPA procedure described in the SIP which states that other information may be considered to determine whether a WQBEL is needed. Such information includes, among other aspects, the facility type, the discharge type, and the potential toxic impacts of the discharge. The Facility discharges large volumes of chlorinated water, such that slight instances of toxicity may potentially result in widespread impacts. A chronic toxicity effluent limitation is included in this Order to ensure that the receiving water meets the Basin Plan narrative water quality objective for toxicity.

The USEPA Regions 8, 9 and 10 Toxicity Training Tool (January 2010) (Toxicity Tool) recommends that permitting authorities establish a monthly median effluent limit (MML) of 1.0 $TU_c$ as the monthly compliance level for chronic WET for NPDES dischargers without a mixing zone or dilution allowance (Section 2.6.2). The use of the MML of 1.0 $TU_c$ for chronic WET is recommended only in conjunction with the following permit conditions as defined in the USEPA's Technical Support Document For Water Quality-based Toxics Control (March 1991) (TSD):

- A statistically calculated maximum daily effluent limit (MDL) for chronic WET (TSD Section 5.4.1); and
- Routine WET monitoring using the most sensitive test species identified through screening using species representing three different phyla (TSD Section 1.3.4).

This Order establishes a MMEL of "Pass", as the monthly chronic toxicity effluent limit, and a MDEL of "Pass" or "% Effect <50", as the daily chronic toxicity effluent limit. While the chronic toxicity TMDL uses USEPA's multi-concentration NOEC-LOEC statistical approach and recommended numeric water quality criterion of 1.0 TUc to set and measure the toxicity target, the numeric chronic toxicity effluent limits use USEPA's TST statistical approach. Both of these approaches are scientifically valid and provide comparable levels of water quality protection. However, the TST approach is superior in that it improves test power, provides the incentive for toxicity laboratories to generate high quality data, streamlines toxicity test data analysis, and is more likely to correctly classify toxic and not toxic samples (USEPA, 2010; Diamond et al, 2013). The TST statistical approach derives from and complies with the underlying water quality standard for chronic toxicity in the Basin Plan, and is consistent with the assumptions and requirements of the available final WLA for chronic toxicity approved by USEPA (40 C.F.R. 122.44(d)(1)(vii)). These effluent limits are feasible and fully comply with applicable NPDES regulations (e.g., 40 C.F.R. 122.44(d)(1) and 122.45(d)(1)). The routine WET monitoring requirements have been established in Section V.B of Attachment E – Monitoring and Reporting Requirements of this Order.

### 14. Final WQBELs for Discharge Point 002

A summary of the WQBELs for the combined discharge at Discharge Point 002 are described in the following table.

**Table F-18. Summary of Water Quality-based Effluent Limitations for Discharge Point 002**

| Parameter | Units | Effluent Limitations | | | |
|---|---|---|---|---|---|
| | | Average Monthly | Maximum Daily | Instantaneous | |
| | | | | Minimum | Maximum |
| pH | standard units | -- | -- | 6.5 | 8.5 |
| Total Residual Chlorine[1,2] | mg/L | -- | 0.1 | -- | -- |
| Temperature | °F | -- | -- | -- | 86 |
| Copper, Total Recoverable | µg/L | 2.1 | 5.8 | -- | -- |
| Mercury, Total Recoverable | µg/L | 0.051 | 0.10 | -- | -- |
| Nickel, Total Recoverable | µg/L | 5.6 | 15 | -- | -- |
| Silver, Total Recoverable | µg/L | 1.1 | 2.2 | -- | -- |
| Thallium, Total Recoverable | µg/L | 6.3 | 13 | -- | -- |
| Zinc, Total Recoverable | µg/L | 30 | 92 | -- | -- |
| DDT[3] | µg/L | 0.00017 | 0.00034 | -- | -- |
| PCBs[4] | µg/L | [5] | | | |
| Chronic Toxicity | Pass or Fail and % Effect for TST approach | Pass[6,7] | Pass or % Effect <50[7] | -- | -- |
| Radioactivity | -- | [9] | | | |

1 Total residual chlorine and free available chlorine may not be discharged from any single generating unit for more than two hours per day unless the Discharger demonstrates to the permitting authority that discharge for more than two hours per day is required for macroinvertebrate control.
2 If other oxidants are used, this shall be the total of all oxidants reported as residual chlorine.
3 DDT shall mean the sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD, and 2,4'-DDD.
4 PCBs shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260.
5 The Discharge of PCBs that originate from the Facility is prohibited (See Order Prohibitions section IV.A).
6 Report "Pass" or "Fail" for Median Monthly Effluent Limitation (MMEL). Report "Pass" or "Fail" and "% Effect" for Maximum Daily Effluent Limitation (MDEL). During a calendar month, exactly three independent toxicity tests are required for routine monitoring when one toxicity test results in "Fail".
7 This is a Median Monthly Effluent Limitation.
8 Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.

## D. Final Effluent Limitation Considerations

### 1. Anti-Backsliding Requirements

Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. The effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, with the exception of those discussed below.

#### a. Discharge Point 001

The effluent limitations from Order No. 00-085 for arsenic, copper and zinc have been removed in this Order for Discharge Point 001. The removal of these effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations, based on the consideration of new information obtained since the prior permit was issued [CWA section 402(o)(2)(B)(i)]. New information obtained includes data from self-monitoring reports that were used to conduct a new reasonable potential analysis (RPA). The result of the RPA was that reasonable potential to cause or contribute to an excursion above water quality objectives was not demonstrated for these pollutants. This resulted in the removal of effluent limitations for these pollutants. As addressed in section IV.D.2 of this Fact Sheet, relaxation of these effluent limitations is not expected to result in degradation of the receiving water and therefore is consistent with CWA section 303(d)(4).

The ELGs (average and maximum limitations) as specified in 40 C.F.R. part 423 for free available chlorine and total residual chlorine were included in Order No. 00-085 as 30-day average and daily maximum limitations. As explained in section IV.B.3 of this Fact Sheet, this Order instead implements the average and maximum limitations for free available chlorine and total residual chlorine as average concentration effluent limitations and instantaneous maximum limitations, to be consistent with 40 C.F.R. section 423.11 and the 2013 EPA document (EPA-821-R-13-002). Therefore, the limitations for these parameters are consistent with anti-backsliding requirements and are at least as stringent as those in Order No. 00-085.

#### b. Discharge Point 002

The effluent limitations from Order No. 00-085 for arsenic, cadmium, chromium (VI), lead and selenium have been removed in this Order for Discharge Point 002. New information obtained was used to conduct a RPA. The result was that reasonable potential to cause or contribute to an excursion above water quality objectives was not demonstrated for these constituents. This resulted in the removal of effluent limitations for these constituents.

#### c. Metal Cleaning Wastes

The effluent limitations from Order No. 00-085 for suspended solids, oil and grease, copper and iron have been removed in this Order for metal cleaning wastes. The removal of these effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations, based on the consideration of new information obtained since the prior permit was issued [CWA section 402(o)(2)(B)(i)]. New information obtained includes testimony from the Discharger that the discharge of metal cleaning wastes has ceased and these wastes are currently contained and transported offsite to an authorized waste facility. This resulted in the removal of effluent limitations for these pollutants. As addressed in

section IV.D.2 of this Fact Sheet, relaxation of these effluent limitations is not expected to result in degradation of the receiving water given the waste is no longer discharged and therefore is consistent with CWA section 303(d)(4).

**2. Antidegradation Policies**

The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies.

This Order does not provide for an increase in the permitted design flow or allow for a reduction in the level of treatment. The final limitations in this Order meet the requirements of the Ocean Plan at Outfall 001 and of the SIP at Outfall 002 and hold the Discharger to performance levels that will not cause or contribute to water quality impairment. Further, compliance with these requirements will result in the use of best practicable treatment or control of the discharge. Hence, the permitted discharge is consistent with the antidegradation provision of 40 C.F.R.section 131.12 and State Water Board Resolution No. 68-16.

**3. Stringency of Requirements for Individual Pollutants**

This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on PCBs, free available chlorine, total residual chlorine, total suspended solids (TSS), oil and grease, pH, copper (total recoverable) and iron (total recoverable) at Discharge Points 001 and 002. Restrictions on these parameters are discussed in section IV.B.2 of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

This Order includes water quality-based effluent limitations (WQBELs) at Discharge Point 001 for beryllium, cadmium, chromium (VI), copper, lead, mercury, nickel, silver, selenium, zinc, DDT, PCBs and chronic toxicity. WQBELs have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. The procedures for calculating the individual water quality-based effluent limitations at Discharge Point 001 are based on the Ocean Plan, most recently amended, effective August 19, 2013. All beneficial uses and water quality objectives contained in the Ocean Plan were approved under state law and submitted to and approved by U.S. EPA and are applicable water quality standards pursuant to 40 C.F.R. section 131.21(c)(2).

This Order also includes WQBELs at Discharge Point 002 for pH, total residual chlorine, temperature, copper, mercury, nickel, silver, thallium, zinc, DDT, chronic toxicity and radioactivity. WQBELs have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 C.F.R. section 131.38. The scientific procedures for calculating the individual WQBELs for priority pollutants are based on the SIP, which was approved by USEPA on May 18, 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Collectively, this

Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

**4. Intake Credits for Priority Pollutants for Discharge Point 002**

**a.** Effluent Limitations for Priority Pollutants Based on Intake Water Credits

The receiving water for Discharge Point 002 is an inland surface water subject to the provisions of the SIP. Section 1.4.4 of the SIP provides that the Regional Water Board may consider priority pollutants in intake water on a pollutant-by-pollutant and discharge-by-discharge basis when establishing water quality-based effluent limitations, provided that the discharger has demonstrated to the satisfaction of the Regional Water Board that the following conditions are met:

(1) The observed maximum ambient background concentration, as determined in section 1.4.3.1, and the intake water concentration of the pollutant exceeds the most stringent applicable criterion/objective for that pollutant;

(2) The intake water credits provided are consistent with any TMDL applicable to the discharge that has been approved by the Regional Water Board, State Water Board, and USEPA;

(3) The intake water is from the same water body as the receiving water body. The discharger may demonstrate this condition by showing that;

(a) the ambient background concentration of the pollutant in the receiving water, excluding any amount of the pollutant in the facility's discharge, is similar to that of the intake water;

(b) there is a direct hydrological connection between the intake and discharge points;

(c) the water quality characteristics are similar in the intake and receiving waters; and

(d) the intake water pollutant would have reached the vicinity of the discharge point in the receiving water within a reasonable period of time and with the same effect had it not been diverted by the discharger.

The Regional Water Board may also consider other factors when determining whether the intake water is from the same water body as the receiving water body;

(4) The facility does not alter the intake water pollutant chemically or physically in a manner that adversely affects water quality and beneficial uses; and

(5) The timing and location of the discharge does not cause adverse effects on water quality and beneficial uses that would not occur if the intake water pollutant had been left in the receiving water body.

Where the above conditions are met, the Regional Water Board may establish effluent limitations allowing the facility to discharge a mass and concentration of the intake water pollutant that is no greater than the mass and concentration found in the facility's intake water. A discharger may add mass of the pollutant to its waste stream if an equal or greater mass is removed prior to discharge, so there is no net addition of the pollutant in the discharge compared to the intake water. Where proper operation and maintenance of a facility's treatment system results in the removal of an intake water pollutant, the Regional Water Board may establish

limitations that reflect the lower mass and concentration of the pollutant achieved by such treatment.

According to Section 1.4.4 of the SIP, the Regional Water Board may establish effluent limitations allowing the Facility to discharge a mass and concentration of the intake water pollutant that is no greater than the mass and concentration found in the facility's intake water. The Regional Water Board may also determine compliance by simultaneously monitoring the pollutant concentrations in the intake water and in the effluent.

The monthly average intake concentration of a pollutant is calculated by adding all analytical monitoring results in a calendar month divided by the number of monitoring events for that month. If only a single sample is taken during the calendar month then the analytical result for that sample will be considered as the monthly average value or result.

If the influent water pollutant concentration does not exceed the average monthly limitation then the limitations are applied as noted in Footnote 11 of Table F-20 Summary of Final Effluent Limitations Discharge Point 002. If the influent water pollutant concentration exceeds the average monthly limitation but does not exceed the maximum daily limitation then compliance with the average monthly limitation will be determined based on intake water credits and compliance with the maximum daily limitation is applied as noted in Footnote 11 of Table F-20. If the influent water pollutant concentration exceeds the maximum daily limitation then compliance with both the average monthly and the maximum daily will be determined based on intake water credits.

When applying intake water credit, the pollutant effluent limitation is equal to the maximum pollutant concentration in the influent water, which is the same as the intake water. The equation is as follows:

Pollutant effluent limitation with intake water credit = maximum pollutant influent water concentration

Two influent samples shall be collected, one immediately after the other, at approximately the same time as the effluent sample to address the variability of the influent water. When evaluating compliance with the pollutant effluent limitations based on intake water credit, compare the pollutant effluent concentration to the maximum pollutant influent water concentration as follows:

If pollutant effluent concentration > maximum pollutant influent water concentration, then the discharge is in violation of the effluent limitation.

If pollutant effluent concentration ≤ maximum pollutant influent water concentration, then the discharge is in compliance with the maximum daily effluent limitation.

If pollutant monthly average effluent concentration ≤ monthly average pollutant influent concentration, then the discharge is in compliance with the average monthly effluent limitation..

(If only one effluent sample is taken per month, then the monitoring result has to comply with the monthly average limitation based on intake credits).

The potential to use intake credits, when the above criteria are satisfied, has been implemented at Outfall 002 for PCBs, DDT, copper, mercury, nickel, silver, thallium and zinc.

### E. Mass-based Effluent Limitations

Mass-based effluent limitations are established using the following formula:

Mass (lbs/day) = flow rate (MGD) x 8.34 x effluent limitation (mg/L)

where: Mass = mass limitation for a pollutant (lbs/day)

Effluent limitation = concentration limit for a pollutant (mg/L)

Flow rate = discharge flow rate (MGD)

The flow rate is defined as the permitted flow rate from each discharge point as follows:

Discharge Point 001 = 215 MGD

Discharge Point 002 = 674 MGD

### F. Summary of Final Effluent Limitations

**Table F-19. Summary of Final Effluent Limitations for Discharge Point 001**

| Parameter | Units | Effluent Limitations | | | | | Basis[1] |
|---|---|---|---|---|---|---|---|
| | | 6-Month Median | Daily Maximum | Instanta-neous Maximum | 30-day Average | Average Concentration | |
| pH | s.u. | [2] | | | | | OP, PO, ELG |
| Temperature | °F | [3] | | | | | PO, TP |
| Beryllium, Total Recoverable | µg/L | -- | -- | -- | 0.41 | -- | OP |
| | lbs/day[4] | -- | -- | -- | 0.74 | -- | |
| Cadmium, Total Recoverable | µg/L | 12.5 | 50 | 125 | -- | -- | OP, PO |
| | lbs/day[4] | 22 | 90 | 224 | -- | -- | |
| Chromium (VI)[5] | µg/L | 25 | 100 | 250 | -- | -- | OP, PO |
| | lbs/day[4] | 45 | 179 | 448 | -- | -- | |
| Lead, Total Recoverable | µg/L | 25 | 100 | 250 | -- | -- | OP, PO |
| | lbs/day[4] | 45 | 179 | 448 | -- | -- | |
| Mercury, Total Recoverable | µg/L | 0.49 | 2 | 5 | -- | -- | OP, PO |
| | lbs/day[4] | 0.9 | 3.6 | 9.0 | -- | -- | |
| Nickel, Total Recoverable | µg/L | 62.5 | 250 | 625 | -- | -- | OP, PO |
| | lbs/day[4] | 112 | 448 | 1,121 | -- | -- | |
| Selenium, Total Recoverable | µg/L | 188 | 750 | 1875 | -- | -- | OP, PO |
| | lbs/day[4] | 337 | 1,345 | 3,362 | -- | -- | |
| Silver, Total Recoverable | µg/L | 6.9 | 33 | 86 | -- | -- | OP, PO |
| | lbs/day[4] | 12 | 59 | 154 | -- | -- | |
| Chronic Toxicity | Pass or Fail and % Effect | -- | Pass or % Effect <50[7] | -- | Pass[6,7] | -- | OP, PO |
| DDT[8] | µg/L | | -- | -- | 0.00017 | -- | TMDL |
| | lbs/day[4] | -- | -- | -- | 0.0003 | -- | |
| PCBs[9] | µg/L | [10] | | | | | ELG, PO |
| Free Available Chlorine[11,12] | mg/L | -- | -- | 0.5 | -- | 0.2 | ELG, PO |

| Parameter | Units | Effluent Limitations | | | | | Basis[1] |
|---|---|---|---|---|---|---|---|
| | | 6-Month Median | Daily Maximum | Instanta-neous Maximum | 30-day Average | Average Concentration | |
| Total Residual Chlorine[11,12] | mg/L | -- | 0.2 | -- | -- | -- | ELG, PO |
| Radioactivity | [13] | | | | | | |

1 ELG = Effluent Limitations Guidelines and Standards; OP = Ocean Plan; PO = Prior Order; TMDL = Santa Monica Bay Total Maximum Daily Loads for DDTs and PCBs; TP = Thermal Plan

2 The effluent pH shall at all times be within the range of 6.0 to 9.0 pH units.

3 The temperature of wastes discharged shall not exceed 106°F during normal operation of the facility. During heat treatment, the temperature of wastes discharged shall not exceed 125°F except during adjustment of the recirculation gate at which time the temperature of wastes discharged shall not exceed 135°F. Temperature fluctuations during gate adjustment above 125°F shall not last for more than thirty minutes.

4 The mass (lbs/day) limitations are based on the permitted discharge flow for each discharge point (215 MGD for Discharge Point 001) and are calculated as follows:

Mass (lbs/day) = Flow (MGD) x Concentration (mg/L) x 8.34 (conversion factor)

5 The Discharger may at their option meet this effluent limitation as a total chromium effluent limitation.

6 Report "Pass" or "Fail" for Median Monthly Effluent Limitation (MMEL). Report "Pass" or "Fail" and "% Effect" for Maximum Daily Effluent Limitation (MDEL). During a calendar month, exactly three independent toxicity tests are required for routine monitoring when one toxicity test results in "Fail".

7 This is a Median Monthly Effluent Limitation.

8 DDT shall mean the sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD and 2,4'-DDD.

9 PCBs shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260.

10 The Discharge of PCBs that originate from the Facility is prohibited as per 40 C.F.R. section 423.13(a).

11 If other oxidants are used, this shall be the total of all oxidants reported as residual chlorine.

12 Total residual and free available chlorine may not be discharged from any single generating unit for more than two hours per day unless the Discharger demonstrates to the permitting authority that discharge for more than two hours per day is required for macroinvertebrate control.

13 Not to exceed limits specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30253 of the California Code of Regulations. Reference to Section 30253 is prospective, including future changes to any incorporated provisions of federal law, as the changes take effect.

**Table F-20. Summary of Final Effluent Limitations for Discharge Point 002**

| Parameter | Units | Effluent Limitations | | | | Basis[1] |
|---|---|---|---|---|---|---|
| | | Average Monthly | Maximum Daily | Average Concentration | Instantaneous Maximum | |
| pH | S.U. | -- | -- | | 6.5/8.5 | BP |
| Temperature | °F | -- | -- | -- | 86 | BP, TP, PO |
| PCBs[2,11] | µg/L | [3] | | | | ELG, PO |
| Free Available Chlorine[4,5] | mg/L | -- | -- | 0.2 | 0.50 | ELG |
| Total Residual Chlorine[4,5] | mg/L | -- | 0.1 | -- | -- | BP |
| Copper, Total Recoverable[11] | µg/L | 2.1 | 5.8 | -- | -- | CTR, SIP |
| | lbs/day[6] | 12 | 33 | -- | -- | |
| Mercury, Total Recoverable[11] | µg/L | 0.051 | 0.10 | -- | -- | CTR, SIP |
| | lbs/day[6] | 0.29 | 0.56 | -- | -- | |
| Nickel, Total Recoverable[11] | µg/L | 5.6 | 15 | -- | -- | CTR, SIP |
| | lbs/day[6] | 31 | 84 | -- | -- | |
| Silver, Total Recoverable[11] | µg/L | 1.1 | 2.2 | -- | -- | CTR, SIP |
| | lbs/day[6] | 6.2 | 12 | -- | -- | |
| Thallium, Total Recoverable[11] | µg/L | 6.3 | 13 | -- | -- | CTR, SIP |
| | lbs/day[6] | 35 | 73 | -- | -- | |
| Zinc, Total Recoverable[11] | µg/L | 30 | 92 | -- | -- | CTR, SIP |
| | lbs/day[6] | 168 | 517 | -- | -- | |
| DDT[7, 11] | µg/L | 0.00017 | 0.00034 | -- | -- | TMDL, SIP |
| | lbs/day[6] | 0.00096 | 0.0019 | -- | -- | |
| Chronic Toxicity | Pass or Fail and % Effect for TST approach | Pass[8,9] | Pass or % Effect <50[9] | -- | -- | BP |
| Radioactivity | -- | [10] | | | | BP |

[1] BP = Basin Plan; CTR = California Toxics Rule; ELG = Effluent Limitations Guidelines and Standards; PO = Prior Order; SIP = State Implementation Policy; TP = Thermal Plan; TMDL = Santa Monica Bay Total Maximum Daily Loads for DDTs and PCBs

[2] PCBs shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Arolclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260.

[3] The Discharge of PCBs that originate from the Facility is prohibited as per 40 C.F.R. section 423.13(a).

[4] If other oxidants are used, this shall be the total of all oxidants reported as residual chlorine.

[5] Total residual and free available chlorine may not be discharged from any single generating unit for more than two hours per day unless the Discharger demonstrates to the permitting authority that discharge for more than two hours per day is required for macroinvertebrate control.

[6] The mass (lbs/day) limitations are based on the permitted discharge flow for each discharge point (215 MGD for Discharge Point 001 and 674 for Discharge Point 002 and are calculated as follows:

Mass (lbs/day) = Flow (MGD) x Concentration (mg/L) x 8.34 (conversion factor)

[7] DDT shall mean the sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD and 2,4'-DDD.

[8] Report "Pass" or "Fail" for Median Monthly Effluent Limitation (MMEL). Report "Pass" or "Fail" and "% Effect" for Maximum Daily Effluent Limitation (MDEL). During a calendar month, exactly three independent toxicity tests are required for routine monitoring when one toxicity test results in "Fail".

[9] This is a Median Monthly Effluent Limitation.

[10] Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.

[11] If the influent water pollutant concentration (measured at intake for Units 7 and 8) does not exceed the average monthly limitation then the limitations are applied as noted in the Table. If the influent water pollutant concentration exceeds the average monthly limitation but does not exceed the maximum daily limitation then compliance with the average monthly limitation will be determined based on intake water credits and compliance with the maximum daily limitation is applied as noted in the Table. If the influent water pollutant concentration exceeds the maximum daily limitation then compliance with both the average monthly and the maximum daily will be determined based on intake water credits. When determining compliance based on intake water credit, the pollutant effluent limitation is equal to the maximum pollutant concentration in the influent water. The equation is as follows:

Maximum Pollutant Effluent Limitation with Intake Water Credit = Maximum Pollutant Influent Water Concentration
Monthly Pollutant Effluent Limitation with Intake Water Credit = Monthly Pollutant Influent Water Concentration

**Table F-21. Summary of Final Effluent Limitations for Low Volume Wastes—Discharge Point 001**

| Parameter | Units | Effluent Limitations | | | | Basis[1] |
|---|---|---|---|---|---|---|
| | | 30-day Average | Maximum Daily | Instantaneous | | |
| | | | | Minimum | Maximum | |
| ***Effluent Limitations for Low Volume Wastes at Monitoring Location INT-001A*** | | | | | | |
| Total Suspended Solids | mg/L | 30 | 100 | -- | -- | PO, ELG |
| | lbs/day[2] | 223 | 746 | -- | -- | |
| Oil and Grease | mg/L | 15 | 20 | -- | -- | PO, ELG |
| | lbs/day[2] | 111 | 149 | -- | -- | |
| pH | s.u. | -- | -- | 6.0 | 9.0 | PO, ELG |

[1] ELG = Effluent Limitations, Guidelines and Standards; PO = Prior Order

[2] The mass (lbs/day) limitations are based on the permitted discharge flow for each discharge point (0.864 MGD for Low Volume Wastes) and are calculated as follows:

Mass (lbs/day) = Flow (MGD) x Concentration (mg/L) x 8.34 (conversion factor)

Section III.C.8.d of the Ocean Plan states that, due to the large total volume of power plant discharges, special procedures must be applied for determining compliance with Table 1 objectives. Calculated effluent concentration values shall be converted to mass emisssions limitations. The mass emissions limitations shall then serve as requirements applied to all in-plant waste streams taken together which discharge into the cooling water flow, except for total residual chlorine, chronic toxicity and instantaneous maximum concentrations.

This Order, therefore, establishes mass-based effluent limitations for total in-plant waste streams based on the calculated effluent limitations for Discharge Point 001. The total volume of the in-plant waste streams discharging through Discharge Point 001 is 0.1755 million gallons per day (MGD), which includes low volume wastes. The mass-based limitations are summarized in the following table:

**Table F-22. Summary of Mass-based Effluent Limitations for Low Volume Wastes—Discharge Point 001**

| Parameter | Units | Effluent Limitations | | | Basis[1] |
|---|---|---|---|---|---|
| | | 6-Month Median | Daily Maximum | 30-day Average | |
| Beryllium, Total Recoverable | lbs/day[2] | -- | -- | 0.003 | OP |
| Cadmium, Total Recoverable | lbs/day[2] | 0.09 | 0.36 | -- | OP |
| Chromium (VI)[3] | lbs/day[2] | 0.18 | 0.72 | -- | OP |
| Lead, Total Recoverable | lbs/day[2] | 0.18 | 0.72 | -- | OP |
| Mercury, Total Recoverable | lbs/day[2] | 0.0035 | 0.014 | -- | OP |
| Nickel, Total Recoverable | lbs/day[2] | 0.45 | 1.8 | -- | OP |
| Selenium, Total Recoverable | lbs/day[2] | 1.4 | 5.4 | -- | OP |
| Silver, Total Recoverable | lbs/day[2] | 0.05 | 0.24 | -- | OP |

[1] OP = Ocean Plan

[2] The mass-based limitations are based on a maximum combined flow of 0.864 for all in-plant waste streams and are calculated as follows:

$L_e = C \times Q_m \times 0.00834$ (conversion factor)

Where:

$L_e$ = Mass-based limitation (lbs/day)

C = Concentration-based limitation (µg/L) from Table F-21.

$Q_m$ = 0.864 MGD, the maximum combined flow for all in-plant waste streams

Example for cadmium, 6-month median:

Le = 12.5 x 0.864 x 0.00834 = 0.09 lbs/day

[3] The Discharger may at their option meet this effluent limitation as a total chromium limitation.

## G. Interim Effluent Limitations—Not Applicable

## H. Land Discharge Specifications—Not Applicable

## I. Recycling Specifications—Not Applicable

## V. RATIONALE FOR RECEIVING WATER LIMITATIONS

### A. Surface Water

The Basin Plan contains numeric and narrative water quality objectives applicable to all surface waters within the Los Angeles Region. Water quality objectives include an objective to maintain the high quality waters pursuant to federal regulations (40 C.F.R. § 131.12) and State Water Board Resolution No. 68-16. The Ocean Plan contains numeric and narrative water quality objectives applicable to the coastal waters of California. Receiving water limitations in this Order are included to ensure protection of beneficial uses of the receiving waters and are based on the water quality objectives contained in the Basin Plan and Ocean Plan.

### B. Groundwater—Not Applicable

## VI. RATIONALE FOR PROVISIONS

### A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 C.F.R. section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 C.F.R. section 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42.

Sections 122.41(a)(1) and (b) through (n) of 40 C.F.R. establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 C.F.R. section 123.25, this Order omits federal conditions that address enforcement authority specified in 40 C.F.R. sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

### B. Special Provisions

#### 1. Reopener Provisions

These provisions are based on 40 C.F.R. section 123 and the prior Order. The Regional Water Board may reopen the permit to modify permit conditions and requirements. Causes for modifications include the promulgation of new federal regulations, modification in toxicity requirements, or adoption of new regulations by the State Water Board or Regional Water Board, including revisions to the Basin Plan.

#### 2. Special Studies and Additional Monitoring Requirements

a. **Initial Investigation Toxicity Reduction Evaluation Workplan.** This provision is based on section 4 of the SIP, Toxicity Control Provisions, which establishes minimum toxicity control requirements for implementing the narrative toxicity objective for aquatic life protection established in the basin plans of the State of California or the OTC policy.

b. **Mixing Zone Study Workplan.** The dilution ratio of 11.5:1 (receiving water to effluent) established in Order No. 00-085 is retained in this Order for Discharge Point 001 which discharges to the ocean. The Facility will cease discharges from Discharge Point 001 by December 31, 2020 as per the OTC Policy. If discharges will continue past that date, the Discharger must provide advanced notification to the

Regional Water Board, as well as a work plan to timely complete a mixing zone study. The study shall identify the boundary of the zone of initial dilution (ZID) based on modeling results, and include monitoring upstream of the discharge point, directly above the discharge location, at the boundary of the ZID and outside the ZID for the list of constituents included in Table 1 of the Ocean Plan, to confirm the assumptions made by the model.

**3. Best Management Practices and Pollution Prevention**

**a. Storm Water Pollution Prevention Plan (SWPPP).** The prior permit required the Discharger to develop and implement a SWPPP. This Order requires the Discharger to update and continue to implement a SWPPP. The SWPPP will outline site-specific management processes for minimizing storm water runoff contamination and for preventing contaminated storm water runoff from being discharged directly into King Harbor. At a minimum, the management practices should ensure that raw materials and chemicals do not come into contact with storm water. SWPPP requirements are included as Attachment G, based on 40 C.F.R. section 122.44(k).

**b. Best Management Practices Plan (BMPP).** This Order requires the Discharger to develop and implement a BMPP. The purpose of the BMPP is to establish site-specific procedures that ensure proper operation and maintenance of equipment, to ensure that unauthorized non-storm water discharges (i.e. spills) do not occur at the Facility.

Special Provision V.C.3.b requires the Discharger to develop, maintain, and implement a BMPP. The BMPP may be included within the SWPPP as a description of best management practices (BMPs). Appendix G requires a discussion on the effectiveness of each BMP to reduce or prevent pollutants in storm water discharges. The Special Provision V.C.3.b and Appendix G requirements satisfy the TMDL component to address BMP performance.

**c. Spill Contingency Plan (SCP**). This Order requires the Discharger to develop and implement a SCP. The SCP shall include a technical report on the preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events at the site. This provision is included in this Order to minimize and control the amount of pollutants discharged in case of a spill. The SCP shall be site specific and shall cover all areas of the Facility.

**4. Construction, Operation, and Maintenance Specifications**

This provision is based on the requirements of 40 C.F.R. section 122.41(e).

**5. Special Provisions for Municipal Facilities (POTWs Only)—Not Applicable**

**6. Other Special Provisions**

**Once-Through Cooling Water Compliance Schedule.** Under Track 1 of the OTC Policy, an existing power plant must reduce the intake flow rate to a level commensurate with closed-cycle wet cooling such that the through-screen intake velocity does not exceed 0.5 foot per second.

Track 2 is available to existing plants that demonstrate that Track 1 is infeasible, and such plants must reduce impingement and entrainment by 90 percent unless the California Independent System Operator, California Energy Commission, or Public Utilities Commission determines there is continued need for the plant, in which event the State Water Board will hold a hearing to consider suspension of the compliance date. In

the interim, the OTC Policy requires plants to implement measures to mitigate impingement and entrainment impacts.

All owners or operators of existing power plants were required to submit an implementation plan identifying the OTC compliance alternative selected by April 1, 2011. The Discharger submitted an implementation plan on April 1, 2011. A revised implementation plan was later submitted on June 17, 2011. Additional implementation information was submitted on March 31, 2013 and November 8, 2013. Per the submitted information, the Discharger has indicated that the proposed mechanism to bring units 5, 6, 7 and 8 into OTC compliance will be via Track 1.

The Track 1 compliance will be completed in two phases and will consist in the construction of a dry-cooled natural gas fired combined cycle gas turbine (CCGT) power block. Compliance with Units 5, 6, 7, and 8 is expected to meet the OTC Policy compliance date of December 31, 2020. This Order requires the Discharger to provide annual progress reports to the Regional Water Board to document the Facility's progress towards compliance with the OTC Policy:

**Table F-23. Progress Update Schedule for Compliance with OTC Policy**

| Task | Progress Report Due Date |
|---|---|
| 1. Submit Workplan for OTC compliance under Track 1 and/or Track 2. | June 1, 2016 |
| 2. Submit first progress Report on compliance actions. | December 31, 2016 |
| 3. Submit second progress Report. | December 31, 2017 |
| 4. Submit third progress Report. | December 31, 2018 |
| 5. Submit fourth progress Report. | December 31, 2019 |
| 6. Achieve full compliance with Units 5, 6, 7 and 8. | December 31, 2020 |

**Immediate and Interim Requirements.** The OTC Policy further requires the immediate and interim requirements:

**a.** As of October 1, 2011, the owner or operator of an existing power plant with an offshore intake shall install large organism exclusion devices having a distance between exclusion bars of no greater that nine inches, or install other exclusion devices, deemed equivalent by the State Water Board.

**b.** As of October 1, 2011, any unit that is not directly engaged in power-generating activities or critical system maintenance shall cease intake flows unless it has been demonstrated to the State Water Board that a reduced minimum flow is necessary for operations.

**c.** Commencing on October 1, 2015 and continuing up and until achieving final compliance with the OTC Policy, the owner or operator of the existing power plant must implement measures to mitigate the interim impingement and entrainment impacts resulting from the discharge.

Per the submitted Implementation plan and subsequent correspondence, the Discharger indicated that the Facility has three ocean water intake structures which are fitted with velocity caps, Units 7 and 8 are supported by one intake structure, and Units 5 and 6 are supported by two intake structures. The Redondo Beach intake structures currently have large organism exclusion devices constructed of fiberglass C-Channels, on the top and bottom of the assemblies with vertical fiberglass rods between the top and bottom assemblies. The existing large organism exclusion devices were installed in the early

1980s and the original spacing of each vertical rod was at 15 inches on centers. However, as of October 1, 2011, additional holes were drilled in the existing fiberglass C-Channels to place new additional fiberglass rods at 7 inches on centers. This installation of additional fiberglass rods has met the requirements of Section 2 (C) 1 of the OTC Policy of having a distance between exclusion bars of no greater than 9 inches.

With regards to intake flows when the generating units are offline and no longer generating power, circulating water pumps at the RBGS are periodically required for safe operation of critical plant systems. These critical plant systems include service air system, generator hydrogen sealing system, and instrument air system. These critical plant systems all require cooling water from the bearing cooling water system, which, over time, will rise in temperature requiring the circulation of cooling water to reduce the temperature of the bearing cooling water. When the Facility is not generating power, circulating water flow for critical plant systems is typically required from 1 to 3 hours per day to reduce bearing cooling water temperature. The amount of time it typically takes for the temperature in the bearing cooling water system to rise, and to be reduced, depends on many factors, including plant configuration, ongoing work or outages, cooling water tank levels, ambient air conditions, and circulating water temperatures. Normally one circulating pump with a capacity of 36,000 GPM is required for up to 3 hours per day for bearing cooling water, however, depending on cooling requirements one of the larger 117,000 GPM pumps may be cycled on to meet the water demands for these critical plant systems. Current and past operating data demonstrate that there are no months when intake flows at the Facility are likely to cease completely. Minimum month flows are typically January through March when power generation is expected to be at a minimum; however, as previously indicated, one 36,000 GPM pump circulating ocean water at the Facility is required for up to 3 hours per day at all times of the year.

With regards to the mitigating measures, the Discharger has indicated that as of October 1, 2015 and until the Facility achieves full OTC compliance, it will provide funding to the Coastal Conservancy to be used for mitigation projects directed toward increases in marine life associated with the State's Marine Protected Areas in the local region of the Facility. The amount to be provided shall be determined by the Deputy Director of the Division of Water Quality of the State Water Board.

**OTC Policy Compliance Update**

As previously discussed, new information provided by the Discharger indicates that the current plan is to permanently retire the Facility between May, 2018 and December, 2020. The Facility is no longer planning to construct new CCGT power blocks and the discharge of OTC water will cease when the Facility is permanently retired.

**7. Compliance Schedules—Not Applicable**

## VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

40 C.F.R. section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP), Attachment E, establishes monitoring and reporting requirements that implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

### A. Influent Monitoring

Section 316(b) of the CWA requires the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact. Cooling water intake monitoring requirements have been retained from the Order 00-085. These monitoring requirements for flow and temperature are necessary to evaluate compliance with effluent limitations contained in this Order and compliance with the requirements of the Thermal Plan. Periodic monitoring of the biological impacts caused by the operation of the intake structure is required to ensure compliance with the determination that the design, construction, and operation of the intake structure to be Best Available Technology Economically Achievable consistent with the OTC Policy, as amended June 18, 2013.

Order 00-085 contained semi-annual monitoring for a variety of metals in the intake water which This Order also includes monthly influent monitoring for the metals with effluent limitations, as well as DDT, PCBs, and bacteria (fecal coliform, total coliform, and enterococcus).

### B. Effluent Monitoring

#### 1. Discharge Point 001

**a.** Monthly monitoring has been established for those pollutants where effluent limitations at Discharge Point 001 have been established in the Order (i.e., pH, temperature, PCBs, free available chlorine, total residual chlorine, beryllium, cadmium, chromium (VI), lead, mercury, nickel, selenium, silver, DDT and radioactivity). This monitoring is necessary to determine compliance with effluent limitations and to provide data for evaluating reasonable potential for the discharge to cause or contribute to an exceedance of applicable water quality objectives during future permit reissuances.

**b.** Revisions to the Ocean Plan that were incorporated into the 2012 Ocean Plan Appendix III include a model monitoring framework for point sources, storm water point sources, and non-point sources. Based on Appendix III, core monitoring, described as basic, site-specific monitoring necessary to measure compliance with individual effluent limits and/or impacts to receiving water quality," is required for Ocean Plan Table 1 constituents. Section 5.1 of Appendix III in the 2012 Ocean Plan specifies a minimum semiannual monitoring frequency for Table 1 pollutants in discharges greater than 10 MGD. Based on the model monitoring framework of the 2012 Ocean Plan, this Order establishes the frequency of monitoring for Table 1 pollutants to semiannually (2/year). Data generated from this monitoring is necessary for evaluating reasonable potential for the discharge to cause or contribute to an exceedance of applicable water quality objectives contained in the Ocean Plan during future permit reissuances.

**c.** Annual monitoring for total coliform, fecal coliform, and *Enterococcus* is established in this Order to assess the impact of bacteria in the discharge on the beneficial uses of the receiving water.

**d.** Compliance with effluent limits must be determined using an approved method under 40 C.F.R. part 136. In the case of PCBs, this is Method 608. Consistent with the Santa Monica Bay Total Maximum Daily Loads for DDT and PCBs (TMDL), this Order also recommends that each Discharger monitor and report PCBs using USEPA's proposed Method 1668c, which is capable of quantifying PCBs that are present at lower levels than Method 608. The Regional Water Board will use data generated by Method 1668c to verify assumptions and evaluate the need to further refine wasteload allocations in the TMDL. The Regional Water Board finds that these monitoring and reporting requirements bear a reasonable relationship to the Regional Water Board's need for and the benefits obtained from the reports.

**e.** Monitoring of the total mass emission of chromium, mercury, and silver for the in-plant waste streams before combining with once-through cooling water flow. Compliance shall be determined by the total mass emission for each parameter reported, calculated as the sum of the mass emissions from the individual in-plant waste streams as measured in INT-001A, utilizing the actual flow rates of the individual in-plant waste streams.

**2. Discharge Point 002**

**a.** Monthly monitoring has been established for those pollutants where effluent limitations at Discharge Point 002 have been established in the Order (i.e., pH, temperature, PCBs, free available chlorine, total residual chlorine, copper, lead, mercury, nickel, silver, thallium, zinc, DDT and radioactivity).

**b.** Monitoring for all priority pollutants not possessing effluent limitations shall be conducted once per year during the permit term.

**c.** Quarterly monitoring for total coliform, fecal coliform, and *Enterococcus* are established in this Order to assess the impact of bacteria in the discharge on the beneficial uses of the receiving water.

**d.** Compliance with effluent limits must be determined using an approved method under 40 C.F.R. part 136. In the case of PCBs, this is Method 608. Consistent with the Santa Monica Bay Total Maximum Daily Loads for DDT and PCBs (TMDL), this Order also recommends that each Discharger to monitor and report PCBs using USEPA's proposed Method 1668c, which is capable of quantifying PCBs that are present at lower levels than Method 608. The Regional Water Board will use data generated by Method 1668c to verify assumptions and evaluate the need to further refine wasteload allocations in the TMDL.

**3. Low Volume Wastes**

Monitoring requirements for low volume wastes included in Order 00-085 have been retained in the MRP (Attachment E). These monitoring requirements are necessary to determine compliance with effluent limitations established in this Order.

**4. Metal Cleaning Wastes**

Monitoring requirements for metal cleaning wastes (both chemical and non-chemical) included in Order 00-085 have not been retained in the MRP (Attachment E). These monitoring requirements are no longer applicable as metal cleaning wastes are no longer discharged to the receiving waters.

### C. Whole Effluent Toxicity Testing Requirements

Chronic toxicity limitations have been established in this Order for Discharge Points 001 and 002. Whole effluent toxicity (WET) testing protects the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. This Order requires annual monitoring for chronic toxicity which is a more stringent measure of the aggregate toxic properties of the discharge than acute toxicity. For this permit, chronic toxicity in the discharge is limited and evaluated using USEPA's 2010 TST statistical approach.

### D. Receiving Water Monitoring

#### 1. Surface Water

Monitoring requirements are included in the MRP (Attachment E) to determine compliance with the receiving water limitations established in Limitations and Discharge Requirements, Receiving Water Limitations, Section V.A. Receiving water monitoring requirements included Order 00-085 have been retained without modification.

Annual monitoring for ammonia, pH, salinity, dissolved oxygen, temperature, chronic toxicity and priority pollutants in the receiving water has been established in this order.

#### 2. Visual Monitoring of Receiving Water Sampling Point

The Discharger is required to perform general observations of the receiving water when discharges occur and report the observations in the monitoring report. Attention shall be given to the presence or absence of floating or suspended matter, discoloration, aquatic life, visible film, sheen or coating, and fungi, slime, or objectionable growths.

#### 3. Groundwater—Not Applicable

### E. Other Monitoring Requirements

Monitoring during the discharge of calcareous material has been retained from Order 00-085. This monitoring is necessary to evaluate the effect of the discharge on the beneficial uses of the receiving water.

## VIII. PUBLIC PARTICIPATION

The Regional Water Board has considered the issuance of WDRs that will serve as an NPDES permit for the Redondo Beach Generating Station. As a step in the WDR adoption process, Regional Water Board staff has developed tentative WDRs and has encouraged public participation in the WDR adoption process.

### A. Notification of Interested Parties

The Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through email and public notice.

The public had access to the agenda and any changes in dates and locations through the Regional Water Board's website: http://www.waterboards.ca.gov/losangeles.

### B. Written Comments

Interested parties were invited to submit written comments concerning the tentative WDRs as provided through the notification process. Comments were required to be submitted either in person or by mail to the Executive Office at the Regional Water Board at 320 West 4th Street, Suite 200, Los Angeles, CA 90013 or by email to losangeles@waterboards.ca.gov with a copy to thomas.siebels@waterboards.ca.gov.

To be fully responded to by staff and considered by the Regional Water Board, the written comments were due at the Regional Water Board office by 5:00 p.m. on **May 6, 2016**.

### C. Public Hearing

The Regional Water Board held a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

| | |
|---|---|
| Date: | June 9, 2016 |
| Time: | 9:00 AM |
| Location: | The Metropolitan Water District of Southern California Board Room<br>700 North Alameda Street<br>Los Angeles, CA 90012 |

Interested persons were invited to attend. At the public hearing, the Regional Water Board heard testimony pertinent to the discharge, WDRs, and permit. For accuracy of the record, important testimony was requested in writing.

### D. Reconsideration of Waste Discharge Requirements

Any person aggrieved by this action of the Regional Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must *receive* the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

or will be provided upon request.

The State Water Board's mailing address is the following:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

### E. Information and Copying

The Report of Waste Discharge, tentative WDRs, comments received, other information are on file and may be inspected at the Regional Water Board's office at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Viewing and copying of documents may be arranged through the Regional Water Board by calling (213) 576-6600.

### F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference this facility, and provide a name, address, and phone number.

### G. Additional Information

Requests for additional information or questions regarding this order should be directed to Thomas Siebels at (213) 576-6756.

# ATTACHMENT G – STORM WATER POLLUTION PREVENTION PLAN REQUIREMENTS

## I. IMPLEMENTATION SCHEDULE

A storm water pollution prevention plan (SWPPP) shall be developed and submitted to the Regional Water Board within 90 days following the adoption of this Order. The SWPPP shall be implemented for each facility covered by this Permit within 10 days of approval from the Regional Water Board, or no later than 90 days from the date of the submittal of the SWPPP to the Regional Water Board (whichever comes first).

## II. OBJECTIVES

The SWPPP has two major objectives: (a) to identify and evaluate sources of pollutants associated with industrial activities that may affect the quality of storm water discharges and authorized non-storm water discharges from the facility; and (b) to identify and implement site- specific best management practices (BMPs) to reduce or prevent pollutants associated with industrial activities in storm water discharges and authorized non-storm water discharges. BMPs may include a variety of pollution prevention measures or other low-cost and pollution control measures. They are generally categorized as non-structural BMPs (activity schedules, prohibitions of practices, maintenance procedures, and other low-cost measures) and as structural BMPs (treatment measures, run-off controls, over-head coverage.) To achieve these objectives, facility operators should consider the five phase process for SWPPP development and implementation as shown in Table A.

The SWPPP requirements are designed to be sufficiently flexible to meet the needs of various facilities. SWPPP requirements that are not applicable to a facility should not be included in the SWPPP.

A facility's SWPPP is a written document that shall contain a compliance activity schedule, a description of industrial activities and pollutant sources, descriptions of BMPs, drawings, maps, and relevant copies or references of parts of other plans. The SWPPP shall be revised whenever appropriate and shall be readily available for review by facility employees or Regional Water Board inspectors.

## III. PLANNING AND ORGANIZATION

### A. Pollution Prevention Team

The SWPPP shall identify a specific individual or individuals and their positions within the facility organization as members of a storm water pollution prevention team responsible for developing the SWPPP, assisting the facility manager in SWPPP implementation and revision, and conducting all monitoring program activities required in Attachment E of this Permit. The SWPPP shall clearly identify the Permit related responsibilities, duties, and activities of each team member. For small facilities, storm water pollution prevention teams may consist of one individual where appropriate.

### B. Review Other Requirements and Existing Facility Plans

The SWPPP may incorporate or reference the appropriate elements of other regulatory requirements. Facility operators should review all local, State, and Federal requirements that impact, complement, or are consistent with the requirements of this General permit. Facility operators should identify any existing facility plans that contain storm water pollutant control measures or relate to the requirements of this Permit. As examples, facility operators whose facilities are subject to Federal Spill Prevention Control and Countermeasures' requirements should already have instituted a plan to control spills of certain hazardous materials. Similarly,

facility operators whose facilities are subject to air quality related permits and regulations may already have evaluated industrial activities that generate dust or particulates.

## IV. SITE MAP

The SWPPP shall include a site map. The site map shall be provided on an 8-½ x 11 inch or larger sheet and include notes, legends, and other data as appropriate to ensure that the site map is clear and understandable. If necessary, facility operators may provide the required information on multiple site maps.

**TABLE A**
**FIVE PHASES FOR DEVELOPING AND IMPLEMENTING INDUSTRIAL STORM WATER POLLUTION PREVENTION PLANS**

| **PLANNING AND ORGANIZATION** |
|---|
| Form Pollution Prevention Team<br>Review other plans |

| **ASSESSMENT PHASE** |
|---|
| Develop a site map<br>Identify potential pollutant sources<br>Inventory of materials and chemicals<br>List significant spills and leaks<br>Identify non-storm water discharges<br>Assess pollutant risks |

| **BEST MANAGEMENT PRACTICES IDENTIFICATION PHASE** |
|---|
| Non-structural BMPs<br>Structural BMPs<br>Select activity and site-specific BMPs |

| **IMPLEMENTATION PHASE** |
|---|
| Train employees<br>Implement BMPs<br>Conduct recordkeeping and reporting |

| **EVALUATION / MONITORING** |
|---|
| Conduct annual site evaluation<br>Review monitoring information<br>Evaluate BMPs<br>Review and revise SWPPP |

The following information shall be included on the site map:

**A.** The facility boundaries; the outline of all storm water drainage areas within the facility boundaries; portions of the drainage area impacted by run-on from surrounding areas; and direction of flow of each drainage area, on-site surface water bodies, and areas of soil erosion. The map shall also identify nearby water bodies (such as rivers, lakes, and ponds) and municipal storm drain inlets where the facility's storm water discharges and authorized non-storm water discharges may be received.

**B.** The location of the storm water collection and conveyance system, associated points of discharge, and direction of flow. Include any structural control measures that affect storm water discharges, authorized non-storm water discharges, and run-on. Examples of structural control measures are catch basins, berms, detention ponds, secondary containment, oil/water separators, diversion barriers, etc.

**C.** An outline of all impervious areas of the facility, including paved areas, buildings, covered storage areas, or other roofed structures.

**D.** Locations where materials are directly exposed to precipitation and the locations where significant spills or leaks identified in section VI.A.4 below have occurred.

**E.** Areas of industrial activity. This shall include the locations of all storage areas and storage tanks, shipping and receiving areas, fueling areas, vehicle and equipment storage/maintenance areas, material handling and processing areas, waste treatment and disposal areas, dust or particulate generating areas, cleaning and rinsing areas, and other areas of industrial activity which are potential pollutant sources.

## V. LIST OF SIGNIFICANT MATERIALS

The SWPPP shall include a list of significant materials handled and stored at the site. For each material on the list, describe the locations where the material is being stored, received, shipped, and handled, as well as the typical quantities and frequency. Materials shall include raw materials, intermediate products, final or finished products, recycled materials, and waste or disposed materials.

## VI. DESCRIPTION OF POTENTIAL POLLUTANT SOURCES

**A.** The SWPPP shall include a narrative description of the facility's industrial activities, as identified in section IV.E. above, associated potential pollutant sources, and potential pollutants that could be discharged in storm water discharges or authorized non-storm water discharges. At a minimum, the following items related to a facility's industrial activities shall be considered:

1. **Industrial Processes.** Describe each industrial process, the type, characteristics, and quantity of significant materials used in or resulting from the process, and a description of the manufacturing, cleaning, rinsing, recycling, disposal, or other activities related to the process. Where applicable, areas protected by containment structures and the corresponding containment capacity shall be described.

2. **Material Handling and Storage Areas.** Describe each handling and storage area, type, characteristics, and quantity of significant materials handled or stored, description of the shipping, receiving, and loading procedures, and the spill or leak prevention and response procedures. Where applicable, areas protected by containment structures and the corresponding containment capacity shall be described.

3. **Dust and Particulate Generating Activities.** Describe all industrial activities that generate dust or particulates that may be deposited within the facility's boundaries and identify their discharge locations; the characteristics of dust and particulate pollutants; the approximate quantity of dust and particulate pollutants that may be deposited within the facility

boundaries; and a description of the primary areas of the facility where dust and particulate pollutants would settle.

4. **Significant Spills and Leaks.** Describe materials that have spilled or leaked in significant quantities in storm water discharges or authorized non-storm water discharges since April 17, 1994. Include toxic chemicals (listed in 40 Code of Federal Regulations (C.F.R.), part 302) that have been discharged to storm water as reported on U.S. Environmental Protection Agency (USEPA) Form R, and oil and hazardous substances in excess of reportable quantities (see 40 C.F.R., parts 110, 117, and 302).

   The description shall include the type, characteristics, and approximate quantity of the material spilled or leaked, the cleanup or remedial actions that have occurred or are planned, the approximate remaining quantity of materials that may be exposed to storm water or authorized non-storm water discharges, and the preventative measures taken to ensure spill or leaks do not reoccur. Such list shall be updated as appropriate during the term of this Permit.

5. **Non-Storm Water Discharges.** Facility operators shall investigate the facility to identify all non-storm water discharges and their sources. As part of this investigation, all drains (inlets and outlets) shall be evaluated to identify whether they connect to the storm drain system.

   All non-storm water discharges shall be described. This shall include the source, quantity, frequency, and characteristics of the non-storm water discharges and associated drainage area.

   Non-storm water discharges that are not authorized by this Permit, other waste discharge requirements, or other NPDES permits are prohibited. The SWPPP must include BMPs to prevent or reduce contact of authorized non-storm water discharges with significant materials or equipment.

6. **Soil Erosion.** Describe the facility locations where soil erosion may occur as a result of industrial activity, storm water discharges associated with industrial activity, or authorized non-storm water discharges.

**B.** The SWPPP shall include a summary of all areas of industrial activities, potential pollutant sources, and potential pollutants. This information should be summarized similar to Table 1. The last column of Table 1, "Control Practices", should be completed in accordance with section VIII. below.

## VII. ASSESSMENT OF POTENTIAL POLLUTANT SOURCES

**A.** The SWPPP shall include a narrative assessment of all industrial activities and potential pollutant sources as described in section VI.above to determine:

1. Which areas of the facility are likely sources of pollutants in storm water discharges and authorized non-storm water discharges, and

2. Which pollutants are likely to be present in storm water discharges and authorized non-storm water discharges. Facility operators shall consider and evaluate various factors when performing this assessment such as current storm water BMPs; quantities of significant materials handled, produced, stored, or disposed of; likelihood of exposure to storm water or authorized non-storm water discharges; history of spill or leaks; and run-on from outside sources.

**B.** Facility operators shall summarize the areas of the facility that are likely sources of pollutants and the corresponding pollutants that are likely to be present in storm water discharges and authorized non-storm water discharges.

Facility operators are required to develop and implement additional BMPs as appropriate and necessary to prevent or reduce pollutants associated with each pollutant source. The BMPs will be narratively described in section VIII below.

## VIII. STORM WATER BEST MANAGEMENT PRACTICES

The SWPPP shall include a narrative description of the storm water BMPs to be implemented at the facility for each potential pollutant and its source identified in the site assessment phase (sections VI. and VII. above). The BMPs shall be developed and implemented to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Each pollutant and its source may require one or more BMPs. Some BMPs may be implemented for multiple pollutants and their sources, while other BMPs will be implemented for a very specific pollutant and its source.

**TABLE B**

**EXAMPLE**
**ASSESSMENT OF POTENTIAL POLLUTION SOURCES AND CORRESPONDING BEST MANAGEMENT PRACTICES SUMMARY**

| Area | Activity | Pollutant Source | Pollutant | Best Management Practices |
|---|---|---|---|---|
| Vehicle & Equipment Fueling | Fueling | Spills and leaks during delivery.<br><br>Spills caused by topping off fuel tanks.<br><br>Hosing or washing down fuel oil fuel area.<br><br>Leaking storage tanks.<br><br>Rainfall running off fuel oil, and rainfall running onto and off fueling area. | fuel oil | Use spill and overflow protection.<br><br>Minimize run-on of storm water into the fueling area.<br><br>Cover fueling area.<br><br>Use dry cleanup methods rather than hosing down area.<br><br>Implement proper spill prevention control program.<br><br>Implement adequate preventative maintenance program to preventive tank and line leaks.<br><br>Inspect fueling areas regularly to detect problems before they occur.<br><br>Train employees on proper fueling, cleanup, and spill response techniques. |

The description of the BMPs shall identify the BMPs as (1) existing BMPs, (2) existing BMPs to be revised and implemented, or (3) new BMPs to be implemented. The description shall also include a discussion on the effectiveness of each BMP to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. The SWPPP shall provide a summary of all BMPs implemented for each pollutant source. This information should be summarized similar to Table B.

Facility operators shall consider the following BMPs for implementation at the facility:

**A. Non-Structural BMPs**

Non-structural BMPs generally consist of processes, prohibitions, procedures, schedule of activities, etc., that prevent pollutants associated with industrial activity from contacting with storm water discharges and authorized non-storm water discharges. They are considered low technology, cost-effective measures. Facility operators should consider all possible non-structural BMPs options before considering additional structural BMPs (see section VIII.B. below). Below is a list of non-structural BMPs that should be considered:

1. **Good Housekeeping.** Good housekeeping generally consists of practical procedures to maintain a clean and orderly facility.
2. **Preventive Maintenance.** Preventive maintenance includes the regular inspection and maintenance of structural storm water controls (catch basins, oil/water separators, etc.) as well as other facility equipment and systems.
3. **Spill Response.** This includes spill clean-up procedures and necessary clean-up equipment based upon the quantities and locations of significant materials that may spill or leak.
4. **Material Handling and Storage.** This includes all procedures to minimize the potential for spills and leaks and to minimize exposure of significant materials to storm water and authorized non-storm water discharges.
5. **Employee Training.** This includes training of personnel who are responsible for (1) implementing activities identified in the SWPPP, (2) conducting inspections, sampling, and visual observations, and (3) managing storm water. Training should address topics such as spill response, good housekeeping, and material handling procedures, and actions necessary to implement all BMPs identified in the SWPPP. The SWPPP shall identify periodic dates for such training. Records shall be maintained of all training sessions held.
6. **Waste Handling/Recycling.** This includes the procedures or processes to handle, store, or dispose of waste materials or recyclable materials.
7. **Recordkeeping and Internal Reporting.** This includes the procedures to ensure that all records of inspections, spills, maintenance activities, corrective actions, visual observations, etc., are developed, retained, and provided, as necessary, to the appropriate facility personnel.
8. **Erosion Control and Site Stabilization.** This includes a description of all sediment and erosion control activities. This may include the planting and maintenance of vegetation, diversion of run-on and runoff, placement of sandbags, silt screens, or other sediment control devices, etc.
9. **Inspections.** This includes, in addition to the preventative maintenance inspections identified above, an inspection schedule of all potential pollutant sources. Tracking and follow-up procedures shall be described to ensure adequate corrective actions are taken and SWPPPs are made.
10. **Quality Assurance.** This includes the procedures to ensure that all elements of the SWPPP and Monitoring Program are adequately conducted.

**B. Structural BMPs.**

Where non-structural BMPs as identified in section VIII.A. above are not effective, structural BMPs shall be considered. Structural BMPs generally consist of structural devices that reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Below is a list of structural BMPs that should be considered:

1. **Overhead Coverage.** This includes structures that provide horizontal coverage of materials, chemicals, and pollutant sources from contact with storm water and authorized non-storm water discharges.
2. **Retention Ponds.** This includes basins, ponds, surface impoundments, bermed areas, etc. that do not allow storm water to discharge from the facility.
3. **Control Devices.** This includes berms or other devices that channel or route run-on and runoff away from pollutant sources.
4. **Secondary Containment Structures.** This generally includes containment structures around storage tanks and other areas for the purpose of collecting any leaks or spills.
5. **Treatment.** This includes inlet controls, infiltration devices, oil/water separators, detention ponds, vegetative swales, etc. that reduce the pollutants in storm water discharges and authorized non-storm water discharges.

### C. ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION

The facility operator shall conduct one comprehensive site compliance evaluation (evaluation) in each reporting period (July 1-June 30). Evaluations shall be conducted within 8-16 months of each other. The SWPPP shall be revised, as appropriate, and the revisions implemented within 10 days of approval by the Executive Officer or no later than 90 days after submission to the Regional Water Board, whichever comes first. Evaluations shall include the following:

**A.** A review of all visual observation records, inspection records, and sampling and analysis results.

**B.** A visual inspection of all potential pollutant sources for evidence of, or the potential for, pollutants entering the drainage system.

**C.** A review and evaluation of all BMPs (both structural and non-structural) to determine whether the BMPs are adequate, properly implemented and maintained, or whether additional BMPs are needed. A visual inspection of equipment needed to implement the SWPPP, such as spill response equipment, shall be included.

**D.** An evaluation report that includes, (i) identification of personnel performing the evaluation, (ii) the date(s) of the evaluation, (iii) necessary SWPPP revisions, (iv) schedule, as required in section X.E., for implementing SWPPP revisions, (v) any incidents of non-compliance and the corrective actions taken, and (vi) a certification that the facility operator is in compliance with this Permit. If the above certification cannot be provided, explain in the evaluation report why the facility operator is not in compliance with this Permit. The evaluation report shall be submitted as part of the annual report, retained for at least five years, and signed and certified in accordance with Standard Provisions V.D.5 of Attachment D.

## IX. SWPPP GENERAL REQUIREMENTS

**A.** The SWPPP shall be retained on site and made available upon request of a representative of the Regional Water Board and/or local storm water management agency (local agency) which receives the storm water discharges.

**B.** The Regional Water Board and/or local agency may notify the facility operator when the SWPPP does not meet one or more of the minimum requirements of this section. As requested by the Regional Water Board and/or local agency, the facility operator shall submit an SWPPP revision and implementation schedule that meets the minimum requirements of this section to the Regional Water Board and/or local agency that requested the SWPPP revisions. Within 14 days after implementing the required SWPPP revisions, the facility operator shall provide written certification to the Regional Water Board and/or local agency that the revisions have been implemented.

**C.** The SWPPP shall be revised, as appropriate, and implemented prior to changes in industrial activities which (i) may significantly increase the quantities of pollutants in storm water discharge, (ii) cause a new area of industrial activity at the facility to be exposed to storm water, or (iii) begin an industrial activity which would introduce a new pollutant source at the facility.

**D.** The SWPPP shall be revised and implemented in a timely manner, but in no case more than 90 days after a facility operator determines that the SWPPP is in violation of any requirement(s) of this Permit.

**E.** When any part of the SWPPP is infeasible to implement due to proposed significant structural changes, the facility operator shall submit a report to the Regional Water Board prior to the applicable deadline that (i) describes the portion of the SWPPP that is infeasible to implement by the deadline, (ii) provides justification for a time extension, (iii) provides a schedule for completing and implementing that portion of the SWPPP, and (iv) describes the BMPs that will be implemented in the interim period to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Such reports are subject to Regional Water Board approval and/or modifications. Facility operators shall provide written notification to the Regional Water Board within 14 days after the SWPPP revisions are implemented.

**F.** The SWPPP shall be provided, upon request, to the Regional Water Board. The SWPPP is considered a report that shall be available to the public by the Regional Water Board under section 308(b) of the Clean Water Act.

## ATTACHMENT H – STATE WATER BOARD MINIMUM LEVELS

The Minimum Levels (MLs) in micrograms/liter (µg/L) in this appendix are for use in reporting and compliance determination purposes in accordance with section 2.4 of the State Implementation Policy. These MLs were derived from data for priority pollutants provided by State certified analytical laboratories in 1997 and 1998. These MLs shall be used until new values are adopted by the State Water Board and become effective. The following tables (Tables 2a - 2d) present MLs for four major chemical groupings: volatile substances, semi-volatile substances, inorganics, and pesticides and PCBs.

| Table 2a - VOLATILE SUBSTANCES* | GC | GCMS |
|---|---|---|
| 1,1 Dichloroethane | 0.5 | 1 |
| 1,1 Dichloroethylene | 0.5 | 2 |
| 1,1,1 Trichloroethane | 0.5 | 2 |
| 1,1,2 Trichloroethane | 0.5 | 2 |
| 1,1,2,2 Tetrachloroethane | 0.5 | 1 |
| 1,2 Dichlorobenzene (volatile) | 0.5 | 2 |
| 1,2 Dichloroethane | 0.5 | 2 |
| 1,2 Dichloropropane | 0.5 | 1 |
| 1,3 Dichlorobenzene (volatile) | 0.5 | 2 |
| 1,3 Dichloropropene (volatile) | 0.5 | 2 |
| 1,4 Dichlorobenzene (volatile) | 0.5 | 2 |
| Acrolein | 2.0 | 5 |
| Acrylonitrile | 2.0 | 2 |
| Benzene | 0.5 | 2 |
| Bromoform | 0.5 | 2 |
| Methyl Bromide | 1.0 | 2 |
| Carbon Tetrachloride | 0.5 | 2 |
| Chlorobenzene | 0.5 | 2 |
| Chlorodibromo-methane | 0.5 | 2 |
| Chloroethane | 0.5 | 2 |
| Chloroform | 0.5 | 2 |
| Chloromethane | 0.5 | 2 |
| Dichlorobromo-methane | 0.5 | 2 |
| Dichloromethane | 0.5 | 2 |
| Ethylbenzene | 0.5 | 2 |
| Tetrachloroethylene | 0.5 | 2 |
| Toluene | 0.5 | 2 |
| Trans-1,2 Dichloroethylene | 0.5 | 1 |
| Trichloroethene | 0.5 | 2 |
| Vinyl Chloride | 0.5 | 2 |

*The normal method-specific factor for these substances is 1; therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance.

| Table 2b - SEMI-VOLATILE SUBSTANCES* | GC | GCMS | LC | COLOR |
|---|---|---|---|---|
| Benzo (a) Anthracene | 10 | 5 | | |
| 1,2 Dichlorobenzene (semivolatile) | 2 | 2 | | |
| 1,2 Diphenylhydrazine | | 1 | | |
| 1,2,4 Trichlorobenzene | 1 | 5 | | |
| 1,3 Dichlorobenzene (semivolatile) | 2 | 1 | | |
| 1,4 Dichlorobenzene (semivolatile) | 2 | 1 | | |
| 2 Chlorophenol | 2 | 5 | | |
| 2,4 Dichlorophenol | 1 | 5 | | |
| 2,4 Dimethylphenol | 1 | 2 | | |
| 2,4 Dinitrophenol | 5 | 5 | | |
| 2,4 Dinitrotoluene | 10 | 5 | | |
| 2,4,6 Trichlorophenol | 10 | 10 | | |
| 2,6 Dinitrotoluene | | 5 | | |
| 2- Nitrophenol | | 10 | | |
| 2-Chloroethyl vinyl ether | 1 | 1 | | |
| 2-Chloronaphthalene | | 10 | | |
| 3,3' Dichlorobenzidine | | 5 | | |
| Benzo (b) Fluoranthene | | 10 | 10 | |
| 3-Methyl-Chlorophenol | 5 | 1 | | |
| 4,6 Dinitro-2-methylphenol | 10 | 5 | | |
| 4- Nitrophenol | 5 | 10 | | |
| 4-Bromophenyl phenyl ether | 10 | 5 | | |
| 4-Chlorophenyl phenyl ether | | 5 | | |
| Acenaphthene | 1 | 1 | 0.5 | |
| Acenaphthylene | | 10 | 0.2 | |
| Anthracene | | 10 | 2 | |
| Benzidine | | 5 | | |
| Benzo(a) pyrene | | 10 | 2 | |
| Benzo(g,h,i)perylene | | 5 | 0.1 | |
| Benzo(k)fluoranthene | | 10 | 2 | |
| bis 2-(1-Chloroethoxyl) methane | | 5 | | |
| bis(2-chloroethyl) ether | 10 | 1 | | |
| bis(2-Chloroisopropyl) ether | 10 | 2 | | |
| bis(2-Ethylhexyl) phthalate | 10 | 5 | | |
| Butyl benzyl phthalate | 10 | 10 | | |
| Chrysene | | 10 | 5 | |
| di-n-Butyl phthalate | | 10 | | |
| di-n-Octyl phthalate | | 10 | | |
| Dibenzo(a,h)-anthracene | | 10 | 0.1 | |
| Diethyl phthalate | 10 | 2 | | |
| Dimethyl phthalate | 10 | 2 | | |
| Fluoranthene | 10 | 1 | 0.05 | |
| Fluorene | | 10 | 0.1 | |
| Hexachloro-cyclopentadiene | 5 | 5 | | |
| Hexachlorobenzene | 5 | 1 | | |
| Hexachlorobutadiene | 5 | 1 | | |
| Hexachloroethane | 5 | 1 | | |
| Indeno(1,2,3,cd)-pyrene | | 10 | 0.05 | |
| Isophorone | 10 | 1 | | |
| N-Nitroso diphenyl amine | 10 | 1 | | |
| N-Nitroso-dimethyl amine | 10 | 5 | | |

| Table 2b - SEMI-VOLATILE SUBSTANCES* | GC | GCMS | LC | COLOR |
|---|---|---|---|---|
| N-Nitroso -di n-propyl amine | 10 | 5 | | |
| Naphthalene | 10 | 1 | 0.2 | |
| Nitrobenzene | 10 | 1 | | |
| Pentachlorophenol | 1 | 5 | | |
| Phenanthrene | | 5 | 0.05 | |
| Phenol ** | 1 | 1 | | 50 |
| Pyrene | | 10 | 0.05 | |

* With the exception of phenol by colorimetric technique, the normal method-specific factor for these substances is 1,000; therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance multiplied by 1,000.

** Phenol by colorimetric technique has a factor of 1.

| Table 2c – INORGANICS* | FAA | GFAA | ICP | ICPMS | SPGFAA | HYDRIDE | CVAA | COLOR | DCP |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | 10 | 5 | 50 | 0.5 | 5 | 0.5 | | | 1,000 |
| Arsenic | | 2 | 10 | 2 | 2 | 1 | | 20 | 1,000 |
| Beryllium | 20 | 0.5 | 2 | 0.5 | 1 | | | | 1,000 |
| Cadmium | 10 | 0.5 | 10 | 0.25 | 0.5 | | | | 1,000 |
| Chromium (total) | 50 | 2 | 10 | 0.5 | 1 | | | | 1,000 |
| Chromium VI | 5 | | | | | | | 10 | |
| Copper | 25 | 5 | 10 | 0.5 | 2 | | | | 1,000 |
| Cyanide | | | | | | | | 5 | |
| Lead | 20 | 5 | 5 | 0.5 | 2 | | | | 10,000 |
| Mercury | | | | 0.5 | | | 0.2 | | |
| Nickel | 50 | 5 | 20 | 1 | 5 | | | | 1,000 |
| Selenium | | 5 | 10 | 2 | 5 | 1 | | | 1,000 |
| Silver | 10 | 1 | 10 | 0.25 | 2 | | | | 1,000 |
| Thallium | 10 | 2 | 10 | 1 | 5 | | | | 1,000 |
| Zinc | 20 | | 20 | 1 | 10 | | | | 1,000 |

* The normal method-specific factor for these substances is 1; therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance.

| Table 2d – PESTICIDES – PCBs* | GC |
|---|---|
| 4,4'-DDD | 0.05 |
| 4,4'-DDE | 0.05 |
| 4,4'-DDT | 0.01 |
| a-Endosulfan | 0.02 |
| alpha-BHC | 0.01 |
| Aldrin | 0.005 |
| b-Endosulfan | 0.01 |
| Beta-BHC | 0.005 |
| Chlordane | 0.1 |
| Delta-BHC | 0.005 |
| Dieldrin | 0.01 |
| Endosulfan Sulfate | 0.05 |
| Endrin | 0.01 |
| Endrin Aldehyde | 0.01 |
| Heptachlor | 0.01 |
| Heptachlor Epoxide | 0.01 |
| Gamma-BHC (Lindane) | 0.02 |
| PCB 1016 | 0.5 |
| PCB 1221 | 0.5 |
| PCB 1232 | 0.5 |
| PCB 1242 | 0.5 |
| PCB 1248 | 0.5 |
| PCB 1254 | 0.5 |
| PCB 1260 | 0.5 |
| Toxaphene | 0.5 |

* The normal method-specific factor for these substances is 100; therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance multiplied by 100.

Techniques:

GC - Gas Chromatography
GCMS - Gas Chromatography/Mass Spectrometry
HRGCMS - High Resolution Gas Chromatography/Mass Spectrometry (i.e., EPA 1613, 1624, or 1625)
LC - High Pressure Liquid Chromatography
FAA - Flame Atomic Absorption
GFAA - Graphite Furnace Atomic Absorption
HYDRIDE - Gaseous Hydride Atomic Absorption
CVAA - Cold Vapor Atomic Absorption
ICP - Inductively Coupled Plasma
ICPMS - Inductively Coupled Plasma/Mass Spectrometry
SPGFAA - Stabilized Platform Graphite Furnace Atomic Absorption (i.e., EPA 200.9)
DCP - Direct Current Plasma
COLOR – Colorimetric

## ATTACHMENT I – LIST OF PRIORITY POLLUTANTS

| CTR Number | Parameter | CAS Number | Suggested Analytical Methods |
|---|---|---|---|
| 1 | Antimony | 7440360 | [1] |
| 2 | Arsenic | 7440382 | [1] |
| 3 | Beryllium | 7440417 | [1] |
| 4 | Cadmium | 7440439 | [1] |
| 5a | Chromium (III) | 16065831 | [1] |
| 5a | Chromium (VI) | 18540299 | [1] |
| 6 | Copper | 7440508 | [1] |
| 7 | Lead | 7439921 | [1] |
| 8 | Mercury | 7439976 | [1] |
| 9 | Nickel | 7440020 | [1] |
| 10 | Selenium | 7782492 | [1] |
| 11 | Silver | 7440224 | [1] |
| 12 | Thallium | 7440280 | [1] |
| 13 | Zinc | 7440666 | [1] |
| 14 | Cyanide | 57125 | [1] |
| 15 | Asbestos | 1332214 | [1] |
| 16 | 2,3,7,8-TCDD | 1746016 | [1] |
| 17 | Acrolein | 107028 | [1] |
| 18 | Acrylonitrile | 107131 | [1] |
| 19 | Benzene | 71432 | [1] |
| 20 | Bromoform | 75252 | [1] |
| 21 | Carbon Tetrachloride | 56235 | [1] |
| 22 | Chlorobenzene | 108907 | [1] |
| 23 | Chlorodibromomethane | 124481 | [1] |
| 24 | Chloroethane | 75003 | [1] |
| 25 | 2-Chloroethylvinyl Ether | 110758 | [1] |
| 26 | Chloroform | 67663 | [1] |
| 27 | Dichlorobromomethane | 75274 | [1] |
| 28 | 1,1-Dichloroethane | 75343 | [1] |
| 29 | 1,2-Dichloroethane | 107062 | [1] |
| 30 | 1,1-Dichloroethylene | 75354 | [1] |
| 31 | 1,2-Dichloropropane | 78875 | [1] |
| 32 | 1,3-Dichloropropylene | 542756 | [1] |
| 33 | Ethylbenzene | 100414 | [1] |
| 34 | Methyl Bromide | 74839 | [1] |
| 35 | Methyl Chloride | 74873 | [1] |
| 36 | Methylene Chloride | 75092 | [1] |
| 37 | 1,1,2,2-Tetrachloroethane | 79345 | [1] |
| 38 | Tetrachloroethylene | 127184 | [1] |
| 39 | Toluene | 108883 | [1] |
| 40 | 1,2-Trans-Dichloroethylene | 156605 | [1] |
| 41 | 1,1,1-Trichloroethane | 71556 | [1] |
| 42 | 1,12-Trichloroethane | 79005 | [1] |

| CTR Number | Parameter | CAS Number | Suggested Analytical Methods |
|---|---|---|---|
| 43 | Trichloroethylene | 79016 | [1] |
| 44 | Vinyl Chloride | 75014 | [1] |
| 45 | 2-Chlorophenol | 95578 | [1] |
| 46 | 2,4-Dichlorophenol | 120832 | [1] |
| 47 | 2,4-Dimethylphenol | 105679 | [1] |
| 48 | 2-Methyl-4,6-Dinitrophenol | 534521 | [1] |
| 49 | 2,4-Dinitrophenol | 51285 | [1] |
| 50 | 2-Nitrophenol | 88755 | [1] |
| 51 | 4-Nitrophenol | 100027 | [1] |
| 52 | 3-Methyl-4-Chlorophenol | 59507 | [1] |
| 53 | Pentachlorophenol | 87865 | [1] |
| 54 | Phenol | 108952 | [1] |
| 55 | 2,4,6-Trichlorophenol | 88062 | [1] |
| 56 | Acenaphthene | 83329 | [1] |
| 57 | Acenaphthylene | 208968 | [1] |
| 58 | Anthracene | 120127 | [1] |
| 59 | Benzidine | 92875 | [1] |
| 60 | Benzo(a)Anthracene | 56553 | [1] |
| 61 | Benzo(a)Pyrene | 50328 | [1] |
| 62 | Benzo(b)Fluoranthene | 205992 | [1] |
| 63 | Benzo(ghi)Perylene | 191242 | [1] |
| 64 | Benzo(k)Fluoranthene | 207089 | [1] |
| 65 | Bis(2-Chloroethoxy)Methane | 111911 | [1] |
| 66 | Bis(2-Chloroethyl)Ether | 111444 | [1] |
| 67 | Bis(2-Chloroisopropyl)Ether | 108601 | [1] |
| 68 | Bis(2-Ethylhexyl)Phthalate | 117817 | [1] |
| 69 | 4-Bromophenyl Phenyl Ether | 101553 | [1] |
| 70 | Butylbenzyl Phthalate | 85687 | [1] |
| 71 | 2-Chloronaphthalene | 91587 | [1] |
| 72 | 4-Chlorophenyl Phenyl Ether | 7005723 | [1] |
| 73 | Chrysene | 218019 | [1] |
| 74 | Dibenzo(a,h)Anthracene | 53703 | [1] |
| 75 | 1,2-Dichlorobenzene | 95501 | [1] |
| 76 | 1,3-Dichlorobenzene | 541731 | [1] |
| 77 | 1,4-Dichlorobenzene | 106467 | [1] |
| 78 | 3,3'-Dichlorobenzidine | 91941 | [1] |
| 79 | Diethyl Phthalate | 84662 | [1] |
| 80 | Dimethyl Phthalate | 131113 | [1] |
| 81 | Di-n-Butyl Phthalate | 84742 | [1] |
| 82 | 2,4-Dinitrotoluene | 121142 | [1] |
| 83 | 2,6-Dinitrotoluene | 606202 | [1] |
| 84 | Di-n-Octyl Phthalate | 117840 | [1] |
| 85 | 1,2-Diphenylhydrazine | 122667 | [1] |
| 86 | Fluoranthene | 206440 | [1] |
| 87 | Fluorene | 86737 | [1] |
| 88 | Hexachlorobenzene | 118741 | [1] |

| CTR Number | Parameter | CAS Number | Suggested Analytical Methods |
|---|---|---|---|
| 89 | Hexachlorobutadiene | 87863 | [1] |
| 90 | Hexachlorocyclopentadiene | 77474 | [1] |
| 91 | Hexachloroethane | 67721 | [1] |
| 92 | Indeno(1,2,3-cd)Pyrene | 193395 | [1] |
| 93 | Isophorone | 78591 | [1] |
| 94 | Naphthalene | 91203 | [1] |
| 95 | Nitrobenzene | 98953 | [1] |
| 96 | N-Nitrosodimethylamine | 62759 | [1] |
| 97 | N-Nitrosodi-n-Propylamine | 621647 | [1] |
| 98 | N-Nitrosodiphenylamine | 86306 | [1] |
| 99 | Phenanthrene | 85018 | [1] |
| 100 | Pyrene | 129000 | [1] |
| 101 | 1,2,4-Trichlorobenzene | 120821 | [1] |
| 102 | Aldrin | 309002 | [1] |
| 103 | alpha-BHC | 319846 | [1] |
| 104 | beta-BHC | 319857 | [1] |
| 105 | gamma-BHC | 58899 | [1] |
| 106 | delta-BHC | 319868 | [1] |
| 107 | Chlordane | 57749 | [1] |
| 108 | 4,4'-DDT | 50293 | [1] |
| 109 | 4,4'-DDE | 72559 | [1] |
| 110 | 4,4'-DDD | 72548 | [1] |
| 111 | Dieldrin | 60571 | [1] |
| 112 | alpha-Endosulfan | 959988 | [1] |
| 113 | beta-Endosulfan | 33213659 | [1] |
| 114 | Endosulfan Sulfate | 1031078 | [1] |
| 115 | Endrin | 72208 | [1] |
| 116 | Endrin Aldehyde | 7421934 | [1] |
| 117 | Heptachlor | 76448 | [1] |
| 118 | Heptachlor Epoxide | 1024573 | [1] |
| 119 | PCB-1016 | 12674112 | [1] |
| 120 | PCB-1221 | 11104282 | [1] |
| 121 | PCB-1232 | 11141165 | [1] |
| 122 | PCB-1242 | 53469219 | [1] |
| 123 | PCB-1248 | 12672296 | [1] |
| 124 | PCB-1254 | 11097691 | [1] |
| 125 | PCB-1260 | 11096825 | [1] |
| 126 | Toxaphene | 8001352 | [1] |

[1] Pollutants shall be analyzed using the methods described in 40 C.F.R. part 136.

# ATTACHMENT J – REASONABLE POTENTIAL ANALYSIS

| | | | | | CTR Water Quality Criteria (ug/L) | | | | | | | REASONABLE POTENTIAL ANALYSIS (RPA) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Freshwater | | Saltwater | | Human Health for consumption of: | | | | | | | | | | | |
| CTR# | Parameters | Units | CV | MEC | C acute = CMC tot | C chronic = CCC tot | C acute = CMC tot | C chronic = CCC tot | Water & organisms | Organisms only | Lowest C | MEC >= Lowest C | Tier 1 - Need limit? | B Available (Y/N)? | Are all B data points non-detects (Y/N)? | If all data points ND Enter the min detection limit (MDL) | Enter the pollutant B detected max conc (ug/L) | If all B is ND, is MDL>C? | If B>C, effluent limit required | Tier 3 - other info. ? |
| 1 | Antimony | ug/L | | 7.61 | | | | | | 4300.00 | 4300.00 | No | No | Y | N | | 32.96 | | B<=C, Step 7 | |
| 2 | Arsenic | ug/L | | 27.6 | | | 69.00 | 36.00 | | | 36.00 | No | No | Y | N | | 19 | | B<=C, Step 7 | |
| 3 | Beryllium | ug/L | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | Y | Y | 0.03 | | N | No Criteria | No Criteria |
| 4 | Cadmium | ug/L | | 0.0877 | | | 42.25 | 9.36 | | | 9.36 | No | No | Y | Y | 0.01 | | N | No detected value of B, Step 7 | |
| 5a | Chromium (III) | | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | N | | | | | No Criteria | No Criteria |
| 5b | Chromium (VI) | ug/L | | 0.67 | | | 1100.00 | 50.00 | | | 50.00 | No | No | Y | N | | 3 | | B<=C, Step 7 | |
| 6 | Copper | ug/L | 1.293 | 42.2 | | | 5.78 | 3.73 | | | 3.73 | Yes | Yes | Y | N | | 32.46 | | Limit required, B>C & pollutant dete | |
| 7 | Lead | ug/L | | 1.12 | | | 220.82 | 8.52 | | | 8.52 | No | No | Y | Y | 0.2 | | N | No detected value of B, Step 7 | |
| 8 | Mercury | ug/L | 0.629 | 0.068 | | | Reserved | Reserved | | 0.05 | 0.05 | Yes | Yes | Y | N | | 0.082 | | Limit required, B>C & pollutant dete | |
| 9 | Nickel | ug/L | 1.291 | 27.1 | | | 74.75 | 8.28 | | 4600.00 | 8.28 | Yes | Yes | Y | N | | 5 | | B<=C, Step 7 | |
| 10 | Selenium | ug/L | | 0.347 | | | 290.58 | 71.14 | | | 71.14 | No | No | Y | N | | 318 | | B>C & eff ND, Step 7 | |
| 11 | Silver | ug/L | 0.6 | 3.7 | | | 2.24 | | | | 2.24 | Yes | Yes | Y | N | | 27 | | Limit required, B>C & pollutant dete | |
| 12 | Thallium | ug/L | 0.6 | 9.02 | | | | | | 6.30 | 6.30 | Yes | Yes | Y | Y | 0.1 | | N | No detected value of B, Step 7 | |
| 13 | Zinc | ug/L | 1.943 | 133 | | | 92.02 | 85.62 | | | 85.6 | Yes | Yes | Y | N | | 963 | | Limit required, B>C & pollutant dete | |
| 14 | Cyanide | ug/L | | | | | 1.00 | 1.00 | | 220000.0 | 1.00 | | | Y | Y | 2 | | Y | No detected value of B, Step 7 | |
| 15 | Asbestos | MFL | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | Y | N | | 0.5 | | No Criteria | No Criteria |
| 16 | 2,3,7,8 TCDD | ug/L | | | | | | | | 1.4E-08 | 1.40E-08 | | | Y | N | | | | No detected value of B, Step 7 | |
| | TCDD Equivalents | ug/L | 0 | | | | | | | 1.4E-08 | 1.40E-08 | | | Y | Y | 0.01 | | Y | No detected value of B, Step 7 | |
| 17 | Acrolein | ug/L | | 14 | | | | | | 780.0 | 780 | No | No | N | | | | | No detected value of B, Step 7 | |
| 18 | Acrylonitrile | ug/L | | | | | | | | 0.66 | 0.660 | | | N | | | | | No detected value of B, Step 7 | |
| 19 | Benzene | ug/L | | 0.14 | | | | | | 71 | 71.0 | No | No | Y | Y | 0.25 | | N | No detected value of B, Step 7 | |
| 20 | Bromoform | ug/L | | 0.5 | | | | | | 360 | 360.0 | No | No | Y | Y | 0.27 | | N | No detected value of B, Step 7 | |
| 21 | Carbon Tetrachloride | ug/L | | 0.23 | | | | | | 4.4 | 4.40 | No | No | Y | Y | 0.3 | | N | No detected value of B, Step 7 | |
| 22 | Chlorobenzene | ug/L | | 0.17 | | | | | | 21000 | 21000 | No | No | Y | Y | 0.2 | | N | No detected value of B, Step 7 | |
| 23 | Chlorodibromomethane | ug/L | | 0.25 | | | | | | 34 | 34.00 | No | No | Y | Y | 0.29 | | N | No detected value of B, Step 7 | |
| 24 | Chloroethane | ug/L | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | Y | Y | 0.4 | | N | No Criteria | No Criteria |
| 25 | 2-Chloroethylvinyl ether | ug/L | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | N | | | | | No Criteria | No Criteria |
| 26 | Chloroform | ug/L | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | Y | N | 1.4 | 1.4 | N | No Criteria | No Criteria |
| 27 | Dichlorobromomethane | ug/L | | 0.21 | | | | | | 46 | 46.00 | No | No | Y | N | | 1 | | B<=C, Step 7 | |
| 28 | 1,1-Dichloroethane | ug/L | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | Y | Y | 0.33 | | N | No Criteria | No Criteria |
| 29 | 1,2-Dichloroethane | ug/L | | 0.24 | | | | | | 99 | 99.00 | No | No | Y | Y | 0.33 | | N | No detected value of B, Step 7 | |
| 30 | 1,1-Dichloroethylene | ug/L | | 0.43 | | | | | | 3.2 | 3.200 | No | No | N | | | | | No detected value of B, Step 7 | |
| 31 | 1,2-Dichloropropane | ug/L | | 0.42 | | | | | | 39 | 39.00 | No | No | Y | Y | 0.29 | | N | No detected value of B, Step 7 | |
| 32 | 1,3-Dichloropropylene | ug/L | | 0.14 | | | | | | 1700 | 1700 | No | No | Y | Y | 0.34 | | N | No detected value of B, Step 7 | |
| 33 | Ethylbenzene | ug/L | | 0.14 | | | | | | 29000 | 29000 | No | No | Y | Y | 0.24 | | N | No detected value of B, Step 7 | |
| 34 | Methyl Bromide | ug/L | | 3.9 | | | | | | 4000 | 4000 | No | No | Y | Y | 0.46 | | N | No detected value of B, Step 7 | |
| 35 | Methyl Chloride | ug/L | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | Y | Y | 0.34 | | N | No Criteria | No Criteria |
| 36 | Methylene Chloride | ug/L | | 0.64 | | | | | | 1600 | 1600.0 | No | No | Y | Y | 0.91 | | N | No detected value of B, Step 7 | |
| 37 | 1,1,2,2-Tetrachloroethane | ug/L | | 0.41 | | | | | | 11 | 11.00 | No | No | Y | Y | 0.22 | | N | No detected value of B, Step 7 | |
| 38 | Tetrachloroethylene | ug/L | | | | | | | | 8.85 | 8.9 | | | Y | Y | 0.25 | | N | No detected value of B, Step 7 | |
| 39 | Toluene | ug/L | | 0.24 | | | | | | 200000 | 200000 | No | No | Y | Y | 0.24 | | N | No detected value of B, Step 7 | |
| 40 | 1,2-Trans-Dichloroethylene | ug/L | | | | | | | | 140000 | 140000 | | | N | | | | | No detected value of B, Step 7 | |
| 41 | 1,1,1-Trichloroethane | ug/L | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | Y | Y | 0.29 | | N | No Criteria | No Criteria |
| 42 | 1,1,2-Trichloroethane | ug/L | | 0.38 | | | | | | 42 | 42.0 | No | No | Y | Y | 0.38 | | N | No detected value of B, Step 7 | |
| 43 | Trichloroethylene | ug/L | | 0.37 | | | | | | 81 | 81.0 | No | No | Y | Y | 0.45 | | N | No detected value of B, Step 7 | |
| 44 | Vinyl Chloride | ug/L | | 0.3 | | | | | | 525 | 525 | No | No | Y | Y | 0.39 | | N | No detected value of B, Step 7 | |
| 45 | 2-Chlorophenol | ug/L | | 1.2 | | | | | | 400 | 400 | No | No | Y | Y | 0.32 | | N | No detected value of B, Step 7 | |
| 46 | 2,4-Dichlorophenol | ug/L | | 1.2 | | | | | | 790 | 790 | No | No | Y | Y | 0.93 | | N | No detected value of B, Step 7 | |
| 47 | 2,4-Dimethylphenol | ug/L | | 1.2 | | | | | | 2300 | 2300 | No | No | Y | Y | 0.63 | | N | No detected value of B, Step 7 | |
| 48 | 4,6-dinitro-o-resol (aka2-methyl-4,6-Dinitrophenol) | ug/L | | 7.1 | | | | | | 765 | 765.0 | No | No | Y | Y | 2.8 | | N | No detected value of B, Step 7 | |
| 49 | 2,4-Dinitrophenol | ug/L | | 6.7 | | | | | | 14000 | 14000 | No | No | Y | Y | 3.1 | | N | No detected value of B, Step 7 | |
| 50 | 2-Nitrophenol | ug/L | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | Y | Y | 0.95 | | N | No Criteria | No Criteria |
| 51 | 4-Nitrophenol | ug/L | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | Y | Y | 1.7 | | N | No Criteria | No Criteria |
| 52 | 3-Methyl-4-Chlorophenol (aka P-chloro-m-resol) | ug/L | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | Y | Y | 1.2 | | N | No Criteria | No Criteria |
| 53 | Pentachlorophenol | ug/L | | 2.3 | | | 13.00 | 7.90 | | 8.2 | 7.90 | No | No | Y | Y | 2.2 | | N | No detected value of B, Step 7 | |
| 54 | Phenol | ug/L | | 1 | | | | | | 4600000 | 4600000 | No | No | Y | Y | 0.39 | | N | No detected value of B, Step 7 | |
| 55 | 2,4,6-Trichlorophenol | ug/L | | 1.3 | | | | | | 6.5 | 6.5 | No | No | Y | Y | 0.49 | | N | No detected value of B, Step 7 | |
| 56 | Acenaphthene | ug/L | | 1.4 | | | | | | 2700 | 2700 | No | No | Y | Y | 0.55 | | N | No detected value of B, Step 7 | |
| 57 | Acenaphthylene | ug/L | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | Y | Y | 0.65 | | N | No Criteria | No Criteria |
| 58 | Anthracene | ug/L | | 1.5 | | | | | | 110000 | 110000 | No | No | Y | Y | 0.64 | | N | No detected value of B, Step 7 | |
| 59 | Benzidine | ug/L | | | | | | | | 0.00054 | 0.00054 | | | N | | | | | No detected value of B, Step 7 | |
| 60 | Benzo(a)Anthracene | ug/L | | | | | | | | 0.049 | **0.049** | | | Y | Y | 0.53 | | Y | No detected value of B, Step 7 | |
| 61 | Benzo(a)Pyrene | ug/L | | | | | | | | 0.049 | **0.049** | | | Y | Y | 0.56 | | Y | No detected value of B, Step 7 | |
| 62 | Benzo(b)Fluoranthene | ug/L | | | | | | | | 0.049 | 0.0490 | | | Y | Y | 2.7 | | Y | No detected value of B, Step 7 | |
| 63 | Benzo(ghi)Perylene | ug/L | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | Y | Y | 0.77 | | N | No Criteria | No Criteria |
| 64 | Benzo(k)Fluoranthene | ug/L | | | | | | | | 0.049 | 0.0490 | | | Y | Y | 0.75 | | Y | No detected value of B, Step 7 | |
| 65 | Bis(2-Chloroethoxy)Methane | ug/L | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | Y | Y | 0.82 | | N | No Criteria | No Criteria |
| 66 | Bis(2-Chloroethyl)Ether | ug/L | | 1.3 | | | | | | 1.4 | 1.400 | No | No | Y | Y | 0.45 | | N | No detected value of B, Step 7 | |
| 67 | Bis(2-Chloroisopropyl)Ether | ug/L | | 1.6 | | | | | | 170000 | 170000 | No | No | Y | Y | 1.5 | | N | No detected value of B, Step 7 | |
| 68 | Bis(2-Ethylhexyl)Phthalate | ug/L | | 1.6 | | | | | | 5.9 | 5.9 | No | No | Y | Y | 0.83 | | N | No detected value of B, Step 7 | |

| | | | | HUMAN HEALTH CALCULATIONS | | | AQUATIC LIFE CALCULATIONS | | | | | | | | | LIMITS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Organisms only | | | Saltwater / Freshwater / Basin Plan | | | | | | | | | | | | |
| CTR# | Parameters | RPA Result - Need Limit? | Reason | AMEL hh = ECA = C hh O only | MDEL/AMEL multiplier | MDEL hh | ECA acute multiplier (p.7) | LTA acute | ECA chronic multiplier | LTA chronic | Lowest LTA | AMEL multiplier 95 | AMEL aq life | MDEL multiplier 99 | MDEL aq life | Lowest AMEL | Lowest MDEL | Recommendation | Comment |
| 1 | Antimony | No | MEC<C & B<=C | | | | | | | | | | | | | | | No Limit | |
| 2 | Arsenic | No | MEC<C & B<=C | | | | | | | | | | | | | | | No Limit | |
| 3 | Beryllium | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 4 | Cadmium | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 5a | Chromium (III) | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 5b | Chromium (VI) | No | MEC<C & B<=C | | | | | | | | | | | | | | | No Limit | |
| 6 | Copper | Yes | MEC>=C | | 2.76 | | 0.16 | 0.94 | 0.30 | 1.13 | 0.94 | 2.22 | 2.09 | 6.14 | 5.783133 | 2.1 | 5.8 | | |
| 7 | Lead | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 8 | Mercury | Yes | MEC>=C | 0.051 | 2.05 | 0.10455 | | | | | | 1.58 | | 3.24 | | 0.051 | 0.10 | | |
| 9 | Nickel | Yes | MEC>=C | 4600 | 2.76 | 12711.97133 | 0.16 | 12.19 | 0.30 | 2.50 | 2.50 | 2.22 | 5.54 | 6.13 | 15.31409 | 5.5 | 15 | | |
| 10 | Selenium | No | ud; B>C & effluent ND | | | | | | | | | | | | | | | No Limit | |
| 11 | Silver | Yes | MEC>=C | | 2.01 | | 0.32 | 0.72 | 0.53 | | 0.72 | 1.55 | 1.11 | 3.11 | 2.235294 | 1.1 | 2.2 | | |
| 12 | Thallium | Yes | MEC>=C | 6.3 | 2.01 | 12.63899 | | | | | | 1.55 | | 3.11 | | 6.3 | 13 | | |
| 13 | Zinc | Yes | MEC>=C | | 3.06 | | 0.12 | 10.97 | 0.21 | 17.92 | 10.97 | 2.74 | 30.09 | 8.39 | 92.02454 | 30 | 92 | | |
| 14 | Cyanide | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 15 | Asbestos | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 16 | 2,3,7,8 TCDD | no | ud; effluent ND, MDL>C & B> | | | | | | | | | | | | | | | No Limit | |
| | TCDD Equivalents | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 17 | Acrolein | No | Ud;MEC<C & no B | | | | | | | | | | | | | | | No Limit | |
| 18 | Acrylonitrile | No | UD;Effluent ND,MDL>C & No | | | | | | | | | | | | | | | No Limit | |
| 19 | Benzene | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 20 | Bromoform | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 21 | Carbon Tetrachloride | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 22 | Chlorobenzene | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 23 | Chlorodibromomethane | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 24 | Chloroethane | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 25 | 2-Chloroethylvinyl ether | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 26 | Chloroform | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 27 | Dichlorobromomethane | No | MEC<C & B<=C | | | | | | | | | | | | | | | No Limit | |
| 28 | 1,1-Dichloroethane | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 29 | 1,2-Dichloroethane | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 30 | 1,1-Dichloroethylene | No | Ud;MEC<C & no B | | | | | | | | | | | | | | | No Limit | |
| 31 | 1,2-Dichloropropane | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 32 | 1,3-Dichloropropylene | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 33 | Ethylbenzene | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 34 | Methyl Bromide | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 35 | Methyl Chloride | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 36 | Methylene Chloride | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 37 | 1,1,2,2-Tetrachloroethane | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 38 | Tetrachloroethylene | ud | No effluent data & B is ND | | | | | | | | | | | | | | | No Limit | |
| 39 | Toluene | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 40 | 1,2-Trans-Dichloroethylene | Ud | No effluent data & no B | | | | | | | | | | | | | | | No Limit | |
| 41 | 1,1,1-Trichloroethane | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 42 | 1,1,2-Trichloroethane | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 43 | Trichloroethylene | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 44 | Vinyl Chloride | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 45 | 2-Chlorophenol | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 46 | 2,4-Dichlorophenol | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 47 | 2,4-Dimethylphenol | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 48 | 4,6-dinitro-o-resol (aka2-methyl-4,6-Dinitrophenol) | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 49 | 2,4-Dinitrophenol | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 50 | 2-Nitrophenol | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 51 | 4-Nitrophenol | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 52 | 3-Methyl-4-Chlorophenol (aka P-chloro-m-resol) | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 53 | Pentachlorophenol | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 54 | Phenol | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 55 | 2,4,6-Trichlorophenol | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 56 | Acenaphthene | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 57 | Acenaphthylene | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 58 | Anthracene | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 59 | Benzidine | No | UD;Effluent ND,MDL>C & No | | | | | | | | | | | | | | | No Limit | |
| 60 | Benzo(a)Anthracene | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 61 | Benzo(a)Pyrene | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 62 | Benzo(b)Fluoranthene | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 63 | Benzo(ghi)Perylene | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 64 | Benzo(k)Fluoranthene | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 65 | Bis(2-Chloroethoxy)Methane | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 66 | Bis(2-Chloroethyl)Ether | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 67 | Bis(2-Chloroisopropyl)Ether | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 68 | Bis(2-Ethylhexyl)Phthalate | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |

| CTR# | Parameters | Units | CV | MEC | CTR Water Quality Criteria (ug/L) | | | | | | Lowest C | REASONABLE POTENTIAL ANALYSIS (RPA) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Freshwater | | Saltwater | | Human Health for consumption of: | | | | | | | | | | | |
| | | | | | C acute = CMC tot | C chronic = CCC tot | C acute = CMC tot | C chronic = CCC tot | Water & organisms | Organisms only | | MEC >= Lowest C | Tier 1 - Need limit? | B Available (Y/N)? | Are all B data points non-detects (Y/N)? | If all data points ND Enter the min detection limit (MDL) | Enter the pollutant B detected max conc (ug/L) | If all B is ND, is MDL>C? | If B>C, effluent limit required | Tier 3 - other info. ? |
| 69 | 4-Bromophenyl Phenyl Ethe | ug/L | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | Y | Y | 0.42 | | N | No Criteria | No Criteria |
| 70 | Butylbenzyl Phthalate | ug/L | | 1.2 | | | | | | 5200 | 5200 | No | No | Y | Y | 0.62 | | N | No detected value of B, Step 7 | |
| 71 | 2-Chloronaphthalene | ug/L | | 1.4 | | | | | | 4300 | 4300 | No | No | Y | Y | 0.71 | | N | No detected value of B, Step 7 | |
| 72 | 4-Chlorophenyl Phenyl Ethe | ug/L | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | Y | Y | 0.69 | | N | No Criteria | No Criteria |
| 73 | Chrysene | ug/L | | | | | | | | 0.049 | **0.049** | | | Y | Y | 0.47 | | Y | No detected value of B, Step 7 | |
| 74 | Dibenzo(a,h)Anthracene | ug/L | | | | | | | | 0.049 | 0.0490 | | | Y | Y | 1.6 | | Y | No detected value of B, Step 7 | |
| 75 | 1,2-Dichlorobenzene | ug/L | | 0.46 | | | | | | 17000 | 17000 | No | No | Y | Y | 0.44 | | N | No detected value of B, Step 7 | |
| 76 | 1,3-Dichlorobenzene | ug/L | | 0.4 | | | | | | 2600 | 2600 | No | No | Y | Y | 0.31 | | N | No detected value of B, Step 7 | |
| 77 | 1,4-Dichlorobenzene | ug/L | | 0.43 | | | | | | 2600 | 2600 | No | No | Y | Y | 0.38 | | N | No detected value of B, Step 7 | |
| 78 | 3,3 Dichlorobenzidine | ug/L | | | | | | | | 0.077 | 0.08 | | | Y | Y | 1.7 | | Y | No detected value of B, Step 7 | |
| 79 | Diethyl Phthalate | ug/L | | 1.4 | | | | | | 120000 | 120000 | No | No | Y | Y | 0.63 | | N | No detected value of B, Step 7 | |
| 80 | Dimethyl Phthalate | ug/L | | 1.3 | | | | | | 2900000 | 2900000 | No | No | Y | Y | 0.57 | | N | No detected value of B, Step 7 | |
| 81 | Di-n-Butyl Phthalate | ug/L | | 1.5 | | | | | | 12000 | 12000 | No | No | Y | Y | 0.9 | | N | No detected value of B, Step 7 | |
| 82 | 2,4-Dinitrotoluene | ug/L | | 1.2 | | | | | | 9.10 | 9.10 | No | No | Y | Y | 0.55 | | N | No detected value of B, Step 7 | |
| 83 | 2,6-Dinitrotoluene | ug/L | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | Y | Y | 0.44 | | N | No Criteria | No Criteria |
| 84 | Di-n-Octyl Phthalate | ug/L | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | Y | Y | 0.59 | | N | No Criteria | No Criteria |
| 85 | 1,2-Diphenylhydrazine | ug/L | | 0.43 | | | | | | 0.54 | 0.540 | No | No | Y | Y | 1.2 | | Y | No detected value of B, Step 7 | |
| 86 | Fluoranthene | ug/L | | 1.6 | | | | | | 370 | 370 | No | No | Y | Y | 0.47 | | N | No detected value of B, Step 7 | |
| 87 | Fluorene | ug/L | | 1.4 | | | | | | 14000 | 14000 | No | No | Y | Y | 0.32 | | N | No detected value of B, Step 7 | |
| 88 | Hexachlorobenzene | ug/L | | | | | | | | 0.00077 | 0.00077 | | | Y | Y | 0.61 | | Y | No detected value of B, Step 7 | |
| 89 | Hexachlorobutadiene | ug/L | | 1.4 | | | | | | 50 | 50.00 | No | No | Y | Y | 0.96 | | N | No detected value of B, Step 7 | |
| 90 | Hexachlorocyclopentadiene | ug/L | | 3.5 | | | | | | 17000 | 17000 | No | No | Y | Y | 2.5 | | N | No detected value of B, Step 7 | |
| 91 | Hexachloroethane | ug/L | | 1.5 | | | | | | 8.9 | 8.9 | No | No | Y | Y | 0.93 | | N | No detected value of B, Step 7 | |
| 92 | Indeno(1,2,3-cd)Pyrene | ug/L | | | | | | | | 0.049 | 0.0490 | | | Y | Y | 0.71 | | Y | No detected value of B, Step 7 | |
| 93 | Isophorone | ug/L | | 1.3 | | | | | | 600 | 600.0 | No | No | Y | Y | 0.78 | | N | No detected value of B, Step 7 | |
| 94 | Naphthalene | ug/L | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | Y | Y | 0.45 | | N | No Criteria | No Criteria |
| 95 | Nitrobenzene | ug/L | | 1.5 | | | | | | 1900 | 1900 | No | No | Y | Y | 1.2 | | N | No detected value of B, Step 7 | |
| 96 | N-Nitrosodimethylamine | ug/L | | 1.6 | | | | | | 8.10 | 8.10000 | No | No | Y | Y | 1.7 | | N | No detected value of B, Step 7 | |
| 97 | N-Nitrosodi-n-Propylamine | ug/L | | 1.2 | | | | | | 1.40 | 1.400 | No | No | Y | Y | 0.74 | | N | No detected value of B, Step 7 | |
| 98 | N-Nitrosodiphenylamine | ug/L | | 1.4 | | | | | | 16 | 16.0 | No | No | Y | Y | 0.76 | | N | No detected value of B, Step 7 | |
| 99 | Phenanthrene | ug/L | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | Y | Y | 0.61 | | N | No Criteria | No Criteria |
| 100 | Pyrene | ug/L | | 1.5 | | | | | | 11000 | **11000** | No | No | Y | Y | 0.61 | | N | No detected value of B, Step 7 | |
| 101 | 1,2,4-Trichlorobenzene | ug/L | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | Y | Y | 0.17 | | N | No Criteria | No Criteria |
| 102 | Aldrin | ug/L | | | | | 1.30 | | | 0.00014 | 0.00014 | | | Y | Y | | | | No detected value of B, Step 7 | |
| 103 | alpha-BHC | ug/L | | | | | | | | 0.013 | 0.0130 | | | Y | Y | | | | No detected value of B, Step 7 | |
| 104 | beta-BHC | ug/L | | 0.015 | | | | | | 0.046 | 0.046 | No | No | Y | Y | 0.006 | | N | No detected value of B, Step 7 | |
| 105 | gamma-BHC | ug/L | | 0.015 | | | 0.16 | | | 0.063 | 0.063 | No | No | Y | Y | 0.004 | | N | No detected value of B, Step 7 | |
| 106 | delta-BHC | ug/L | | No Criteria | | | | | | | No Criteria | No Criteria | No Criteria | Y | Y | 0.009 | | N | No Criteria | No Criteria |
| 107 | Chlordane | ug/L | | | | | 0.09 | 0.004 | | 0.00059 | **0.00059** | | | Y | Y | 0.014 | | Y | No detected value of B, Step 7 | |
| 108 | 4,4'-DDT | ug/L | | | | | 0.13 | 0.001 | | 0.00059 | **0.00059** | | | Y | Y | 0.012 | | Y | No detected value of B, Step 7 | |
| 109 | 4,4'-DDE (linked to DDT) | ug/L | | | | | | | | 0.00059 | 0.00059 | | | Y | Y | 0.004 | | Y | No detected value of B, Step 7 | |
| 110 | 4,4'-DDD | ug/L | | | | | | | | 0.00084 | 0.00084 | | | Y | Y | 0.011 | | Y | No detected value of B, Step 7 | |
| 111 | Dieldrin | ug/L | | | | | 0.71 | 0.0019 | | 0.00014 | **0.00014** | | | Y | Y | 0.002 | | Y | No detected value of B, Step 7 | |
| 112 | alpha-Endosulfan | ug/L | | | | | 0.034 | 0.0087 | | 240 | 0.0087 | | | Y | Y | 0.014 | | Y | No detected value of B, Step 7 | |
| 113 | beta-Endolsulfan | ug/L | | | | | 0.034 | 0.0087 | | 240 | 0.0087 | | | Y | Y | 0.004 | | N | No detected value of B, Step 7 | |
| 114 | Endosulfan Sulfate | ug/L | | 0.015 | | | | | | 240 | 240 | No | No | Y | Y | 0.066 | | N | No detected value of B, Step 7 | |
| 115 | Endrin | ug/L | | | | | 0.037 | 0.0023 | | 0.81 | 0.0023 | | | Y | Y | 0.006 | | Y | No detected value of B, Step 7 | |
| 116 | Endrin Aldehyde | ug/L | | 0.013 | | | | | | 0.81 | 0.81 | No | No | Y | Y | 0.023 | | N | No detected value of B, Step 7 | |
| 117 | Heptachlor | ug/L | | | | | 0.053 | 0.0036 | | 0.00021 | 0.00021 | | | Y | Y | 0.003 | | Y | No detected value of B, Step 7 | |
| 118 | Heptachlor Epoxide | ug/L | | | | | 0.053 | 0.0036 | | 0.00011 | 0.00011 | | | Y | Y | 0.083 | | Y | No detected value of B, Step 7 | |
| 119-125 | PCBs sum (2) | ug/L | | | | | | | | 0.00017 | **0.00017** | | | Y | Y | 0.065 | | Y | No detected value of B, Step 7 | |
| 126 | Toxaphene | ug/L | | | | | 0.21 | 0.0002 | | 0.00075 | 0.0002 | | | Y | Y | 0.24 | | Y | No detected value of B, Step 7 | |
| | DDT | ug/L | 0.6 | | | | | | | 0.00017 | **0.00017** | | | N | | | | | No detected value of B, Step 7 | |

DDT = The sum of:
4,4'-DDT, 2,4'-DDT,
4,4'-DDE, 2,4'-DDE,
4,4'-DDD and 2,4'-DDE

| | | | | HUMAN HEALTH CALCULATIONS | | | AQUATIC LIFE CALCULATIONS | | | | | | | | | LIMITS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Organisms only | | | Saltwater / Freshwater / Basin Plan | | | | | | | | | | | | |
| CTR# | Parameters | RPA Result - Need Limit? | Reason | AMEL hh = ECA = C hh O only | MDEL/AMEL multiplier | MDEL hh | ECA acute multiplier (p.7) | LTA acute | ECA chronic multiplier | LTA chronic | Lowest LTA | AMEL multiplier 95 | AMEL aq life | MDEL multiplier 99 | MDEL aq life | Lowest AMEL | Lowest MDEL | Recommendation | Comment |
| 69 | 4-Bromophenyl Phenyl Ethe | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 70 | Butylbenzyl Phthalate | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 71 | 2-Chloronaphthalene | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 72 | 4-Chlorophenyl Phenyl Ethe | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 73 | Chrysene | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 74 | Dibenzo(a,h)Anthracene | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 75 | 1,2-Dichlorobenzene | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 76 | 1,3-Dichlorobenzene | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 77 | 1,4-Dichlorobenzene | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 78 | 3,3 Dichlorobenzidine | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 79 | Diethyl Phthalate | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 80 | Dimethyl Phthalate | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 81 | Di-n-Butyl Phthalate | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 82 | 2,4-Dinitrotoluene | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 83 | 2,6-Dinitrotoluene | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 84 | Di-n-Octyl Phthalate | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 85 | 1,2-Diphenylhydrazine | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 86 | Fluoranthene | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 87 | Fluorene | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 88 | Hexachlorobenzene | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 89 | Hexachlorobutadiene | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 90 | Hexachlorocyclopentadiene | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 91 | Hexachloroethane | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 92 | Indeno(1,2,3-cd)Pyrene | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 93 | Isophorone | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 94 | Naphthalene | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 95 | Nitrobenzene | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 96 | N-Nitrosodimethylamine | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 97 | N-Nitrosodi-n-Propylamine | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 98 | N-Nitrosodiphenylamine | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 99 | Phenanthrene | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 100 | Pyrene | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 101 | 1,2,4-Trichlorobenzene | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 102 | Aldrin | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 103 | alpha-BHC | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 104 | beta-BHC | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 105 | gamma-BHC | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 106 | delta-BHC | Uc | No Criteria | | | | | | | | | | | | | | | No Limit | |
| 107 | Chlordane | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 108 | 4,4'-DDT | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 109 | 4,4'-DDE (linked to DDT) | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 110 | 4,4'-DDD | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 111 | Dieldrin | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 112 | alpha-Endosulfan | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 113 | beta-Endolsulfan | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 114 | Endosulfan Sulfate | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 115 | Endrin | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 116 | Endrin Aldehyde | No | MEC<C & B is ND | | | | | | | | | | | | | | | No Limit | |
| 117 | Heptachlor | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 118 | Heptachlor Epoxide | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 119-125 | PCBs sum (2) | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| 126 | Toxaphene | No | UD; effluent ND, MDL>C, and | | | | | | | | | | | | | | | No Limit | |
| | DDT | Yes | UD;Effluent ND,MDL>C & No | 0.00017 | 2.01 | 0.00034 | | | | | | 1.55 | | 3.11 | | 0.00 | 0.00 | | Limit required per TMDL |

DDT = The sum of:
4,4'-DDT, 2,4'-DDT,
4,4'-DDE, 2,4'-DDE,
4,4'-DDD and 2,4'-DDE

Ud = Undetermined due to lack of data
Uc = Undetermined due to lack of CTR Water Quality Criteria
C = Water Quality Criteria
B = Background receiving water data

# Exhibit 5

PARTIAL TRANSCRIPT OF BOARD MEETING

LOS ANGELES REGIONAL WATER QUALITY CONTROL BOARD

DECEMBER 9, 2021

Prepared by:

JAMS CERTIFIED TRANSCRIPTION
16000 Ventura Boulevard, Suite 1010
Encino, California 91436
Julie Messa, CET**D-403
Job No. SA21-01

MR. LLOYD: All right, madam. We are recording a broadcast and the floor is yours.

MS. PURDY: Thank you.

Board Member Stahl?

BOARD MEMBER STAHL: Yes. Now we'll get to the contested items, Renee. Item 16, consideration of the tentative Time Schedule Order for AES Redondo Beach LLC and the Redondo Beach Generating Station and I -- I -- I think we have a number of speakers in that regard.

First of all, staff presentation, I believe?

MS. PURDY: We do. Board Member Stahl, what we need to do is we --

BOARD MEMBER STAHL: You want administer the oath first?

MS. PURDY: Yeah. We need - we need you to administer the oath first. So, if you can just read the oath, and then those of us who need to will respond.

BOARD MEMBER STAHL: Will everyone testifying on Item 16 please take the following oath:

Do you promise that the testimony you are about to give will be the truth, the whole truth, and nothing but the truth under penalty of perjury?

Please respond with an "I do" or "yes."

MULTIPLE SPEAKERS: Yes.

BOARD MEMBER STAHL: So then we'll move on, Renee.

MS. PURDY: Yes, we will. We will move on to the staff

presentation, and we do have a PowerPoint that will be pulled up in just a minute here, and the staff presentation will be given by Tom Siebels, who is the project manager for this project.

BOARD MEMBER STAHL: Very good. Thank you.

MR. SIEBELS: Hello. Can you hear me okay?

MS. PURDY: Yes.

MR. SIEBELS: Okay. Great.

Good morning -- or I guess it's afternoon now -- members of the Board. My name is Thomas Siebels, and I am the project manager for the Redondo Beach Generating Station permit. Also with me today are Bronwyn Kelly, the unit chief of the Industrial Permitting Unit; Jeong-Hee Lim, the section chief of the Watershed Regulatory Section; and Sophie Froelich, our counsel from the Office of Chief's Counsel at State Board.

We'll be presenting for your consideration a Time Schedule Order for the AES Redondo Beach LLC, Redondo Beach Generating Station. I'm going to give you a lot of information as a background. Some of you will recognize some of this as a repeat of some information I presented last year for you. Item is being presented today due to recent developments with what's called the "OTC Policy." So I'm going to begin with a little background on what led to those developments.

1 Next slide, please.
2 So this facility is an electricity generating
3 station that uses once-through cooling water to cool its
4 generating units. The cooling water structures use
5 circulation pumps to draw -- draw water from a local source
6 through a screened intake, cycle the water through the plant
7 to cool the generators, and then discharge the water back to
8 a local source.
9 The federal Clean Water Act, Section 316(b),
10 requires that the location, design, construction, and
11 capacity of cooling water intake structures reflect the best
12 technology available for minimizing adverse environmental
13 impact. Now, environmental impacts of concern for cooling
14 water structures include impingement, which is the trapping
15 of organisms against the intake screens; and entrainment,
16 which is drawing organisms into the cooling water system.
17 On May 4, 2010, the State Water Board adopted the
18 statewide water quality control policy on the use of coastal
19 and estuarine waters for power plant cooling, and we call
20 this the "OTC Policy." The OTC Policy establishes
21 technology-based standards to implement Clean Water Act
22 Section 316(b) and reduce the harmful effects associated with
23 cooling water intake structures on marine and estuarine life.
24 The OTC Policy established final compliance dates
25 for several power plants throughout the state, and the

1 OTC Policy provided two alternatives for compliance, Track 1
2 and Track 2. The Track 1 alternative requires that the
3 facility achieve a 93 percent reduction of inflow -- intake
4 flow compared to the designed intake flow, and Track 1 also
5 requires that the through-screen intake velocity must not
6 exceed 0.5 foot per second. Track 2 alternative requires
7 site-specific controls that are equivalent to Track 1.
8 The OTC Policy initially established a final
9 compliance date of December 31, 2020, for the Redondo Beach
10 Generating Station. As I'll discuss later, that final
11 compliance date has since been extended. The discharger has
12 indicated that they will comply with the OTC Policy via
13 Track 1. Specifically, they will eliminate the intake flow
14 and velocity by permanently shutting down the units that use
15 OTC water.
16 Next slide, please.
17 The Statewide Advisory Committee on Cooling Water
18 Intake Structures, which we refer to as the "SACCWIS" --
19 sack-wis (phonetic) -- was convened by the executive director
20 of the State Water Board to advise the State Water Board on
21 the implementation of the OTC Policy. The SACCWIS is a joint
22 agency committee that includes representatives from
23 California Energy Commission, California Public Utilities
24 Commission, California Coastal Commission, California State
25 Lands Commission, California Air Resources Board, California

Independent System Operator, and the State Water Board.

The SACCWIS ensures that implementation plans and schedules established by the OTC Policy are realistic and will not cause disruption to the state's electrical power supply. Following the adoption of the OTC Policy in 2010, SACCWIS reviewed the initial implementation plans and schedules submitted by the power plant operators in order to ensure that the deadlines in the OTC Policy account for grid reliability, including permitting constraints. The SACCWIS continues to meet, review implementation schedules, and provide annual reports to the State Water Board to ensure grid reliability until the OTC Policy has been fully implemented.

The State Water Board may direct staff to amend the OTC Policy upon recommendation by the SACCWIS, if needed, to ensure continued grid reliability. In 2020 the SACCWIS recommended extending the compliance dates for several power plants to ensure grid reliability. On September 1, 2020, the State Water Board considered the SACCWIS recommendation and adopted an amendment to the OTC Policy that included new compliance dates.

Next slide.

There have been some more developments with the OTC Policy this year. On February 11th and March 25th of 2021, the "CPUC," California Public Utilities Commission,

1 issued additional decisions on resource adequacy. The CPUC
2 decisions addressed potential shortfalls to the state's
3 electrical supply in summers 2022 and 2023. Swaths of the
4 Western United States encountered a prolonged and extreme
5 heat wave in August 2020 that ultimately required rotating
6 outages to prevent widespread service interruptions.
7 As a result of the heatwave and a subsequent
8 directive from Gov. Gavin Newsom to carry out a root-cause
9 analysis, the CPUC initiated the rule-making process. The
10 CPUC decisions, again, recommended the extension of the
11 OTC Policy compliance date for the Redondo Beach Generating
12 Station.
13 Based on the CPUC decision, the SAACWIS, on
14 March 26, 2021, voted in favor of a recommendation to the
15 State Water Board that included a two-year extension of the
16 OTC Policy final compliance dates for the Redondo Beach
17 Generating Station. On October 19, 2021, the State Water
18 Board considered the SACCWIS recommendation and adopted an
19 amendment to the OTC policy that extended the final
20 compliance date for the Redondo Beach Generating Station by
21 two years, until December 31, 2023.
22 The Los Angeles Board is aware, I might mention,
23 that on December 6, 2021, the State Water Board was served
24 with a lawsuit filed by the City of Redondo Beach challenging
25 the most recent amendment to the OTC Policy on the grounds

that the State Water Board failed to comply with CEQA. That lawsuit, however, does not prevent the Board from hearing or considering the TSO before you today.

Next slide, please.

Now, with that background on the OTC Policy -- and I'll later explain how the amendments affect the Redondo Beach Generating Station, but first I'm going to provide a little background on the facility itself.

The Redondo Beach Generating Station is a steam electric generating facility located at 1100 Harbor Drive in the city of Redondo Beach. The facility has a generating capacity of over 1300 megawatts. The facility does not run continuously but operates when requested to meet the electrical needs of the grid, mostly during summer months. There are currently three generating units on site that use once-through cooling water. The facility is currently regulated by Order R4-2016-0222-A01 and Time Schedule Order R4-2020-0139.

Next slide.

Here's a map that shows the facility location in Redondo Beach across the street from King Harbor. As previously discussed, the three generating units operate using once-through cooling water drawn from King Harbor through intake channels. You can see on the bottom and toward the left that the OTC water for Units 5 and 6 is drawn

from King Harbor and discharged to the Pacific Ocean through Discharge Point 001, and on the right you see that the intake water for Unit 8 is drawn from King Harbor and discharged back to King Harbor through Discharge Point 002, and the -- the Unit 8 intake and discharge is important on the next slide.

Next slide, please.

So before discussing the proposed TSO, I want to provide a background regarding the effluent limitations in the permit.

Historically, the permits for the facility considered the receiving waters for the facility as ocean waters and therefore established permit limitations consistent with the California Ocean Plan. The Basin Plant, however, classifies King Harbor as an enclosed bay, and we saw on the previous map that the -- Discharge 001 is back to the enclosed bay -- and closed bays are subject to the State Implementation Plan, called the "SIP."

In 2003 the Regional Water Board notified the discharger of the reclassification of the receiving water. There were some delays in -- in setting up the permit because of the OTC Policy implementation, and so the first permit to reflect the reclassification of the receiving water was Order R4-2016-0222 that was adopted by the Los Angeles Water Board on June 9, 2016.

1 According to the procedures outlined in the SIP, the
2 reasonable potential analysis was performed based on
3 monitoring data and CTR criteria. This resulted in new
4 effluent limitations, including some more stringent ones than
5 those in the previous permit. And then later, on
6 December 10, 2020, the Los Angeles Board amended the policy
7 -- Amendment A01 -- which modified the permit to include the
8 2020 OTC Policy amendment that we've discussed and any future
9 amendments.
10 Order R4-2016-022-A01 [sic] was scheduled to expire
11 on September 30, 2021. However, approximately 180 days prior
12 to the expiration date, on April 1, 2021, the discharger
13 submitted a Report of Waste Discharge, "ROWD," to renew its
14 waste discharge requirements pursuant to Water Code Section
15 13260. On April 29, 2021, the Los Angeles Water Board issued
16 a letter in which it determined that the ROWD was complete
17 and, as such, the terms and conditions of the -- Order 2 --
18 R4-2016-0222-A01 are administratively extended pursuant to
19 40 CFR Section 122.6 and California Code of Regulations
20 Section 2235.4.
21 Next slide.
22 Prior to the adoption of the permit in 2016, the
23 discharger indicated that it was unable to comply with the
24 new effluent limitations and requested a TSO. The
25 Los Angeles Water Board evaluated monitoring data and

determined the request for a TSO to be appropriate and adopted TSO R4-2016-0223 concurrently with the permit. The TSO included interim limitations for temperature, pH, copper, and nickel, and also included a time schedule for compliance with the final effluent limitations by permanently shutting down Units 5, 6, 7, and 8. The TSO was subsequently amended to add interim limitations for DDT and to update the compliance schedule. The amended TSO expired on December 31, 2020.

In 2020 the discharger requested an extension to the TSO to include new compliance dates in the 2020 OTC Policy amendment. On 12/10/2020, the Los Angeles Water Board adopted TSO R4-2020-0139, which includes the new compliance dates. The current TSO expires on December 31, 2021.

Next slide.

Due to the new final compliance date of December 31, 2023, that was established in the 2021 OTC Policy amendment, the discharger has requested a new TSO. The additional time they're requesting is allowed per Water Code Section 13385. The discharger has complied with all previous TSO requirements, specifically by permanently shutting down Unit 7 on September 30, 2019. That reduced the intake and discharge volumes for discharge .002 from 674 million gallons per day to 334 million gallons per day. This

reduced the amount of impingement and entrainment -- and entrainment occurring and brought the discharger into compliance with the mass-based effluent limitations.

The Los Angeles Water Board determined the request for additional time to be appropriate and prepared the proposed TSO. The proposed TSO retains the interim limitations from the current TSO and requires compliance with the final effluent limitations by permanently shutting down Units 5, 6, and 8 by December 31, 2023.

Next slide.

The Los Angeles Water Board received three comment letters on the proposed TSO: from Heal the Bay; the City Attorney of the City of Redondo Beach; and from the discharger, AES Redondo Beach. After considering the comments, minor changes were made to revise the tentative TSO for clarification of the OTC Policy process and to incorporate more inclusive language.

The letter from the discharger was in support of the proposed TSO, and no further issues were -- needed to be resolved with that, but concerns expressed from the other letters will be discussed in the following slides.

Next slide.

Heal the Bay requested that interim limitations be removed from the tentative TSO with the opinion that the discharger has had sufficient time to address the issues.

1 Due to the reclassification of the discharge from
2 an ocean to estuarine discharge, new effluent limitations
3 were established in the 2016 permit. The discharger
4 requested additional time to comply with the new limitations.
5 The Los Angeles Water Board evaluated the request and
6 determined interim limitations to be appropriate.
7 The interim effluent limitations may not be removed
8 from the tentative TSO because they are required by the
9 California Water Code Section 13385, which states: If the
10 time schedule exceeds one year from the effective date of the
11 order, the schedule shall include interim requirements and
12 the dates for their achievement. The interim requirements
13 shall include both effluent limitations for the pollutant or
14 pollutants of concern; and actions and milestones leading to
15 compliance with the effluent limitation. Therefore, the --
16 the interim effluent limitations are required by the
17 California code, and they are included in the tentative TSO.
18 Heal the Bay also recommended using a Section 13308
19 TSO, rather than a 13300 TSO. However, the circumstances
20 necessary to justify the use of a 13308 TSO are neither
21 available to use nor are they necessary because the
22 discharger has complied with TSOs to this point and is not in
23 violation of any other enforcement action.
24 Heal the Bay also commented that the TSO should
25 require the discharger to assess environmental impacts of

1 continued discharge. Los Angeles Water Board responds that
2 pursuant to Water Code Section 13389, the TSO is exempt from
3 CEQA requirements. Furthermore, the OTC Policy sets forth
4 appropriate CEQA and supplemental environmental document for
5 all power plants considered. And as cited in the TSO itself,
6 the TSO is exempt from the provisions of the California
7 Environmental Quality Act, Public Resources Code Section
8 21100 in accordance with the California Code of Regulations
9 Title 14 Sections 15301 and 15321, subdivision (a)(2).
10 Next slide.
11 Michael W. Webb, city attorney of the City of
12 Redondo Beach, submitted a number of comments on behalf of
13 the City. The comments stated that grid reliability issues
14 are not a justification for a TSO. The Los Angeles Water
15 Board responds that while grid reliability issues were the
16 justification for the OTC Policy amendment, they were not the
17 justification for the TSO. As previously stated,
18 justification for the original TSO was the inability of the
19 discharger to comply with the new effluent limits, and this
20 extension of the TSO is allowed under the Water Code.
21 The letter also questioned whether the discharger
22 has made diligent progress toward compliance and whether the
23 TSO includes a detailed schedule of specific actions. The
24 Los Angeles Water Board responds that the only requirement to
25 date that they had to comply with was the shutting down of

1 Unit 7, which was accomplished on schedule and significantly
2 reduced the amount of impingement and entrainment occurring
3 and brought the discharger into compliance with the mass-
4 based effluent limitations. Also, the TSO includes specific
5 action of shutting down the remaining three generating units
6 by December 31, 2023, and the TSO also requires semiannual
7 progress reports.
8 The letter also expressed concern that the TSO
9 allows the discharger to operate without the risk of
10 mandatory minimum penalties, "MMPs," for violations. The
11 Los Angeles Water Board responds that the discharger is still
12 subject to MMPs for violations of effluent limits for
13 pollutants not covered under the TSO, as well as for
14 violations of the interim limitations in the TSO. In fact,
15 the discharger was assessed MMPs for violations of these
16 effluent limitations in the amount of $36,000 on July 25,
17 2018, and $30,000 on October 17, 2019.
18 Next slide.
19 So this slide provides an overview of the options
20 that the Board has with regard to the proposed TSO. The
21 Board may adopt the revised tentative TSO as proposed by
22 staff, the Board may modify and adopt the revised tentative
23 TSO, or the Board may take no action.
24 Next slide.
25 Staff recommends that the Board adopt the revised

1 tentative TSO for the Redondo Beach Generating Station
2 because the discharger has complied with previous TSO
3 requirements and additional time is warranted to allow the
4 discharger to comply with the permit by shutting down
5 Units 5, 6, and 8 according to the schedule established in
6 the 2021 OTC Policy amendment.
7 Next slide.
8 So this completes our presentation, and we are
9 available to answer any questions the Board may have.
10 MS. PURDY: So, Board Member Stahl, we can take any
11 questions, if you'd like, now, but we could also just go
12 ahead and move on to our speakers for this item and then,
13 once you hear from the speakers, there can, you know,
14 obviously be an opportunity to ask staff or the speakers any
15 questions.
16 BOARD MEMBER STAHL: I'm not sure of the pleasure of the
17 Board, but I would like to hear from the other speakers and
18 then (inaudible) item but --
19 BOARD MEMBER MUNOZ: (Inaudible)
20 BOARD MEMBER STAHL: -- you feel. (Inaudible) the Board
21 members agree or disagree or have comments?
22 BOARD MEMBER MUNOZ: I agree with you.
23 MS. PURDY: I think --
24 MR. NAHAI: Yeah. I agree as well (inaudible) speakers.
25 Yes.

1 MS. PURDY: So, Board Member Stahl, the first speaker
2 that we do have is from AES, and that is Mark Miller.
3 BOARD MEMBER STAHL: Mr. Miller --
4 MR. MILLER: Good afternoon, Chair.
5 BOARD MEMBER STAHL: -- you're on.
6 MR. MILLER: Okay. Good afternoon, Chair, members of
7 the Board. Thank you for the opportunity to speak today.
8 My name is Mark Miller, and I am the AES California
9 business leader and general manager for AES's Southland
10 facilities. AES Redondo Beach LLC is one of the facilities
11 that I oversee. I'm here today on behalf of
12 AES Redondo Beach as the Board considers the tentative
13 Time Schedule Order that would support the continued
14 operation of the facility through December 31, 2023.
15 As you may recall, Redondo Beach was here last
16 December seeking a modification of its NPDES permit and
17 renewal of associated Time Schedule Order for its OTC
18 operations through 2021. The NPDES permit was modified to
19 date concurrent with the OTC compliance date established by
20 the State Water Board. Accordingly, the NPDES permit is not
21 an issue -- is not at issue here today.
22 Due to continuing concerns regarding grid
23 reliability in the next two years, the State Water Resource
24 Control Board decided on October 19, 2021, to amend the
25 OTC Policy to allow Redondo Beach to allow continued

operations through the end of 2023. The NPDES permit is in place, as described by Mr. Siebels, but the TSO requires renewal. This is the reason AES Redondo Beach is before you today.

The TSO ensures protection of water quality while recognizing the need to generate electricity for the benefits of Southern California and the entire state. To the extent that other parties may refuse -- raise issues extraneous to the TSO, we respectfully request that the Board focus its attention only on the issues relevant to the decision the Board must make on the matters before you today and adopt the tentative Time Schedule Order as proposed by your staff.

Finally, on behalf of AES, I would like to thank the Regional Water Board staff, executive staff, and counsel for a tremendous effort, dedication, and the skill they put forward in preparation of the Time Schedule -- tentative Time Schedule Order. Please let me know if there are any questions that I might answer. Thank you.

BOARD MEMBER STAHL: Very good. Thank you very much, Mr. Miller.

The next speaker is Nicholas Ghirelli.

MR. GHIRELLI: Good morning, Board Members. My name is Nick Ghirelli, and I represent the City of Redondo Beach today.

Just last year I and other representatives of the

1 City and the community appeared before the Board urging you
2 to deny another extension of the TSO pending before you.
3 This is because for over a decade the City, its residents,
4 and the surrounding South Bay community have eagerly awaited
5 the closure of the Redondo Beach Generating Station. They
6 have wanted this power plant closed for many critical
7 environmental reasons, including the air pollution it emits
8 into the region.
9 For your purposes, though, there is no question
10 that this power plant kills marine life in its once-through
11 cooling system and discharges polluted water into the
12 Pacific Ocean and King Harbor. The plant is designed
13 (inaudible) discharge heated water, and this thermal
14 discharge is one reason why a TSO extension has been
15 requested. Studies have shown that thermal discharges from
16 the Redondo Beach Generating Station extend thousands of feet
17 east and west of King Harbor, harming fish populations and
18 subtidal algae. Yet this TSO extension does not protect the
19 fish populations or water quality.
20 There is little question that this TSO is being
21 issued to merely align its expiration date with the new
22 OTC Policy compliance deadline of December 31, 2023. The
23 decision is not grounded in science or water quality. It is
24 solely based on grid reliability issues, which was the only
25 justification for the State Board's extension of the

1 OTC Policy deadline.
2 The staff response states that the proposed TSO
3 contains specific control measures and a time schedule
4 intended to bring the plant into compliance with final
5 effluent limitations. The alleged control measure is that
6 the power plant will shut down at the end of the extension in
7 2023. But this is the very same position asserted by the
8 Board during last year's modification of the permit and TSO
9 -- and TSO. I'll quote from last year's staff response.
10 Quote, (reading) The TS -- the tentative TSO requires the
11 discharger to permanently shut down Units 5, 6, and 8 by
12 December 31, 2021. This is a specific control measure and
13 time schedule that will bring the discharge into compliance
14 with the final effluent limitations, unquote.
15 So the City is left to ask: What happened? The
16 discharger will not come into compliance with the final
17 effluent limitations by December 31, 2021, and there is no
18 legitimate justification within this Board's purview to not
19 require compliance with the effluent limitations by the end
20 of this year. The TSO must be as short as possible, under
21 the Water Code, and you've already determined that
22 December 31, 2021, is a possible compliance deadline.
23 A TSO should also be -- only be extended if AES has
24 taken diligent steps to require compliance with the effluent
25 limits identified in the TSO. TSO doesn't support that

1 determination. The only action taken to bring the discharger
2 into compliance has been the State Board's extension of the
3 OTC Policy. The sole reason for that extension was grid
4 liability, and no measures were added to help AES achieve
5 compliance with its effluent limitations.
6 So extending the TSO will therefore allow AS -- AES
7 to continue discharging harmful pollutants in excess of what
8 is allowed under the permit for two full additional years.
9 No new control measures are offered other than the relief on
10 the existing time schedule. Denying the TSO will not harm
11 grid liability but would help AES -- would hold AES
12 accountable for its discharges. For this reason -- for these
13 reasons, the City respectfully requests that the Board reject
14 the TSO extension, and thank you for your time.
15 BOARD MEMBER STAHL: Thank you, Mr. Ghirelli.
16 The next speaker is Annelisa Moe from Heal the Bay.
17 MS. MOE: Good afternoon, Members of the Board and
18 staff, for the record, and my name is Annelisa Moe with
19 Heal the Bay.
20 I would first like to thank your staff,
21 particularly Thomas and Bronwyn, for their work on the permit
22 associated with the Time Schedule Order and for taking the
23 time to have a phone call with me to answer some of the
24 questions that I had during the public comment period.
25 However, I would like the opportunity to continue the

1 discussion about the comments sent in by not only
2 Heal the Bay but also Sierra Club, Surfrider Foundation, and
3 L.A. Waterkeeper.
4 I also see that the timer is counting down. I did
5 request five minutes to speak today. I'm wondering if that
6 is a possibility.
7 MS. PURDY: Yes, it is. Thank you --
8 BOARD MEMBER STAHL: Yes. Yes, you have that time,
9 Annelisa.
10 MS. MOE: Thank you. I appreciate it.
11 Now, I understand that the extension approved by
12 the State Board in October of 2021 allows for continued
13 once-through cooling operation at the facility through
14 December 2023 in spite of the resounding opposition from
15 local community and Redondo Beach, as well as environmental
16 groups, but this operational extension does not automatically
17 allow for the continued discharge of contaminated effluent
18 through a Time Schedule Order that includes interim limits
19 that are performance based and not risk based. I urge the
20 Regional Board to deny the Time Schedule Order or to remove
21 the interim limits from the Time Schedule Order and, instead,
22 hold permitees accountable to federal water quality
23 standards.
24 I further urge the Board to require an updated
25 impact assessment to look at additional impacts during this

1 extension period with mitigation for any additional impacts
2 identified. By doing this, the Regional Board would not deny
3 the facility its ability to operate through December 2023.
4 That permission has already been granted by the State Board.
5 You will simply be applying some accountability for the
6 negative impacts this continued operation has on the health
7 of the receiving waters and on the local community. There is
8 no requirement in this case to approve a Time Schedule Order
9 and allow for contaminated discharge. So that is a decision
10 that you can make here today.
11 I would also like to go through the time line
12 leading up to the request for this new Time Schedule Order.
13 This is the fifth time extension requested by the facility
14 since 2016 to meet the, quote-unquote, "new water quality
15 standards." However, the facility was first made aware of
16 the reclassification of its receiving waters 20 years ago,
17 back in 2001. The Regional Board has approved the first four
18 of the five extension requests and now must decide what to do
19 with this latest request, but at what point do these
20 extensions end?
21 Further, the facility was granted a 1-year
22 extension, followed by this latest 2-year extension, beyond
23 the 10-year grace period originally allowed in the 2010
24 Once-Through Cooling Policy. So for both of these cases, the
25 first being achieving water quality standards, and the second

being achieving grid reliability so that OTC operation could cease -- in both of these cases, the request for extension demonstrates a failure to plan, rather than an uncontrollable circumstance.

Now, recognizing the significant impacts of once-through cooling operations on California's fisheries, estuaries, bays, and coastal waters and, once again, urge the Board to deny this Time Schedule Order or to remove the interim limits and hold permitees accountable to federal water quality standards.

I further urge the Board to require an updated impact assessment and additional mitigation as necessary even if it's not specifically required due to the CEQA exemption.

Thank you very much for your time and consideration. I'm happy to answer any questions as you discuss these comments.

BOARD MEMBER STAHL: Annelisa, thank you. Thank you very much.

Next up is Benjamin Harris, L.A. Waterkeeper.

(Pause.)

MS. PURDY: Board Member Stahl, I'm just checking to see if he's still in the -- in the Zoom meeting here. Let me see. I'm not seeing him at the moment. Let me just do one more check to make sure.

I don't believe that he is in the Zoom meeting any

1 longer, Board Member Stahl. So that may complete our public
2 comments on this item.
3 Let me just ask if there are any other attendees in
4 the Zoom meeting who wish to speak on Item 16, if you could
5 please raise your hand just so I can see you, and if so,
6 we'll -- we will promote you so you can provide comments, but
7 I'm not seeing any hands up.
8 So, Board Member Stahl, I think we are prepared to
9 go into Board Member questions and deliberation.
10 BOARD MEMBER STAHL: Okay. Very good. Thank you,
11 Renee.
12 And I thank you to the speakers.
13 Any comments or questions for the Board Members --
14 from the (inaudible)?
15 MS. MUNOZ: I just want to make sure that I
16 understand that the staff recommendation is to grant them the
17 TSO; is that correct?
18 BOARD MEMBER STAHL: As -- as I read it, yes.
19 But, Renee?
20 BOARD MEMBER MUNOZ: Okay.
21 MS. PURDY: Correct.
22 BOARD MEMBER MUNOZ: Could you -- can you explain that
23 to me, please, because you know that I don't favor TSOs, and
24 I never have, although I've never voted against one. So I'm
25 trying to figure out the justification for extending this

one.

MS. PURDY: Jenny, would you like to respond to that, or would you like me to?

MS. NEWMAN: I can take a stab at it, and then you can add and -- or maybe Tom can -- can chime in if -- if he likes.

The -- the power plant has effluent limits for temperature, copper, nickel, DDT, and pH that they can't meet. The TSO allows them time to meet those limits. The reason they can't meet the limits is because for a long time they operated under a permit that assumes they had higher limits, and the recent 2016 permit includes more stringent limits. So they need time to comply with the new, more stringent limits, and that's what the TSO is for.

The -- at the same time, under the Once-Through Cooling Policy, the facility is required to, essentially, under the compliance track they've selected, shut down operation of the -- the once-through cooling and the power plant so that there would be no more discharge. So the discharger -- the facility -- wants to use the same compliance approach to comply with the Once-Through Cooling Policy -- that is, shutting down the plant -- to comply with the permit limit. They will be meeting their permit limit once the plant is shut down.

So, when the State Board extended the compliance

1 date for the power plant shutdown, the -- the discharger
2 still wants to use that compliance option for its effluent
3 limits and so asked to extend the compliance date for the TSO
4 to align with the compliance date for the shutdown.
5 And we think -- we're recommending that we grant
6 that TSO because it's the most efficient approach to
7 achieving both the effluent limits and stopping the
8 impingement and entrainment that are regulated -- of -- of
9 marine life that's regulated by the Once-Through Cooling
10 Policy.
11 BOARD MEMBER STAHL: I -- I -- I -- I don't know if
12 you're finished --
13 MS. NEWMAN: I am finished.
14 MS. PURDY: And, Board Member Munoz, did that help
15 answer your question? One, clarifying staff's recommendation
16 and, two, providing an explanation of why we're recommending
17 a TSO in this instance?
18 BOARD MEMBER MUNOZ: Not enough for me to support it,
19 and I want to see what my other board members have to -- to
20 share. It's just that we give people time -- they ask for a
21 TSO, we give them time to take care of business, and then
22 they come back for another TSO, and that's the problem is
23 that when do we say enough is enough? When do we say, "You
24 were given the time that you said you needed to accomplish
25 what you need to accomplish, and for some reason you don't,

and then you come back to us?"

I just -- we've done this over and over again since I've been on the Board and -- I understand there's certain circumstances that do take place where you need to extend it, but when you have the City of Redondo Beach opposing the TSO, we have to listen to that, and when we have organizations that are concerned about people's health and the health of the environment, we have to listen to that. So I'm going to listen to my board members to see if they provide me with some insight where I feel comfortable voting "yes" for it. Thank you.

MS. PURDY: Okay. And, Board Member Munoz, if I might -- I know Board Member Nahai, I see your hand up as well -- but maybe let me just add a little bit to what Jenny said in response, which is I understand what you're hearing -- what you're saying, definitely, and your perspective. I think in this instance the -- you know, the -- the facility -- the Redondo Beach Generating Station has basically been -- you know, it -- it's been determined that it needs to keep operating to meet the -- the energy needs of the state for a while longer -- for two more years basically.

As Jenny explained, the Once-Through Cooling Policy, which is a State Board policy that applies statewide to a number of these generating stations that are using this type of technology, basically gave facilities two approaches

1 to complying and told them within a certain time frame to --
2 to report as to which approach they would take to comply with
3 the Once-Through Cooling Policy, which was basically to
4 reduce those impacts that we were talking about, what we call
5 the "impingement and entrainment" of aquatic life in the
6 once-through cooling process system.
7 And so in this case, the facility has said it's
8 going to comply by what we call "Track 1." So there were two
9 options provided. It -- it said several years ago it would
10 apply -- it would comply via Track 1 with the requirements of
11 the statewide policy, and basically what that means is
12 reducing the amount of impingement and entrainment. I mean,
13 one way to do that is, you know, to -- to -- to make some
14 changes to the -- the facility itself. Another way is to
15 just shut down the facility, and in this case the generating
16 station intends to shut down and is already in the process of
17 -- of property transfers and -- and that sort of thing in
18 anticipation of it not operating any more.
19 So I think what -- you know, what we were trying to
20 explain, both in Tom's staff report and then Jenny's response
21 to your question, is that per a Water Board policy, the
22 generating station has told us that the way that they are
23 going to comply with the policy and also with their permit is
24 by completely shutting down the generating station. They
25 won't be operating it any more and therefore there won't be a

1 discharge.
2 And so I think, you know, that's why we're
3 recommending -- and I think the way Jenny phrased it is it's
4 -- you know, the most efficient way to comply is for them to
5 continue on that path of shutting down their facility -- is,
6 you know -- it is frustrating that there's another -- you
7 know, there's a need for another extension from the point of
8 view of -- extension to their continued operation because of
9 the energy needs of the state, but, you know, they -- they
10 are ultimately planning to basically stop discharging, and so
11 of course then they -- they will be in compliance. They
12 actually won't need a discharge permit at that point.
13 So I don't know if that -- that helps clarify
14 things at all but -- or if I just repeated what Jenny said.
15 I appreciate your patience if that's pretty much all I
16 achieved in that extra explanation.
17 But, Board Member Nahai, I -- I see, like I said,
18 you have your hand up as well.
19 BOARD MEMBER NAHAI: All right. Yeah. Thank you.
20 And thank you for -- for -- Mr. Siebels for that --
21 for that presentation and -- and I -- and I understand both
22 the responses that -- that Jenny gave and which you gave,
23 Renee. Thank you for that.
24 But I'm -- I'm, fortunately or unfortunately, very
25 familiar with -- with this situation because we had to deal

1 with the whole OTC Policy back in 2010, 2009 when I was the
2 general manager at -- at ADWP, and we knew at that time that
3 -- that -- that this -- that this practice of -- of
4 once-through cooling would have to end, that -- that -- that
5 the -- that the impingement and the entrainment issues were
6 something that really could -- could -- could no longer be --
7 be tolerated, but we tried to get as much time in order to do
8 that, and so there was the 2018 date, and then so that's been
9 -- that's been extended.
10 And -- and so I -- I know -- I know that we at the
11 time started to prepare for the day when -- when -- when
12 there would either have to be dry cooling or a shutdown or --
13 or there -- the repowering wouldn't occur with respect to
14 these plants and -- and -- and so on. This is not a sudden
15 thing that's been visited upon folks.
16 And -- but it -- it -- it appears to me that we've
17 got -- we've got two issues here and -- and -- and I want to
18 make sure that -- that we're not conflating them, and I
19 wanted staff's response on this: But for the fact that there
20 was in the summer of 2020 rolling blackouts and for which the
21 -- the -- and the CAISO necessary decision, therefore, to
22 have plants continue to run -- but for that, 2021 would have
23 been the date and -- and 2021 would have been the time that
24 -- that -- that this facility would have to comply with --
25 with water quality requirements.

1 The -- the -- the only reason, it appears to me --
2 and I stand to be corrected, perhaps. The only reason why --
3 why we're -- why we're having this conversation right now is
4 because there were rolling blackouts in the summer of 2020
5 and the CAISO has asked for these -- for these plants to
6 continue running, and therefore they're -- they're continuing
7 to run but I -- but I -- I think where -- where I'm having
8 some difficulty is why does that mean that the plant doesn't
9 have to comply with -- with -- with the requirements that it
10 would have been under had -- you know, had -- had the -- the
11 state, for electricity reasons, not decided to extend the OC
12 -- OTC dates? So that's one question that I have.
13 The second question is that -- you know, that just
14 because this is exempt from CEQA doesn't mean that the people
15 of Redondo Beach aren't entitled to receive some kind of
16 environmental assessment and it -- it doesn't matter that
17 it's not -- so what if it's not subject to CEQA. We've got
18 the City of Redondo Beach here on behalf of its -- of its
19 residents very forcefully, you know, arguing for -- for
20 compliance with water quality regulations. I would think
21 that -- that the minimum that -- that the facility would want
22 to do is voluntarily offer to tell us what impacts its -- its
23 operations are having on the environment. The fact that that
24 has become an -- an -- an issue is -- is baffling to me.
25 So -- so I'm -- I'm having -- I'm having some

1 difficulty, quite frankly, supporting yet another extension
2 because the only reason for the extension is because of -- is
3 because of the State's desire to have these facilities
4 continue to run because we had rolling blackouts in the
5 summer of 2020 and -- and I don't see why that means,
6 therefore, that there shouldn't be compliance with -- with --
7 with -- with -- with water quality regulations.
8 And the other thing that concerns me a little is
9 that -- is that it may well be, right -- because on -- on our
10 march on the road towards a carbon-free future, you know -- I
11 don't know what the summer of 2022 is going to be like,
12 right, and it's -- and it's quite possible that -- CAISO has
13 a program -- they call it "RMR." "RMR" means "run" -- "must
14 run," and therefore it's a way for -- for them to have fossil
15 paths continue to run, again, for grid reliability. Are we
16 going to get another extension request after we've had one,
17 after one, after one?
18 So I'm -- I'm just -- I'm -- I'm having some
19 difficulty with -- with -- with supporting the staff
20 recommendation but I -- I -- I welcome staff's responses.
21 MS. PURDY: So --
22 BOARD MEMBER STAHL: Any questions? Mike -- Board
23 Member Mendez, do you have comments or questions?
24 BOARD MEMBER MENDEZ: Sure. Just two clarifying
25 questions.

1 Thank you mainly to the -- my Board --
2 Board Members Munoz and Board Member Nahai for putting --
3 bringing your concerns so eloquently and so clearly.
4 But I have two clarifications. So is this the
5 fifth or the sixth -- would this be the sixth request for TSO
6 or the fifth?
7 MS. PURDY: Tom --
8 MS. NEWMAN: I'm going to let Tom answer that.
9 MS. PURDY: Yeah. That would be great.
10 MR. SIEBELS: Yeah. So the history on that is that the
11 first request was 2016 when they got the new permit with the
12 new limits that they couldn't meet. Then there was an
13 amendment that -- that they requested to also add DDT as the
14 pollutants they couldn't meet. There was another amendment
15 that -- that switched the order of which units were being
16 retired. Unit 7 switch was something else, and Unit 7 wound
17 up getting retired first. And then there was last year
18 because of the extension of the OTC Policy and now what we're
19 presenting. So this would be -- there was a TSO, two
20 amendments, another TSO, and this would be the third TSO. So
21 a total of five TSO actions.
22 BOARD MEMBER MENDEZ: Okay. And then -- so if we do not
23 grant this TSO, what happens? What's the scenario?
24 MS. PURDY: So, if we do not grant this TSO, they -- as
25 you heard, I think, in Tom's presentation, I mean, they are

1 subject to an NPDES permit. So they have a discharge permit,
2 which the Board reissued recently. That permit has final
3 effluent limitations in it for the pollutants that are
4 addressed in the TSO -- the ones that they cannot currently
5 meet because of the fact that the effluent limits were
6 changed and became more stringent with the reclassification
7 of the water body. They would not be able to consistently
8 comply with those effluent limits.
9 And so, you know, they -- there -- there would be a
10 potential enforcement if they did not comply and there were
11 violations of those effluent limits. Then were there
12 violations, there are mandatory minimum penalties that are
13 associated with some violations if they are either considered
14 serious or chronic, and then of course there's the ability
15 for discretionary enforcement action on the part of the Board
16 as well.
17 So they do have a discharge permit, so they are
18 authorized to discharge, but they are not able to
19 consistently meet some of their effluent limits in that
20 permit.
21 BOARD MEMBER MENDEZ: Okay. Thank you.
22 BOARD MEMBER STAHL: I -- I -- my comment is -- and I
23 went back and -- and reviewed, as best I could, the record
24 and the discussions that the State Board had in October, and
25 I think it's fair to say that they went through the same

1 machinations or discussion here and -- and concern about
2 continuing to grant permission for them to contain a
3 discharge. And -- and they balanced it as best they could,
4 from what I read, as to they're looking at grid reliability,
5 as well as the protection of the water environment.
6 Now, as I -- as I'm read -- and so you have -- you
7 have five learned, certainly more-than-well-intentioned,
8 dedicated -- people dedicated to the protection of the
9 environment that are members of the State Board, and they
10 decided to move ahead and allow -- and grant the extended
11 time to 2023 for -- for the Redondo Beach station.
12 As I understood the staff presentation here, we --
13 we looked at the monitoring data -- and one question of us
14 examining the details of grid reliability were that the
15 State Board was considering that, but we looked at the
16 monitoring data and -- and your recommendation is based on
17 that, and so I -- I -- I haven't had a chance -- and I don't
18 think the Board has either -- to look at the kind of
19 monitoring data that -- that you've examined and come to the
20 conclusion that you did -- I say "you" -- I mean the staff --
21 Renee, you and the staff and the recommendation before us.
22 So while it is -- it is a -- a difficult choice --
23 I mean, they have shut down Unit 7, it -- it seems to me in
24 consideration of all of the data -- the deliberations of --
25 and the conclusions that the State Board came to and what our

own staff did in terms of delving into the data that we should go with the staff recommendation.

So I don't know if -- how else the Board wants to proceed on this. I would make a motion to adopt the staff recommendation.

(Pause.)

MS. PURDY: Board Member Nahai, I see your hand is up. Is that from before, or is that a new hand up?

BOARD MEMBER NAHAI: I'm -- I'm -- I'm -- I'm not sure.

MS. PURDY: Okay.

BOARD MEMBER NAHAI: But -- but I -- but I -- I will say that the -- that the -- that the -- the State Board and -- and the -- the -- the -- the regulatory authorities on the -- on the electricity side of things basically said to -- to the coastal plants, right, "You can continue." So -- so -- at least my reading of the record was that the State Board didn't make a decision particular to this facility.

And -- and I think -- and I think that in terms of the NPDES permit, when was the NPDES permit issued? What date was that?

MS. NEWMAN: 2016.

BOARD MEMBER NAHAI: 2016.

MS. NEWMAN: -- go ahead, Tom.

MS. PURDY: And then it was reissued when, Tom?

MR. SIEBELS: It was issued 2016, and then last year we

1 amended it just to include updated OTC Policy language.
2 MS. PURDY: That's right.
3 BOARD MEMBER NAHAI: Okay. Okay. But those limits,
4 right -- those limits were -- were put -- were put in place
5 in 2016?
6 MR. SIEBELS: Correct.
7 BOARD MEMBER NAHAI: So five years ago? Okay.
8 MS. PURDY: Yes. Right.
9 I mean, one -- one thing I'm wondering --
10 Board Member Stahl, I acknowledge you made a motion. I -- I
11 don't know if our team would like to take a short break just
12 to see if there's any other questions that we might be able
13 to answer in terms of the issues that Board Members have
14 raised before you -- you take a final vote on the matter --
15 or -- or seek a second. So one thing we could do is take --
16 just take a short break so that we could see if there are any
17 additional questions that have been raised that perhaps we
18 could provide some more information on before the Board makes
19 a -- a decision.
20 BOARD MEMBER STAHL: All right.
21 BOARD MEMBER NAHAI: I mean, that's -- just -- for me,
22 that's fine -- absolutely fine with me, Renee, but I think
23 Board Member Stahl has -- has put a motion on the table, and
24 it's not getting a second. So, I mean, if you -- if you
25 think that there is more information that needs to be

1 provided that will -- that will change that, of course, but
2 -- but as I'm -- as I'm seeing it, there was a deafening
3 silence. So I -- I don't -- it -- it just appears to me that
4 -- that the motion to -- to approve the staff recommendation
5 is -- is not going to get a second.
6 MS. FROELICH: So technically, Board Member Nahai,
7 seconds are not required since we don't use Roberts but we
8 use -- oh gosh, the "Standard Code of Parliamentary
9 Procedures" by Sturgis. However, I -- I think what you're
10 speaking to is an indicia of support; correct?
11 BOARD MEMBER NAHAI: Correct. Correct.
12 MS. FROELICH: I guess there is one thing I think I will
13 add just to make sure we have a complete picture.
14 Under 13385(j)(C)(3), there are specific
15 requirements for a TSO. I am terrible when it comes to
16 memory; so I am going to have to actually quote them for the
17 record. And give me one second. I just want to make sure
18 that this is very clear.
19 So, if you have a TSO, the Board must consider --
20 here it is -- (reading) a schedule that is as short as
21 possible, taking into account the technological, operational,
22 and economic factors that affect design, development, and
23 implementation of control measures that are necessary to
24 comply with the effluent limitation (end reading).
25 And then it goes on to say, (reading) Except for

1 the purposes of this subdivision (reading), you know, if
2 you're going to actually have a schedule that exceeds five
3 years in length -- which this one does -- you have to have
4 Board approval, and then it says you have to -- gosh, where
5 is it? Essentially, you have to -- I'm going to quote from
6 the TSO so I don't make a mistake, but you have to actually
7 have full -- you have to make sure that they have -- the
8 discharger has actually made significant progress towards
9 compliance, right.
10 So in the first instance, they shut down their
11 generator. In the second instance they chose to actually
12 shut down -- they shut down one of their generators, and I'm
13 not going to get the -- for purposes of time -- just give me
14 a second, and I will find the exact same -- the exact things
15 that they have already done.
16 MR. SIEBELS: It was 2019, Sophie, that they shut down
17 Unit 7.
18 MS. FROELICH: Thank you. I appreciate that assist --
19 when they shut down Unit 7. And then -- and they also chose
20 to comply with the OTC Policy by shutting down the entire
21 facility, and as I think you've heard, they're actually --
22 they've actually taken steps in that direction by starting
23 the property transfers and things like that. So they
24 actually have taken steps to comply legally with 13385, and
25 they have completed their legal requirements to do so in that

1 regard.
2 I think what you're getting is, you know, at this
3 point what happens if there's another extension? I think --
4 you mentioned that -- Board Member Munoz, you mentioned that
5 in particular -- and that is something for you to consider.
6 I mean, another option might be to add additional
7 requirements that they have to do later on as we go down the
8 line. In this case it's been determined that they need to
9 operate; they already have a permit to operate. The TSO just
10 allows them to operate without accruing mandatory minimum
11 penalties.
12 And I think one of the things, you know, that I
13 think the Board is required to weigh under 13385 is what is
14 the most technologically and economically sound option here?
15 And one of those things -- I think has been mentioned by
16 staff -- is the fact that this is the most efficient way, and
17 I believe -- and I would defer to Jenny and Tom and Renee on
18 this, but I believe coming into compliance by changing the
19 track of compliance at this point would be very costly, and
20 that is one -- that is one issue, I think.
21 Jenny, correct me if I'm wrong?
22 BOARD MEMBER MUNOZ: I have a response to what you've
23 said, Attorney Sophie.
24 MS. FROELICH: Sure. Uh-huh.
25 BOARD MEMBER MUNOZ: You talked about economically

1 feasible. What about environmentally feasible? What about
2 --
3 MS. FORELICH: Sure.
4 BOARD MEMBER MUNOZ: Isn't -- we're a regulatory agency,
5 and it has always grated me when entities come to us and ask
6 for second and third TSOs -- almost like when they have to.
7 They don't -- like a year from -- a year ago, if they would
8 have come to us and said, "You know what? We have predicted,
9 we have timed it, and it's going to take us a little longer,"
10 but it's always at the last minute, and I just can't support
11 this and -- you've got the City of Redondo Beach that's on
12 top of the stuff saying they don't want a -- they don't them
13 to get a TSO, and they've not convinced me that they have
14 been diligent. You tell me they've been diligent. If
15 Mr. Thomas can tell -- share how they have been diligent and
16 responsible to make sure they took care of business so they
17 wouldn't have to ask for a TSO, then I'm willing to listen.
18 Mr. Thomas?
19 MR. SIEBELS: Sure. I can try to, again, summarize a
20 little bit, maybe add a little bit.
21 So in this OTC compliance thing, obviously the
22 power plants were told to come into compliance. Some power
23 plants have done other things, like built new generating
24 units that don't use OTC water. In fact, AES has done that
25 -- is doing that with their power plant in Long Beach, the

1 Alamitos. In this case they originally discussed doing that,
2 building new -- new units that didn't use OTC water -- but
3 then at some point the decision was made that the plant would
4 just shut down. So obviously it wouldn't make sense to build
5 new -- new units when you're going to shut down in a year.
6 Treatment -- you know -- in many cases, when
7 someone will request a TSO, it's because they're going to
8 build a treatment system or something, and if they come back
9 a year or two and they didn't do anything to build the
10 treatment system, then, you know, what you're saying would
11 apply exactly, you know, why would we, you know, honor that
12 --
13 BOARD MEMBER MUNOZ: Can you give me a moment?
14 MR. SIEBELS: Pardon me?
15 BOARD MEMBER MUNOZ: I'm sorry. I was talking to
16 myself.
17 MR. SIEBELS: Oh, okay.
18 In -- in this case treatment is not really
19 practical because of the hundreds of millions of gallons per
20 day that pass through in a couple of minutes. Building a
21 treatment system is not really practical. And since they
22 ruled out the possibility of -- of building new units that
23 don't use OTC water, based on the anticipation that they were
24 going to close by a certain date, we -- we considered that
25 "Okay. It's going to" -- "It's going to close, it's all

1 going to go away and" -- "and, you know, "we'll be in
2 complete compliance with everything." However, due to grid
3 reliabilities that are beyond our control that are decided,
4 you know, by the SACCWIS and the State Water Board policy,
5 which we are required to implement, that date keeps getting
6 moved that we -- that, you know, obviously we would have
7 liked to have shut everything down last year, you know,
8 because of the impingement and entrainment, but we're also,
9 you know, working with what we're required to work with.
10 In terms of the discharge of pollutants, I think
11 the main issue for them is temperature because, as you
12 remember on that map I showed you, they withdraw water and
13 discharge it back to King Harbor. There are pollutants
14 present in King Harbor already. So they -- they monitor the
15 intake and the effluent on the same day that they operate,
16 and sometimes the level may be a little bit different in the
17 two different samples. We've looked at the monitoring data
18 and sometime -- like, for example, copper. There may be "X"
19 amount of copper when they intake, and it may be a little bit
20 more or less than that when they discharge because of the
21 amount of water that's going through and the different, you
22 know, grab that you might get on the particular sample, and
23 so the TSO interim limits kind of help with those little
24 discrepancies that -- that they don't get a -- a -- a MMP in
25 -- in those cases. We don’t believe that they're adding

1 pollutants to the water body.
2 I can't speak for the other environmental impacts,
3 you know, as far as noise and -- and -- and air pollution.
4 That's -- that's not in our purview. In terms of water
5 quality, I think mainly you're looking at the impingement-
6 entrainment issue, which has been reduced by shutting down
7 the one, and the -- the elevated temperature discharge and --
8 and the TSO allows them to continue that elevated temperature
9 discharge that they've been doing for decades, and so this is
10 kind of how we're -- we're trying to, you know, work with all
11 parties concerned in order to -- to work this out.
12 BOARD MEMBER MUNOZ: Okay. Thank you so much for the
13 explanation.
14 BOARD MEMBER NAHAI: And -- and I think -- and that's --
15 that's understandable that -- that the Board's trying to work
16 with -- with -- with everybody but -- but there are -- there
17 are -- there are a couple of things.
18 First, regarding what Sophie said -- and I -- and I
19 understood it but -- but -- you know, but that determination
20 -- all of -- all of the -- the -- the considerations that you
21 set out the Board actually went through in order to give a --
22 a TSO to 2021. So -- so those -- those -- those criteria,
23 those considerations -- the economic consideration -- were
24 done back then, and the result of it was that 2021 was the
25 deadline. The only reason why 2021 is being extended is

1 because of -- is because of the rolling blackouts that --
2 that occurred.
3 The second thing is, you know, we shouldn't forget
4 that the OTC extension is permissive. There's nobody
5 standing there obligating these plants to run. So I -- it --
6 you know, it makes it sound as if -- as if somehow there --
7 there's -- there's an obligation on the plant to -- to
8 continue to run.
9 And the third point I would make is if truly
10 they're just little discrepancies -- if I may quote what was
11 just said -- then -- then -- then, in that case, to comply
12 shouldn't be that -- that, you know, horrendous a problem.
13 So I -- I -- I -- I don't know. I'm still -- I'm
14 still having difficulty supporting this -- this
15 recommendation, but, again, Renee, if you think additional
16 time would be helpful to -- to deliberate some more, I, for
17 one, are more than willing to -- to listen.
18 BOARD MEMBER STAHL: Renee, if I may, I think Mr. Miller
19 has his hand raised here, at least I see it on the screen,
20 and I'd certainly like to hear his comments.
21 But in response to David, I mean, I realize this is
22 a permissive action, but we're not the only ones that have
23 reviewed all of this data. Staff has, the State Board has,
24 and that's what moves me to the fact that it's not forever,
25 but it's to 2023. They didn't come up with 2022, it came up

with 2023, and we could get into a technical discussion here of once-through cooling and the impact that's going to have on the environment but -- but I -- I trust that staff has -- in examining the monitoring data, felt that this was the most prudent recommendation for environmental protection and for water quality and -- and that's why it -- it -- I mean, I really belabored over the staff report and the recommendation. I mean, I live in the South Bay. I understand the issues in -- in the harbor.

But -- but -- but at any rate, Mr. Miller?

MR. MILLER: Thank you, Chair.

I -- I wanted to take the opportunity -- and -- and I've been listening to -- to -- to all of the dialogue and -- and -- and I think it is important to try to put some practical context around kind of where we find ourselves and to -- to Board Member Munoz's and Board Member Nahai's comments.

You know, I think the -- the -- the compliance plan that was laid out by AES for the facility -- and there is a lot of history. I think where we find ourselves last year was that our full expectation was at the end of this year -- at the end of this month, actually -- that the facility was going to meet its compliance requirements, not only by the shut down of Unit 7, which was part of an overall repowering process, it did deliver the expectations of the OTC

1 requirements and the TSO requirements -- but even more so,
2 the -- the shutdown of the entire facility, which was
3 anticipated to be the end of this year.
4 You know, I think we find ourselves in a position
5 -- and this is something that we grapple with is -- is there
6 are economic decisions in the ability to mitigate those with
7 investment, and given the short time frame and the types of
8 investment that would be required to address what we view as
9 marginal issues -- and they're not -- we don't run all that
10 much as a facility -- that, in balance of where we are, it's
11 really hard, with all of a sudden finding out we're going to
12 be extended for another two years, to think on the order of
13 millions of dollars of investment to mitigate something that
14 at the end of 2023 is probably the end of the road for
15 Redondo Beach. Certainly from AES's perspective, right now
16 we have a leasehold to run the facility to the end of that
17 date, and we can't go any further. Right now our permits are
18 aligned to allow us to get to that point, both on the water
19 and air sides, and -- and that's the likely end of the road,
20 best that we can tell right now.
21 So it -- it's -- it's been difficult for us and --
22 on many different levels, not only investment, considering
23 how we -- we -- because we take -- we take our obligations
24 and our permits very, very seriously. It's an important
25 part. It -- it fits up there with environmental safety.

1 These are core parts of how we operate our business. But
2 finding out, you know, finally, within several months of the
3 end of the year our ability to dramatically influence the
4 change in the quality of the range of things that -- that Tom
5 talked about are very difficult if we've only got another
6 24 months of operation.
7 And I understand the difficult balance that you
8 guys are facing and thinking about the history and where we
9 find ourselves today, but I would just -- I -- I would convey
10 that we do take it very seriously. We are trying to --
11 trying to keep a very balanced view on a practical investment
12 perspective and -- and recommend that -- I think in -- in
13 balancing all of those, the TSO is -- that's the logic --
14 exactly why we have approached and pushed for the TSO for the
15 next 24 months -- just because of those issues that I
16 outlined. Thank you.
17 BOARD MEMBER STAHL: Thank you, Mr. Miller.
18 MS. PURDY: So, Board Member Stahl, I mean, I know I --
19 I had suggested, perhaps, you know, a break to just see if
20 there's anything that we've heard that we would like to make
21 sure we respond to. I think the fact that we've continued
22 the conversation probably has given us the opportunity to do
23 that, and I don't know that we -- you know, we need to take a
24 break at this point.
25 So if -- if you'd like to proceed, I know we do

have a motion on the floor from you, and while we don't have a second, because of what our legal counsel explained with regard to the -- the procedures that we're following, if there's not a second, I think what we would want to do is go ahead and -- and have Helen take a roll-call vote.

MS. FROELICH: That's -- that's correct, Renee.

MS. PURDY: If the Board is prepared to -- to proceed with that.

BOARD MEMBER MUNOZ: We're taking a roll-call vote on what?

MS. PURDY: On whether --

BOARD MEMBER MUNOZ: We don’t have a second so we don't have a motion. So what are we taking a roll-call vote on?

MS. PURDY: Sophie, can you explain once again with regard to the rules for seconding -- for seconds?

MS. FROELICH: Of course.

So, Board Member Munoz, Mr. -- Board Member Stahl, made a motion to adopt the staff recommendation on this issue --

BOARD MEMBER MUNOZ: Right.

MS. FROELICH: -- and even though we don't have a second, it’s not required under Sturgis, which is what --

BOARD MEMBER MUNOZ: Oh.

MS. FROELICH: -- the Board follows, and so -- although as I -- I -- I think David indicated, there doesn't seem to

be support, there's still a motion out there --

BOARD MEMBER MUNOZ: Okay.

MS. FROELICH: -- and unless it's withdrawn, we should vote on it.

BOARD MEMBER MUNOZ: Okay.

I would like to ask for the future that we get a briefing on Sturgis because I'm not familiar -- I'm familiar with "Robert's Rules." So it's -- it's hard to -- to participate when you don't know what the guidelines are. So, if we can do that sometime in the future, or if you can give me a book to read, I'd appreciate it.

But I get what you're saying. We need to vote.

MS. FROELICH: Yeah. No, Board Member Munoz, we -- we hear you loud and clear, and I think we've -- we've heard this request before, arising out of the MS4 hearings as well, and there will certainly be a briefing, and I think we can also -- I think we were even considering -- Renee, correct me if I'm wrong -- perhaps doing a little presentation in public so that everyone, including our constituents and our public, understands as well.

BOARD MEMBER MUNOZ: Okay. Great. Thank you.

MS. FROELICH: Uh-huh.

MS. PURDY: So --

BOARD MEMBER STAHL: Helen will call the roll.

MS. PURDY: Helen will call the -- the roll, yes.

1 BOARD MEMBER STAHL: To the Board.
2 MS. PURDY: Yeah. For -- for the vote on -- on your
3 motion to --
4 BOARD MEMBER STAHL: Adopt the staff recommendation.
5 MS. PURDY: -- TSO -- adopt the staff recommendation.
6 Right.
7 BOARD CLERK ROWE: Board Member Mendez?
8 BOARD MEMBER MENDEZ: No.
9 BOARD CLERK ROWE: Board Member Munoz?
10 BOARD MEMBER MUNOZ: No.
11 BOARD CLERK ROWE: Board Member Nahai?
12 BOARD MEMBER NAHAI: Sorry. No.
13 BOARD CLERK ROWE: Board Member Stahl?
14 BOARD MEMBER STAHL: Yes.
15 BOARD CLERK ROWE: Motion denied.
16 BOARD MEMBER STAHL: -- I made the recommendation.
17 MS. PURDY: Okay. So motion did not carry.
18 So that ends Item 16, and that is the last item on
19 our Board agenda.
20 Board Member Stahl, either you or I can just note
21 when our next meeting is, but this does conclude the items
22 for our -- our agenda today.
23 BOARD MEMBER STAHL: The next board meeting -- I think I
24 had mentioned earlier -- is February the 10th, I believe, but
25 we do have -- as is traditional, we do have a -- a retreat --

a Board retreat in January, but the next scheduled Board Meeting, I believe, is February 10th.

Renee, correct me if otherwise.

MS. PURDY: Yes, you are correct. It is February 10th, and as you mentioned, we will have a annual retreat in January. That's currently scheduled for January 13th.

BOARD MEMBER STAHL: Okay. Unless there are any other comments --

BOARD MEMBER MENDEZ: And -- and that retreat will be online?

MS. PURDY: At this point, Board Member Mendez, yes, the plan is that the retreat on the 13th will be a virtual retreat.

BOARD MEMBER MENDEZ: Okay. Great. Thank you.

MS. PURDY: Okay. If there's no other business, Board Member Stahl, you can go ahead and adjourn the meeting.

BOARD MEMBER STAHL: The meeting is adjourned.

BOARD MEMBER MUNOZ: Thank you. Thank you for your work ensuring the meeting.

BOARD MEMBER STAHL: Thank you. Thank you, everybody. Thanks so much.

BOARD MEMBER NAHAI: Thanks (inaudible).

BOARD MEMBER STAHL: Bye-bye.

(Conclusion of recorded material.)

-o0o-

I, Julie Messa, do hereby certify:

That the foregoing audiotaped proceeding was received and transcribed into typewriting under my direction and supervision;

And I hereby certify that the foregoing transcript is a full, true and correct transcript of the audiotaped recording given to me.

I further certify that I am neither counsel for nor related to any party to said action, nor anywise interested in the outcome thereof.

In witness thereof, I have hereunto subscribed my name this 15th day of December, 2021.

/s/ Julie Messa
Julie Messa, CET**D-403
Transcriber

# Exhibit 6

# Statewide Advisory Committee on Cooling Water Intake Structures

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

## January 23, 2020

CALIFORNIA Water Boards
STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

CALIFORNIA STATE LANDS COMMISSION

CALIFORNIA COASTAL COMMISSION

PUBLIC UTILITIES COMMISSION · EUREKA · STATE OF CALIFORNIA

CALIFORNIA AIR RESOURCES BOARD

California ISO

CALIFORNIA ENERGY COMMISSION

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## Acronyms and Abbreviations

| Acronym or Abbreviation | Full Name or Phrase |
|---|---|
| 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[1] (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.

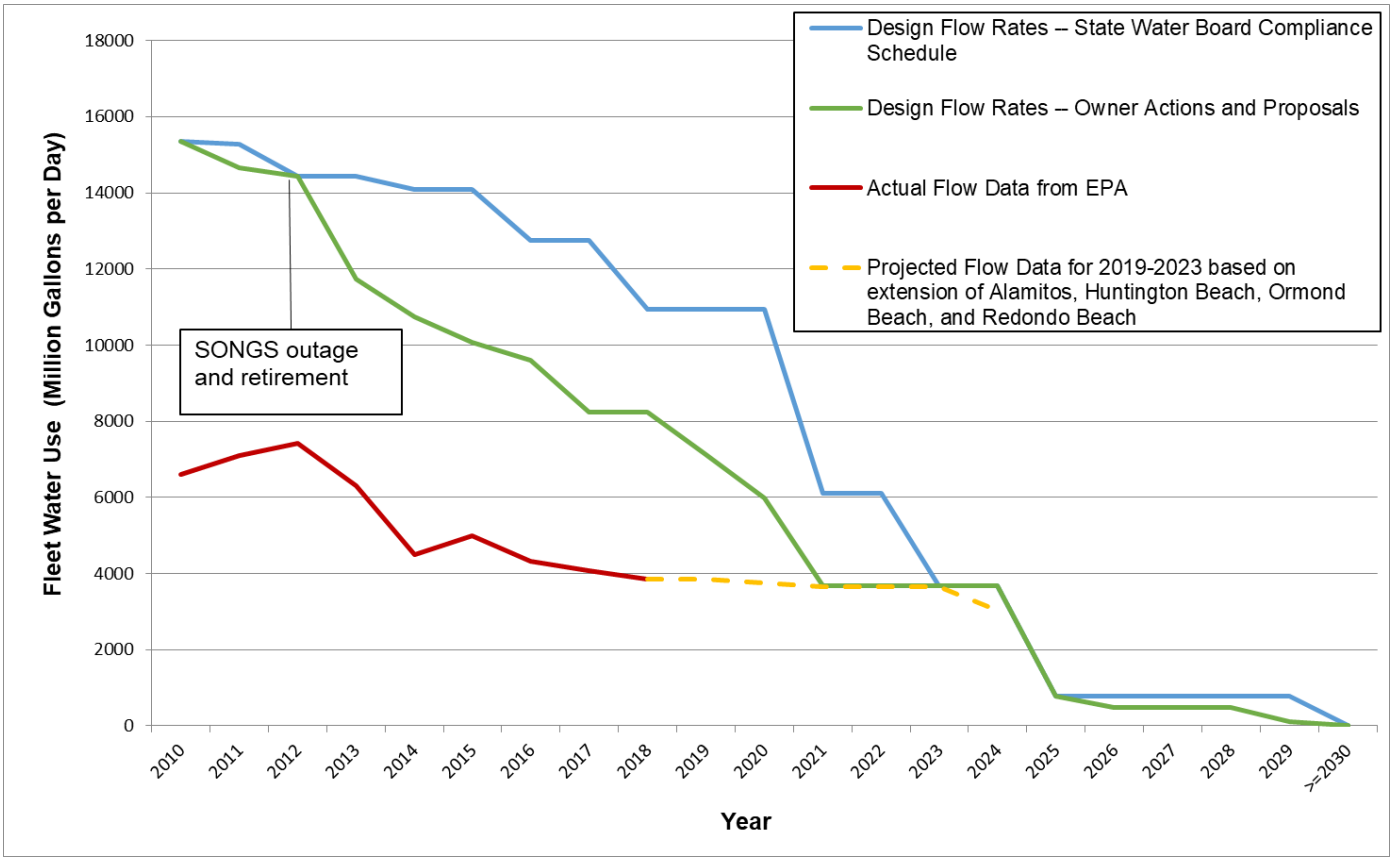
The system-wide grid reliability concerns stem from several sources, including shifts in peak demand to later in the day and later in the year when solar and wind resources are not as reliably available to meet peak demand; related changes in the calculation of available capacity from wind and solar 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.[2] 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[3].

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.[4] 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 31st 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.

The SACCWIS recognizes that Alternative 3 would also address system-wide grid reliability needs.

### 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

[1] The 2017 Once-Through Cooling Policy. (https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/policy.shtml#amendments)

[2] 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)

[3] SACCWIS information item presentation to the State Water Board, November 19, 2019 Board meeting, Agenda Item 6.

[4] 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)

# Exhibit 7

**STATE WATER RESOURCES CONTROL BOARD**
**RESOLUTION NO. 2020-0029**

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

WHEREAS:

1. The State Water Resources Control Board ("State Water Board") is designated as the state water pollution control agency for all purposes stated in the Clean Water Act, including water quality control planning and waste discharge regulation.

2. The State Water Board is responsible for adopting state policy for water quality control, which may consist of water quality principles, guidelines, and objectives deemed essential for water quality control.

3. On May 4, 2010, the State Water Board adopted the statewide "Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling" ("Once-Through Cooling" or "OTC Policy") under Resolution No. 2010-0020. The Office of Administrative Law approved the OTC Policy on September 27, 2010, and the OTC Policy became effective on October 1, 2010.

4. The OTC Policy establishes uniform, technology-based standards to implement Clean Water Act section 316(b), which requires that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impacts.

5. The OTC Policy applies to nine existing power plants located along the California coast, and is implemented through National Pollutant Discharge Elimination System ("NPDES") permits, issued pursuant to Clean Water Act section 402, which authorize the point source discharge of pollutants to navigable waters. The OTC Policy originally affected nineteen once-through cooling power plants, and ten of those facilities have ceased all once-through cooling operations since adoption of the OTC Policy.

6. The OTC Policy establishes a schedule that provides the latest compliance date for the replacement, repowering, or retirement of each remaining power plant still utilizing once-through cooling operations while accounting for potential impacts to California's electrical supply.

7. The OTC Policy was amended on July 19, 2011, making changes to compliance dates for power generating stations owned and operated by the Los Angeles Department of Water and Power ("LADWP") on a unit-by-unit basis rather than a facility-wide basis. The OTC Policy was amended on June 18, 2013, authorizing the

Regional Water Quality Control Boards to issue NPDES permits to point source dischargers in California, including power plants subject to the OTC Policy. The OTC Policy was amended on April 7, 2015, to extend the compliance date for the Moss Landing Power Plant from December 31, 2017, to December 31, 2020. The OTC Policy was last amended on August 15, 2017, to extend the compliance date for Encina Power Station from December 31, 2017, to December 31, 2018.

8. Section 3.A of the OTC Policy requires the owner or operator of an affected fossil-fuel power plant to submit an implementation plan to the State Water Board by April 1, 2011, selecting one of two OTC Policy compliance tracks and describing the general design, construction, or operational measures to implement the compliance track. The State Water Board received implementation plans from all owners and/or operators as requested, including the implementation plans for AES-Southland, Inc. ("AES") Alamitos Generating Station ("Alamitos"), AES Huntington Beach Generating Station ("Huntington Beach"), and AES Redondo Beach Generating Station ("Redondo Beach") and the GenOn Energy, Inc. ("GenOn") Ormond Beach Generating Station ("Ormond Beach"). Both AES and GenOn plan to comply with the OTC Policy through ceasing once-through cooling operations at the facilities listed above by the compliance dates.

9. The Statewide Advisory Committee on Cooling Water Intake Structures ("SACCWIS") is composed of representatives from the California Air Resources Board, the California Coastal Commission, the California Energy Commission, the California Public Utilities Commission ("CPUC"), the California State Lands Commission, the California Independent System Operator ("CAISO"), and the State Water Board. The purpose of the committee is to review implementation plans and schedules and to advise the State Water Board on OTC Policy implementation, in order to ensure that the implementation schedule takes into account local area and grid reliability, including permitting constraints.

Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach Generating Stations

10. On June 20, 2019, the Assigned Commissioner and Administrative Law Judge in the CPUC Integrated Resource Planning proceeding ("Rulemaking R.16-02-007") (https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M302/K942/302942332.PDF) 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 analysis found that the potential 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.

11. On August 23, 2019, the SACCWIS approved the *Local and System-Wide 2021 Grid Reliability Studies* report, which assessed electric system reliability under study assumptions and scenarios. The analyses showed that it is necessary for Alamitos Units 3, 4, and 5 to be operational for two or more years to ensure local grid reliability, and for a portion of the available OTC units at Huntington Beach, Ormond Beach, and Redondo Beach to be operational for two or more years, but no longer than necessary, to address system-wide grid reliability concerns. The SACCWIS concluded that further information and analysis is needed before the committee could form a final recommendation on compliance date extensions for State Water Board consideration.

12. On November 7, 2019, the CPUC adopted Decision ("D.")19-11-016 (https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M319/K825/319825388.PDF). In the decision, the CPUC directed 3,300 MW of new capacity to be procured by 2023, with 50% (1,650 MW) of this procurement targeted to come online by August 1, 2021; 75% (an additional 825 MW) by August 1, 2022; and 100% (an additional 825 MW) by August 1, 2023, to address the system-wide capacity shortfall. The decision also recommended the following phased extensions to the OTC Policy compliance dates for specific generating units to support the procurement schedule:

    a. Extend the compliance date of Alamitos Units 3, 4, and 5 for up to three years to December 31, 2023;

    b. Extend the compliance date of Huntington Beach Unit 2 for up to three years to December 31, 2023;

    c. Extend the compliance date of Ormond Beach Units 1 and 2 for up to one year to December 31, 2021; and

    d. Extend the compliance date of Redondo Beach Units 5, 6, and 8 for up to two years to December 31, 2022.

    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.

13. On January 23, 2020, the SACCWIS met and considered additional information and documents. The SACCWIS approved the *Recommended Compliance Date Extensions for Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach Generating Stations* report and acknowledged that the CPUC's D.19-11-016, as Alternative 3, is sufficient to maintain grid reliability.

14. Also on January 23, 2020, the SACCWIS recommended, as Alternative 4, the State Water Board consider the following compliance date extensions in order to ensure local and system-wide grid reliability as new procurement directed by the CPUC comes online over the next three years to offset the potential energy shortfall:

a. Extend the compliance date of Alamitos Units 3, 4, and 5 for three years to December 31, 2023;

b. Extend the compliance date of Huntington Beach Unit 2 for three years to December 31, 2023;

c. Extend the compliance date of Ormond Beach Units 1 and 2 for three years to December 31, 2023; and

d. Extend the compliance date of Redondo Beach Units 5, 6, and 8 for one year to December 31, 2021.

15. The amendment to the OTC Policy extends the compliance dates for Alamitos Units 3, 4, and 5, Huntington Beach Unit 2, Ormond Beach Units 1 and 2, and Redondo Beach Units 5, 6, and 8 as recommended by the SACCWIS and as reflected in Attachment A. The amendment will be made to the implementation schedule as new lines for Milestones 30 and 34 of Table 1 in Section 3.E.

16. AES and GenOn, or future owners and operators of Alamitos, Huntington Beach, Redondo Beach, and Ormond Beach, will be required to continue complying with interim mitigation requirements up to and until final compliance with the OTC Policy.

17. The State Water Board adopted the OTC Policy with the explicit purpose of minimizing adverse environmental impacts to marine life resulting from use of coastal and estuarine waters for power plant cooling, and the State Water Board remains committed to timely compliance with the OTC Policy by owners and operators of affected power plants. Further, the State Water Board recognizes that OTC Policy compliance dates provide certainty to communities in planning for future land use.

    In adopting the OTC Policy, the State Water Board recognized that power generating facilities are part of a state-wide electrical grid and that changes in generating capacity resulting from OTC Policy compliance may have an impact on the grid and power availability, requiring long-term planning for transmission, generation, and demand resources. The OTC Policy provided a lengthy compliance schedule based upon extensive consultation with the energy agencies in order to facilitate planning for potential replacement, repowering, or retirement of affected power plants while avoiding disruption in the state's electrical supply. The OTC Policy requires compliance as soon as possible, but no later than the dates set forth in the Policy Implementation Schedule (Policy Section 2.B.(1)), providing for State Water Board consideration of suspensions or revisions of compliance dates recommended by the energy agencies "based upon the need for continued operation of an existing power plant to maintain the reliability of the electrical system . . . ." (OTC Policy section 2.B.(2).) Provisions for NPDES permits implementing the OTC Policy further emphasize that compliance schedule revisions recommended by the SACCWIS are those "necessary to maintain reliability of the electric system." (OTC Policy section 3.C.(1).) The OTC Policy also directs that, where the energy

agencies make a unanimous recommendation for compliance date revisions based on grid reliability, the State Water Board "shall afford significant weight to the recommendation." (OTC Policy section 3.B(5).)

18. The CPUC, CAISO, and CEC, in a joint submission to the State Water Board on May 27, 2020, affirmed the continued need for the extensions specified above. In August 2020, the CPUC, CAISO, and CEC updated the State Water Board on the progress of bringing new resources online to replace the affected facilities. The CPUC has established a process to track the procurement and development of the new projects fulfilling the 3,300 MW ordered by the CPUC in D.19-11-016. Currently, the process suggests that most projects needing to be developed by August 1, 2021, are meeting their development milestones. However, potential impacts from the coronavirus disease 2019 ("COVID-19"), shelter-at-home, and social distancing requirements may create new delay risks. Potential delays may also result from COVID-19-related supply chain issues and/or potential permitting or inspection delays resulting from agency staff, budget, or procedural constraints related to COVID-19.

19. The CPUC is continuing to monitor development of the new 1,650 MW of new resources targeted to come online by August 1, 2021, as set forth in Finding 12. 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 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.

20. Portions of California were subject to rotating power outages during mid-August 2020 due largely to unexpectedly high peak energy demands during widespread extreme high temperatures. The CPUC, CAISO, and CEC may be revising their forecasting models to account for this scenario, and may determine that there is a need to request additional extensions of final compliance dates to maintain grid reliability and avoid similar blackouts in the future.

21. Should there be a need for additional extensions, the OTC Policy provides expedited relief from final compliance dates as necessary to maintain grid reliability. Section 2.B(2)(a) of the OTC Policy allows the CAISO to notify the State Water Board that CAISO is extending the compliance date by 90 days (e.g., to March 31, 2022) as long as neither the CEC nor CPUC object in writing within ten days. If CAISO notifies the State Water Board that an extension beyond March 31, 2022, is needed for grid reliability, Section 2.B(2)(b) of the OTC Policy requires the State Water Board to conduct an expedited hearing within 90 days of receiving the notification. At the conclusion of the hearing, Section 2.B(2)(b) authorizes the State Water Board

to suspend the final compliance date indefinitely, pending its full evaluation and consideration of an amendment to the OTC Policy's final compliance date. Pursuant to Section 2.B(2)(d) of the OTC Policy, the State Water Board, in considering whether to suspend or amend the final compliance dates, shall afford significant weight to the recommendations of the CAISO. The State Water Board commits to act expeditiously to evaluate whether to suspend or amend the final compliance date beyond 90 days.

22. The State Water Board's primary responsibility and jurisdiction is to implement CWA 316(b) and ensure that the beneficial uses of the state's coastal and estuarine waters are protected. The compliance schedule revisions for Huntington Beach, Alamitos, Ormond Beach, and Redondo Beach are adopted in order to provide for grid reliability needed in the short term and should not be interpreted in any way as the State Water Board retreating from its goal of phasing out adverse environmental impacts resulting from use of coastal and estuarine waters for once-through cooling.

Diablo Canyon Nuclear Power Plant

23. On January 17, 2020, the State Water Board received a letter from the Pacific Gas and Electric Company (PG&E) requesting amendment of the OTC Policy compliance dates for Diablo Canyon Nuclear Power Plant Units 1 and 2 to conform with the expiration dates of the current Nuclear Regulatory Commission (NRC) licenses for each unit and PG&E's plan to permanently retire the units as approved by the CPUC in 2018. 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. Following PG&E's decision to not pursue renewal of the NRC licenses for Units 1 and 2 beyond 2024 and 2025, PG&E requested an amendment to conform the compliance dates in the OTC Policy. The CPUC, in their D. 18-01-002, supports the operation of Unit 2 through the end of its current NRC license as part of Diablo Canyon's retirement plan.

24. The amendment to the OTC Policy shortens the compliance date for Diablo Canyon Nuclear Power Plant Unit 1 by approximately two months from December 31, 2024, to November 2, 2024, and extends the compliance date for Unit 2 by approximately nine months from December 31, 2024, to August 26, 2025. As reflected in Attachment A, the amendment will be made to the implementation schedule as new lines for Milestones 36 and 38 of Table 1 in Section 3.E.

25. PG&E will be required to continue complying with interim mitigation requirements up to and until final compliance with the OTC Policy.

Administrative Amendments

26. 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. As reflected in Attachment A, the amendment to Section

3.B(5) of the OTC Policy modifies this process so that the State Water Board will consider the SACCWIS' recommendations and consider modifications to the OTC Policy, if appropriate, without first directing staff to make modifications to the OTC Policy. In order to expeditiously address compliance date revisions recommended by the SACCWIS, staff may use information items and briefings to apprise State Water Board members of SACCWIS' recommendations while simultaneously drafting an amendment for State Water Board consideration as soon as practicable.

27. On March 27, 2014, LADWP sent a letter to the State Water Board requesting to change the annual due date of its grid reliability report from December 31 of a given year to January 31 of a given year. The additional month provides time for LADWP to incorporate information from the Ten-Year Transmission Assessment and the Integrated Resources Plan, which are finalized by December 31, into their grid reliability report and present the report to the LADWP Board of Water and Power Commissioners prior to submittal to the SACCWIS. In a letter dated April 24, 2014, the State Water Board directed LADWP to submit its annual grid reliability report by January 31 of each year pursuant to a Water Code Section 13383 letter order, and LADWP has done so since 2014. The amendment to Section 3.B(3) of the OTC Policy changes the due date of LADWP's annual grid reliability report from December 31 to January 31 of a given year, as reflected in Attachment A.

28. The amendment to the OTC Policy will reformat and non-substantively revise text in the OTC Policy to improve readability and comply with California Government Code Section 11546.7 document accessibility requirements.

California Environmental Quality Act

29. The California Natural Resources Agency approved the State Water Board's water quality control planning process as a certified regulatory program that adequately satisfies the California Environmental Quality Act (CEQA) requirements for preparing environmental documents (California Code of Regulations, title 23, section 3777). A substitute environmental document (SED) is used in place of an environmental impact report as CEQA environmental documentation.

30. The "Amendment to the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling for Extension of Compliance Schedules of Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach Generating Stations Staff Report" ("Staff Report") contains the required environmental documentation under the State Water Board's CEQA regulations. The changes in compliance dates do not constitute a project within the meaning of CEQA. Nonetheless, the addendum to the Final SED adopted with the OTC Policy on May 4, 2010, concludes that revising compliance dates does not lead to new significant environmental impacts or a substantial increase in the severity of previously identified environmental effects. The addendum to the Final SED is included as Section 8 of the Staff Report.

31. Consistent with CEQA, the State Water Board finds the Staff Report does not engage in speculation, but rather analyzes the project and the alternatives to the project, and concludes that the project will not result in any additional environmental impacts.

Public Process

32. The State Water Board provided a written public comment period from March 18, 2020, through noon on May 18, 2020. During the comment period, the State Water Board held a public board workshop on April 21, 2020, providing an opportunity for open discussion between State Water Board members, staff, and the public on the proposed amendment to the OTC Policy.

33. The State Water Board carefully considered comments received and responded to comments. Based on the comments, the State Water Board revised the proposed amendment to the OTC Policy and the Staff Report. The responses to comments and revisions to the Staff Report do not add significant new information that is material to the State Water Board's decision or that would otherwise warrant action that is not a logical outgrowth of the proposed amendment that was previously subject to a written comment period. Therefore, it is not necessary to afford interested persons with another written comment period to address the responses to comments or revisions to the Staff Report.

34. The State Water Board conducted a public hearing in Sacramento on September 1, 2020, to solicit comments regarding the proposed amendment to the OTC Policy and has reviewed and carefully considered all comments and testimony received.

Effective Date

35. The amendment to the OTC Policy will become effective upon approval by the Office of Administrative Law.

THEREFORE BE IT RESOLVED THAT:

The State Water Board:

1. Approves and adopts the Staff Report and Addendum to the 2010 Final SED and directs the Executive Director or designee to transmit the Notice of Decision to the Secretary of Resources.

2. Adopts the amendment to the OTC Policy as reflected in Attachment A.

3. Authorizes the Executive Director or designee to submit the amendment to the Office of Administrative Law for review and approval.

4. If, during the approval process, Water Board staff or the Office of Administrative Law determines that minor, non-substantive modifications to the language of the amendment are needed for clarity or consistency, the Executive Director or designee may make such changes and shall inform the State Water Board of any such changes.

**CERTIFICATION**

The undersigned Clerk to the Board does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on September 1, 2020.

| | |
|---|---|
| AYE: | Chair E. Joaquin Esquivel<br>Vice Chair Dorene D'Adamo<br>Board Member Sean Maguire<br>Board Member Laurel Firestone |
| NAY: | None |
| ABSENT: | Board Member Tam M. Doduc |
| ABSTAIN: | None |

Jeanine Townsend

Jeanine Townsend
Clerk to the Board

# 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**

**State of California**
Gavin Newsom, *Governor*

**California Environmental Protection Agency**
Jared Blumenfeld, *Secretary*

**State Water Resources Control Board**
https://www.waterboards.ca.gov/

E. Joaquin Esquivel, *Chair*
Dorene D'Adamo, *Vice Chair*
Tam M. Doduc, *Member*
Sean Maguire, *Member*
Laurel Firestone, *Member*
Eileen Sobeck, *Executive Director*
Jonathan Bishop, *Chief Deputy Director*
Eric Oppenheimer, *Chief Deputy Director*
Karen Mogus, *Division of Water Quality Deputy Director*

**Prepared by:**

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State Water Resources Control Board
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## Abbreviations and Acronyms

| Abbreviation or Acronym | Full Name or Phrase |
|---|---|
| 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 Alamitos 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 Alamitos' compliance date beyond December 31, 2020. Extending the compliance date for Alamitos 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 31st 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).

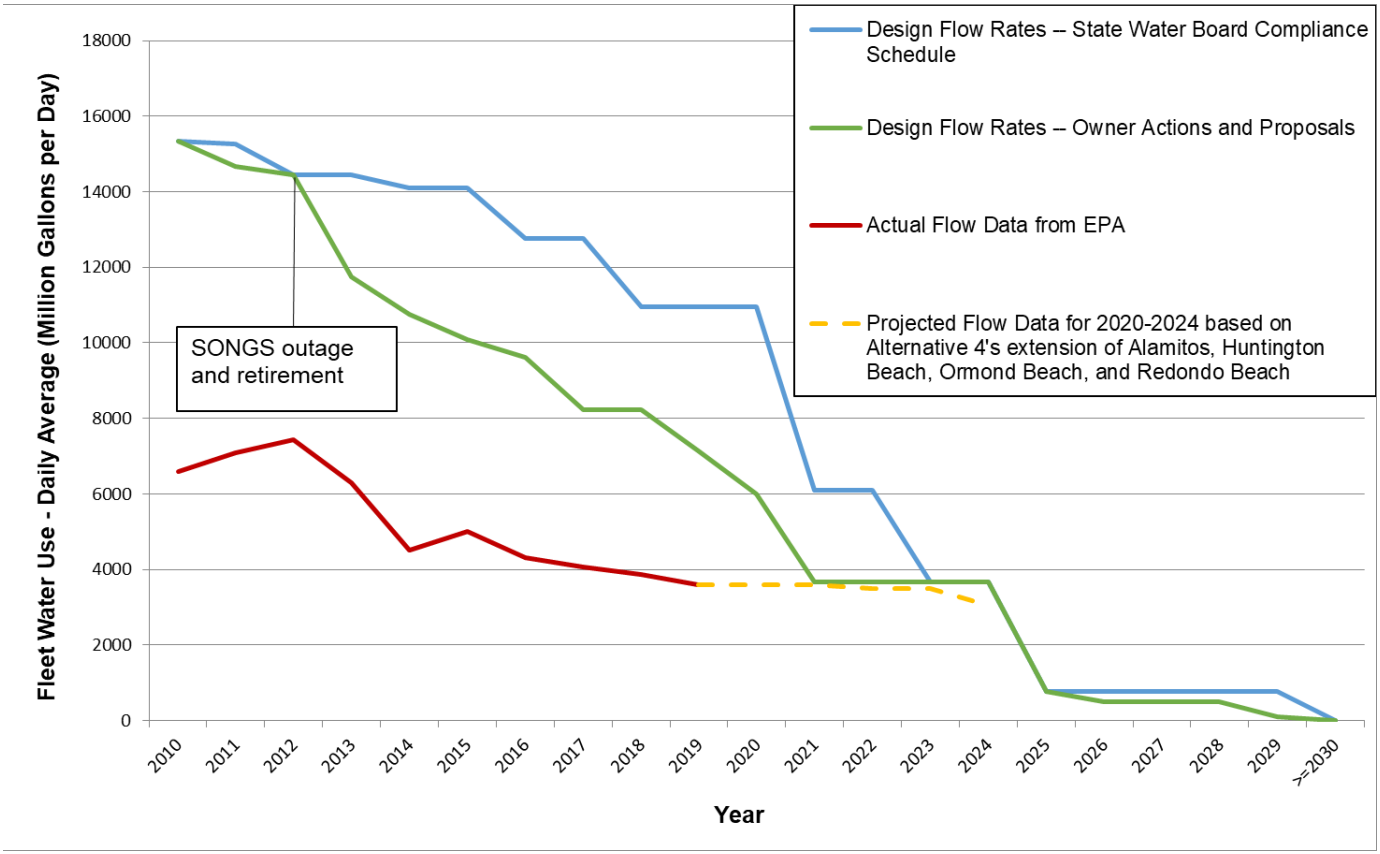
Since adoption of the OTC Policy, Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach have operated at decreasing capacities, with average annual capacity factors decreasing from 7.7% in 2012 to 4.4% in 2018. If extended, these four OTC power plants are expected to be operated at or below annual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

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.

<u>Other Regulatory and Permitting Requirements</u>

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 to is 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.

## 10. References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# FINAL AMENDMENT TO THE WATER QUALITY CONTROL POLICY ON THE USE OF COASTAL AND ESTUARINE WATERS FOR POWER PLANT COOLING

**State Water Resources Control Board**
**September 1, 2020**

# WATER QUALITY CONTROL POLICY ON THE USE OF COASTAL AND ESTUARINE WATERS FOR POWER PLANT COOLING

1. Introduction

   A. Clean Water Act 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 impact. Section 316(b) is implemented through National Pollutant Discharge Elimination System (NPDES) permits, issued pursuant to Clean Water Act Section 402, which authorize the point source discharge of pollutants to navigable waters.

   B. The State Water Resources Control Board (State Water Board) is designated as the state water pollution control agency for all purposes stated in the Clean Water Act.

   C. The State Water Board and Regional Water Quality Control Boards (Regional Water Boards) (collectively Water Boards) are authorized to issue NPDES permits to point source dischargers in California.

   D. Currently, there are no applicable nationwide standards implementing Section 316(b) for *existing power plants**[1]. Consequently, the Water Boards must implement Section 316(b) on a case-by-case basis, using best professional judgment.

   E. The State Water Board is responsible for adopting state policy for water quality control, which may consist of water quality principles, guidelines, and objectives deemed essential for water quality control.

   F. This Policy establishes requirements for the implementation of Section 316(b), using best professional judgment in determining BTA for cooling water intake structures at existing coastal and estuarine power plants that must be implemented in NPDES permits.

   G. The intent of this Policy is to ensure that the beneficial uses of the State's coastal and estuarine waters are protected while also ensuring that the electrical power needs essential for the welfare of the citizens of the State are met. The State Water Board recognizes it is necessary to develop replacement infrastructure to maintain electric reliability in order to implement this Policy and in developing this policy considered costs, including costs of compliance, consistent with state and federal law.

[1] An asterisk indicates that the term is defined in Section 5 of the Policy.

H. During the development of this Policy, State Water Board staff has met regularly with representatives from the California Energy Commission (CEC), California Public Utilities Commission (CPUC), California Coastal Commission (CCC), California State Lands Commission (SLC), California Air Resources Board (ARB), and California Independent System Operator (CAISO) to develop realistic implementation plans and schedules for this Policy that will not cause disruption in the State's electrical power supply. The compliance dates for this Policy were developed considering a report produced by the energy agencies (CEC, CPUC, and CAISO), titled "Implementation of OTC Mitigation Through Energy Infrastructure Planning and Procurement Changes," and the accompanying table, titled "Draft Infrastructure Replacement Milestones and Compliance Dates for Existing Power Plants in California Using Once Through Cooling (OTC)," included in the Substitute Environmental Document for this Policy. The energy agencies' approach seeks to address the replacement, repowering, or retirement of power plants currently using OTC that (1) maintains reliability of the electric system; (2) meets California's environmental policy goals; and (3) achieves these goals through effective long-term planning for transmission, generation and demand resources. The energy agencies have stated that the dates specified in their report may require periodic updates.

I. To prevent disruption in the State's electrical power supply when the Policy is implemented, the State Water Board will convene a Statewide Advisory Committee on Cooling Water Intake Structures (SACCWIS), which will include representatives from the CEC, CPUC, CAISO, CCC, SLC, ARB, and State Water Board. SACCWIS will review implementation plans and schedules submitted by dischargers pursuant to this Policy, and advise the State Water Board on the implementation of this Policy to ensure that the implementation schedule takes into account local area and grid reliability, including permitting constraints. The State Water Board recognizes the compliance dates in this Policy may require amendment based on, among other factors, the need to maintain reliability of the electric system as determined by the energy agencies included in the SACCWIS, acting according to their individual or shared responsibilities. The State Water Board retains the final authority over changes to the adopted policy.

J. While the CEC, CPUC and CAISO each have various planning or permitting responsibilities important to this effort, the approach relies upon use of competitive procurement and forward contracting mechanisms implemented by the CPUC in order to identify low cost solutions for most OTC power plants. The CPUC has authority to order the investor-owned utilities (IOUs) to procure new or repowered fossil-fueled generation for system and/or local reliability in the Long-Term Procurement Plan (LTPP) proceeding. In response to the Policy, the CPUC anticipates modifying its LTPP proceeding and procurement processes to require the IOUs to assess replacement infrastructure needs and conduct targeted requests for offers (RFOs) to acquire replacement, repowered or otherwise compliant generation capacity. LTPP proceedings are conducted on a biennial cycle and plans are normally

approved in odd-numbered years. The next cycle, the 2010 LTPP, is estimated to result in a decision by 2011. The subsequent cycle, the 2012 LTPP, would in turn result in a decision by 2013. Once authorized to procure by a CPUC LTPP decision, the IOUs need approximately 18 months to issue an RFO, sign contracts, and submit applications to the CPUC for approval. Approval by the CPUC takes approximately nine months. If the contract involves a facility already licensed through the CEC generation permitting process, then financing and construction can begin. A typical generation permitting timeline is 12 months, but specific issues such as ability to obtain air permits can delay the process. IOUs often give preference to RFO bids with permits already (or nearly) in place. V From contract approval, construction usually takes three years, if generation permits are approved, or approximately five years, if generation permits are pending or other barriers present delays. In total, starting from the initiation of an LTPP proceeding (2010 LTPP or 2012 LTPP), seven years are expected to elapse, before replacement infrastructure is operational. Due to the number of plants affected, efforts to replace or repower OTC power plants would need to be phased.

K. Because the Los Angeles region presents a more complex and challenging set of issues, it is anticipated that more time would be needed to study and implement replacement infrastructure solutions. Therefore, total elapsed time is expected to begin in 2010 and end in 2017 for the Greater Bay Area and San Diego regions, which would be addressed beginning in the 2010 LTPP. For the Los Angeles region, which would be addressed beginning in the 2012 LTPP, total elapsed time is expected to begin in 2012 and end in 2020. A transmission solution is expected to have approximately the same timeframe, but could be delayed by greater potential for significant local opposition. In order to assure that repowering or *new power plant** development in the Los Angeles basin addresses unique permitting challenges, the SACCWIS will assist the State Water Board in evaluating schedules for power plants not under the jurisdiction of the CPUC or operating within the CAISO Balancing Authority Area.

L. The Global Warming Solutions Act of 2006 requires California to reduce greenhouse gas emissions to 1990 levels by 2020 and then to maintain those reductions. California presently has two *nuclear-fueled power plants** that provide approximately 4,600 megawatts of baseload electricity and do not emit greenhouse gases during energy generation. Energy generation by facilities that do not emit greenhouse gases will be critical to meeting the mandates of the Global Warming Solutions Act and emerging national and international greenhouse gas reduction requirements. The *nuclear-fueled power plants** are entering into United States Nuclear Regulatory Commission (Commission) license renewal proceedings unique to the nuclear power industry and relicensing may extend the plants operating lives to approximately 2045. Unlike older era fossil-fueled plants, if the *nuclear-fueled power plants** undergo modernization as part of relicensing or cooling structure upgrades, that modernization will not reduce greenhouse gas

emissions, and in fact, extended downtime during modernization may result in short-term increases in greenhouse gases as other greenhouse gas emitting facilities provide makeup power. In recognition of these considerations and others, this Policy requires special studies for the *nuclear-fueled power plants** to address their unique issues, and to evaluate appropriate requirements for those plants.

M. To conserve the State's scarce water resources, the State Water Board encourages the use of recycled water for cooling water in lieu of marine, estuarine or fresh water.

N. The Regional Water Boards are responsible for all NPDES permit actions for *existing power plants** subject to this Policy, including without limitation actions to issue, modify, reissue, revoke, and terminate NPDES permits after October 1, 2010. In order to ensure a high level of statewide consistency in implementing Section 316(b), the State Water Board Division of Water Quality (DWQ) staff will provide technical support in all issues related to implementation of the OTC Policy.

O. Nothing in this Policy precludes the authority of the State Water Board and the Regional Water Board to regulate discharges from *existing power plants** through NPDES permits, consistent with water quality standards.

2. Requirements for *Existing Power Plants**

A. Compliance Alternatives. An owner or operator of an *existing power plant** must comply with either Track 1 or Track 2, below.

(1) Track 1. An owner or operator of an *existing power plant** must reduce *intake flow rate** at each unit, at a minimum, to a level commensurate with that which can be attained by a *closed-cycle wet cooling system**. A minimum 93 percent reduction in *intake flow rate** for each unit is required for Track 1 compliance, compared to the unit's design *intake flow rate**. The through- screen intake velocity must not exceed 0.5 foot per second. The installation of closed cycle dry cooling systems meets the intent and minimum reduction requirements of this compliance alternative.

(2) Track 2. If an owner or operator of an *existing power plant** demonstrates to the State Water Board's satisfaction that compliance with Track 1 is *not feasible**, the owner or operator of an *existing power plant** must reduce impingement mortality and entrainment of marine life for the facility, on a unit- by-unit basis, to a comparable level to that which would be achieved under Track 1, using operational or structural controls, or both.

(a) Compliance for impingement mortality shall be determined either:

(i) For plants relying solely on reductions in velocity, by monthly verification of through-screen intake velocity not to exceed 0.5 foot per second, or

(ii) By monitoring required in Section 4.A, below. For measured reductions determined by monitoring, the owner or operator must reduce impingement mortality to a comparable level to that which would be achieved under Track 1. A "comparable level" is a level that achieves at least 90 percent of the reduction in impingement mortality required under Track 1.

(b) Compliance for entrainment shall be determined either:

(i) For plants relying solely on reductions in flow, by recording and reporting reductions in terms of monthly flow, in which case a minimum of 93% reduction in flow, as compared to the average actual flow for the corresponding months from 2000 – 2005, must be met, or

(ii) For plants relying in whole or in part on other control technologies (e.g., including but not limited to screens or re-location of intake structures), by measured reductions in entrainment determined by monitoring required in Section 4.B, below. The owner or operator must reduce entrainment to a comparable level to that which would be achieved under Track 1. A "comparable level" is a level that achieves at least 90 percent of the reduction in entrainment required under Track 1. If screens are employed to reduce entrainment, compliance shall be determined based on *ichthyoplankton**, and on the crustacean phyllosoma and megalops larvae, and squid paralarvae fractions of *meroplankton**.

(c) Technology-based improvements that are specifically designed to reduce impingement mortality and/or entrainment and were implemented prior to October 1, 2010 may be counted towards meeting Track 2 requirements.

(d) The owner or operator of an *existing power plant** with *combined-cycle power-generating units** installed prior to October 1, 2010 may achieve compliance in accordance with this paragraph.

The owner or operator may count prior reductions in impingement mortality and entrainment resulting from the replacement of steam turbine power-generating units with *combined-cycle power-generating units**, towards meeting Track 2 requirements. Reductions shall be based on reductions in intake flows, calculated as the difference between:

(i) The maximum permitted discharge (expressed as million gallons per day (MGD)) for the entire power plant as identified in the plant's prior NPDES permit that authorized the steam turbine power-generating units which were subsequently replaced with the *combined-cycle power-generating units**, and

(ii) The maximum permitted discharge (expressed as MGD) for the entire power plant, including the combined cycle units, as identified in the plant's NPDES permit authorizing the *combined-cycle power- generating units**.

B. Final Compliance Dates

(1) *Existing power plants** shall comply with Section 2.A, above, as soon as possible, but no later than, the dates shown in Table 1, contained in Section 3.E, below.

(2) Based on the need for continued operation of an *existing power plant** to maintain the reliability of the electric system, a final compliance date may be suspended under the following circumstances:

(a) **Suspension of Final Compliance Date for Less Than 90 Days for *Existing Power Plants** Within CAISO Jurisdiction.** If CAISO determines that continued operation of an *existing power plant** is necessary to maintain the reliability of the electric system in the short- term, CAISO shall provide written notification to the State Water Board, the Regional Water Board with jurisdiction over the *existing power plant**, and the SACCWIS. If the Executive Directors of the CEC and CPUC do not object in writing within 10 days to CAISO's written notification, the notification provided pursuant to this paragraph will suspend the final compliance date for the shorter of 90 days or the time CAISO determines necessary to maintain reliability. In the event either CEC or CPUC objects as provided in this paragraph, then the State Water Board shall hold a hearing as expeditiously as possible to determine whether to suspend the compliance date in accordance with paragraph (d).

(b) **Suspension of Final Compliance Date for Longer Than 90 Days, or consecutive less than 90 day suspensions, for *Existing Power Plants** Within CAISO Jurisdiction.** If CAISO determines that continued operation of an *existing power plant** is necessary to maintain the reliability of the electric system, CAISO shall provide written notification to the State Water Board, the Regional Water Board with jurisdiction over the *existing power plant**, and the SACCWIS. If the Executive Directors of the CEC and CPUC do not object in writing within 10 days to CAISO's

determination, the notification provided pursuant to this paragraph will suspend the final compliance date for 90 days. During the 90-day time suspension or within 90 days of receiving a written notification from CAISO, the State Water Board shall conduct a hearing in accordance with paragraph (d) to determine whether to suspend the final compliance date for more than the original 90 days pending, if necessary, full evaluation of amendments to final compliance dates contained in the policy.

(c) **Suspension of Final Compliance Date for *Existing Power Plants** Within Los Angeles Department of Water and Power (LADWP) Service Area.** If the LADWP Commission determines, through a public process, that continued operation of an *existing power plant** operated by LADWP is necessary to maintain the reliability of the electric system in the short-term, LADWP shall provide written notification to the State Water Board, the Regional Water Board with jurisdiction over the *existing power plant**, and the SACCWIS. Within 45 days of receiving a written notice from LADWP, the State Water Board shall conduct a hearing in accordance with paragraph (d) to determine whether to suspend the final compliance date. In considering whether to suspend or amend the final compliance dates the State Board shall consult with the CAISO.

(d) **State Water Board Hearings on Suspension of Final Compliance Dates.** In considering whether to suspend or amend the final compliance dates, the State Water Board shall afford significant weight to the recommendations of the CAISO.

C. Immediate and Interim Requirements

(1) No later than October 1, 2011, the owner or operator of an *existing power plant** with an *offshore intake** shall install large organism exclusion devices having a distance between exclusion bars of no greater than nine inches, or install other exclusion devices, deemed equivalent by the State Water Board.

(2) No later than October 1, 2011, the owner or operator of an *existing power plant** unit that is not directly engaging in *power-generating activities**, or *critical system maintenance**, shall cease intake flows, unless the owner or operator demonstrates to the State Water Board that a reduced minimum flow is necessary for operations.

(3) The owner or operator of an *existing power plant** must implement measures to mitigate the interim impingement and entrainment impacts resulting from the cooling water intake structure(s), commencing October 1, 2015 and continuing up to and until the owner or operator achieves final compliance. The owner or operator must include in the

implementation plan, described in Section 3.A below, the specific measures that will be undertaken to comply with this requirement. An owner or operator may comply with this requirement by:

(a) Demonstrating to the State Water Board's satisfaction that the owner or operator is compensating for the interim impingement and entrainment impacts through existing mitigation efforts, including any projects that are required by state or federal permits as of October 1, 2010; or

(b) Demonstrating to the State Water Board's satisfaction that the interim impacts are compensated for by the owner or operator providing funding to the California Coastal Conservancy which will work with the California Ocean Protection Council to fund an appropriate *mitigation project**; or

(c) Developing and implementing a *mitigation project** for the facility, approved by the State Water Board, which will compensate for the interim impingement and entrainment impacts. Such a project must be overseen by an advisory panel of experts convened by the State Water Board.

(d) The *habitat production foregone** method, or a comparable alternate method approved by the State Water Board, shall be used to determine the habitat and area, based on replacement of the annual entrainment, for funding a *mitigation project**.

(e) It is the preference of the State Water Board that funding is provided to the California Coastal Conservancy, working with the California Ocean Protection Council, for mitigation projects directed toward increases in marine life associated with the State's Marine Protected Areas in the geographic region of the facility.

(4) Owners or operators of fossil fueled units that have submitted implementation plans to comply with this Policy under Section 2.A(1) and have requested compliance dates after December 31, 2022 that are approved by the State Water Board as provided in Section 3.E shall:

(a) Commit to eliminate OTC and seawater use for cooling water purposes for all units at the facility.

(b) Conduct a study or studies, singularly or jointly with other facilities, to evaluate new technologies or improve existing technologies to reduce impingement and entrainment.

(c) Submit the results of the study and a proposal to minimize entrainment and impingement to the Chief Deputy Director no later than December 31, 2015.

(d) Upon approval of the proposal by the Chief Deputy Director, complete implementation of the proposal no later than December 31, 2020.

D. *Nuclear-Fueled Power Plants**

If the owner or operator of an existing *nuclear-fueled power plant** demonstrates that compliance with the requirements for *existing power plants** in Section 2.A, above, of this Policy would result in a conflict with any safety requirement established by the Commission, with appropriate documentation or other substantiation from the Commission, the State Water Board will make a site- specific determination of best technology available for minimizing adverse environmental impact that would not result in a conflict with the Commission's safety requirements. The State Water Board may also establish alternative, site- specific requirements in accordance with Section 3.D (8).

3. Implementation Provisions

A. With the exception of *nuclear-fueled power plants**, which are covered under 3.D, below, no later than April 1, 2011, the owner or operator of an *existing power plant** shall submit an implementation plan to the State Water Board.

(1) The implementation plan shall identify the compliance alternative selected by the owner or operator, describe the general design, construction, or operational measures that will be undertaken to implement the alternative, and propose a realistic schedule for implementing these measures that is as short as possible. If the owner or operator chooses to repower the facility to reduce or eliminate reliance upon OTC, or to retrofit the facility to implement either Track 1 or Track 2 alternatives, the implementation plan shall identify the time period when generating power is infeasible and describe measures taken to coordinate this activity through the appropriate electrical system balancing authority's maintenance scheduling process.

(2) If the owner or operator selects *closed-cycle wet cooling** as a compliance alternative, the owner or operator shall address in the implementation plan whether recycled water of suitable quality is available for use as makeup water.

B. The SACCWIS shall be impaneled no later than January 1, 2011, by the Executive Director of the State Water Board, to advise the State Water Board on the implementation of this Policy to ensure that the implementation schedule takes into account local area and grid reliability, including permitting

constraints. SACCWIS shall include representatives from the CEC, CPUC, CAISO, CCC, SLC, ARB, and State Water Board.

(1) SACCWIS meetings shall be scheduled regularly and as needed. Meetings shall be open to the public and shall be noticed at least 10 days in advance of the meeting. All SACCWIS products shall be made available to the public.

(2) The SACCWIS shall review the owner or operator's proposed implementation schedule and report to the State Water Board with recommendations no later than October 1, 2011. The SACCWIS may consult with other appropriate agencies, including but not limited to the Regional Water Boards, air quality districts, and the LADWP, in the process of reviewing implementation schedules and providing recommendations to the State Water Board.

(3) The CAISO and the LADWP shall each submit to the SACCWIS by December 31 and January 31, respectively, each year a grid reliability study for their respective jurisdictions that has been developed pursuant to a public process and approved by their governing bodies. In order to assure that SACCWIS can provide annual reports to the State Water Board by March 31, the SACCWIS shall promptly meet to consider the reliability studies submitted by CAISO and the LADWP.

(4) The SACCWIS will report to the State Water Board with recommendations on modifications to the implementation schedule every year starting in 2012. If members of SACCWIS do not believe the full committee recommendations reflect their concerns they may issue minority recommendations that the State Water Board shall consider as part of the SACCWIS recommendations.

(5) The State Water Board shall consider the SACCWIS' recommendations and, if appropriate, consider modifications to this Policy. In the event that the SACCWIS energy agencies (CAISO, CPUC, and CEC) make a unanimous recommendation for implementation schedule modification based on grid reliability, the State Water Board shall afford significant weight to the recommendation.

C. The Regional Water Board shall reissue or, as appropriate, modify NPDES permits issued to owners or operators of *existing power plants*,* after a hearing in the affected region, to ensure that the permits conform to the provisions of this Policy.

(1) The permits shall incorporate a final compliance schedule that requires compliance no later than the due dates contained in Table 1, contained in Section 3.E, below. If the State Water Board determines that a longer compliance schedule is necessary to maintain reliability of the electric system per SACCWIS recommendations while other OTC power plants

are retrofitted, repowered, or retired or transmission upgrades take place, this delay shall be incorporated into the compliance schedule and stated in the permit findings.

(2) The Regional Water Board shall reopen, if necessary, the relevant permits and modify the final compliance schedules, if appropriate, based on modifications to the policy approved by the State Water Board or the suspension of final compliance dates pursuant to this policy.

(3) If an owner or operator selects Track 2 as the compliance alternative, the NPDES permit shall include a monitoring program that complies with Section 4 of this Policy.

(4) NPDES permits issued by the Regional Water Board shall include appropriate permit provisions to implement suspensions of final compliance dates authorized in Section 2.B (2) and modifications to final compliance dates specified in this policy, without reopening the permits.

D. No later than January 1, 2011 the Executive Director of the State Water Board, using the authority under section 13267(f) of the Water Code, shall request that Southern California Edison (SCE) and Pacific Gas & Electric Company (PG&E) conduct special studies for submission to the State Water Board.

(1) The special studies shall investigate alternatives for the *nuclear-fueled power plants** to meet the requirements of this Policy, including the costs for these alternatives.

(2) The special studies shall be conducted by an independent third party with engineering experience with nuclear power plants, selected by the Executive Director of the State Water Board.

(3) The special studies shall be overseen by a Review Committee, established by the Executive Director of the State Water Board no later than January 1, 2011, which shall include, at a minimum, representatives of SCE, PG&E, SACCWIS, the environmental community, and staffs of the State Water Board, Central Coast Regional Water Board, and the San Diego Regional Water Board.

(4) No later than October 1, 2011, the Review Committee, described above, shall provide a report for public comment detailing the scope of the special studies, including the degree to which existing, completed studies can be relied upon.

(5) No later than October 1, 2013 the Review Committee shall provide the final report and the Review Committee's comments for public comment detailing the results of the special studies and shall present the report to the State Water Board.

(6) Meetings of the Review Committee shall be open to the public and shall be noticed at least 10 days in advance of the meeting. All products of the Review Committee shall be made available to the public.

(7) The State Water Board shall consider the results of the special studies, and shall evaluate the need to modify this Policy with respect to the *nuclear-fueled power plants**. In evaluating the need to modify this Policy, the State Water Board shall base its decision to modify this Policy with respect to the *nuclear- fueled power plants** on the following factors:

(a) Costs of compliance in terms of total dollars and dollars per megawatt hour of electrical energy produced over an amortization period of 20 years;

(b) Ability to achieve compliance with Track 1 considering factors including, but not limited to, engineering constraints, space constraints, permitting constraints, and public safety considerations;

(c) Potential environmental impacts of compliance with Track 1, including, but not limited to, air emissions.

(8) If the State Water Board finds that for a specific *nuclear-fueled power plant** to implement Track 1, either

(a) the costs are wholly out of proportion to the costs identified in Tetra Tech, Inc., California's Coastal Power Plants: Alternative Cooling System Analysis, February 2008 (see pages ES-10 [summary], C-1 - C-2 and C- 23 - C-40 [Diablo Canyon Power Plant] and N-1 - N-2 and N-25 - N-42 [San Onofre Nuclear Generating Station]) and considered by the State Water Board in establishing Track 1, or

(b) compliance is wholly unreasonable based on the factors in paragraphs 7(b) and (c), then the State Water Board shall establish alternate requirements for that *nuclear-fueled power plant**. The State Water Board shall establish alternative requirements no less stringent than justified by the wholly out of proportion (i) cost and (ii) factor(s) of paragraph (7). The burden is on the person requesting the alternative requirement to demonstrate that alternative requirements should be authorized.

(9) In the event the State Water Board establishes alternate requirements for *nuclear-fueled power plants**, the difference in impacts to marine life resulting from any alternative, less stringent requirements shall be fully mitigated. Mitigation required pursuant to this paragraph shall be a *mitigation project** directed toward the increase in marine life associated with the State's Marine Protected Areas in the geographic region of the facility. Funding for the *mitigation project** shall be provided to the California Coastal Conservancy, working with the Ocean Protection Council to fund an appropriate *mitigation project**.

E. Table 1. Implementation Schedule

| | Milestone | Responsible Entity/Party | Due Date[2] |
|---|---|---|---|
| 1 | Request SCE and PG&E to conduct special studies to investigate compliance options for nuclear-fueled power plants* [Section 3.D] | State Water Board Executive Direction | 01/01/2011 |
| 2 | Establish Review Committee [Section 3.D(3)] | State Water Board Executive Director | 01/01/2011 |
| 3 | Establish SACCWIS [Section 3.B] | State Water Board Executive Director | 01/01/2011 |
| 4 | Submit a proposed implementation plan to the State and Regional Water Boards [Section 3.A] | Owner/operators of existing fossil- fueled power plants | 04/01/2011 |
| 5 | Provide a report for public comment, detailing the scope of the special studies on compliance options for nuclear-fueled power plants* [Section 3.D(4)] | Review Committee | 10/01/2011 |
| 6 | Review the owners or operators' proposed implementation schedules and report to the State Water Board with recommendations [Section 3.B(2)] | SACCWIS | 10/01/2011 |
| 7 | Humboldt Bay Power Plant in compliance | Owner/operator | 12/31/2010 |
| 8 | Potrero Power Plant in compliance | Owner/operator | 10/01/2011 |
| 9 | Install large organism exclusion devices with a distance between exclusion bars of no greater than nine inches, or equivalent device [Section 2.C(1)] | Owner/operators of existing power plants* with offshore intakes* | 10/01/2011 |

[2] These compliance dates were developed considering information provided by the CEC, CPUC, CAISO, and LADPW

| | Milestone | Responsible Entity/Party | Due Date[2] |
|---|---|---|---|
| 10 | Cease intake flows for units not directly engaging in power-generating activities* or critical system maintenance*, or demonstrate to the State Water Board that a reduced minimum flow is necessary for operations [Section 2.C(2)] | Owner/operators of existing power plants* | 10/01/2011 |
| 11 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCWIS | 03/31/2012 |
| 12 | South Bay Power Plant in compliance | Owner/operator | 12/31/2011 |
| 13 | Report to State Water Board on results of special studies on compliance options for nuclear-fueled power plants* [Section 3.D(5)] | Review Committee | 10/01/2013 |
| 14 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCWIS | 03/31/2013 |
| 15 | Haynes units 5 & 6 in compliance, repowered without OTC | LADWP | 12/31/2013 |
| 16 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCWIS | 03/31/2014 |
| 17 | Commence to implement measures to mitigate the interim impingement and entrainment impacts due to the cooling water intake structure(s) [Section 2.C(3)] | Owners/operators of existing power plants* | 10/01/2015 |
| 18 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCWIS | 03/31/2015 |
| 19 | El Segundo and Morro Bay power plants in compliance | Owner/operator | 12/31/2015 |
| 20 | Scattergood unit 3 in compliance, repowered without OTC | LADWP | 12/31/2015 |

| | Milestone | Responsible Entity/Party | Due Date[2] |
|---|---|---|---|
| 21 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCWIS | 03/31/2016 |
| 22 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCWIS | 03/31/2017 |
| 23 | Power plants in CPUC 2010 LTPP Cycle in compliance: Encina Unit 1, Contra Costa, Pittsburg [Section 1.J] | Owner/Operator | 12/31/2017 |
| 24 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCWIS | 03/31/2018 |
| 25 | Encina Power Station Units 2-5 in compliance [Section 1.J] | Owner/Operator | 12/31/2018 |
| 26 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCWIS | 03/31/2019 |
| 27 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCWIS | 03/31/2020 |
| 28 | Huntington Beach Units 1, 3, and 4; Redondo Beach Unit 7; Alamitos Units 1, 2, and 6; Mandalay; and Moss Landing in compliance | Owner/operator | 12/31/2020 |
| 29 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCWIS | 03/31/2021 |
| 30 | Redondo Beach Units 5, 6, and 8 in compliance | Owner/operator | 12/31/2021 |
| 31 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCWIS | 03/31/2022 |
| 32 | San Onofre Nuclear Generating Station in compliance with implementation provisions resulting from State Water Board action on special studies from Section 3.D | Owner/operator | 12/31/2022 |

| | Milestone | Responsible Entity/Party | Due Date[2] |
|---|---|---|---|
| 33 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCWIS | 03/31/2023 |
| 34 | Alamitos Units 3, 4, and 5; Huntington Beach Unit 2; and Ormond Beach in compliance | Owner/operator | 12/31/2023 |
| 35 | Report to State Water Board on status of implementation of Policy [Section 3.B(3)] | SACCWIS | 03/31/2024 |
| 36 | Diablo Canyon Nuclear Power Plant Unit 1 in compliance | Owner/operator | 11/02/2024 |
| 37 | Scattergood units 1 & 2 in compliance, repowered without OTC | LADWP | 12/31/2024 |
| 38 | Diablo Canyon Nuclear Power Plant Unit 2 in compliance | Owner/operator | 08/26/2025 |
| 39 | Haynes units 1 & 2 in compliance, repowered without OTC | LADWP | 12/31/2029 |
| 40 | Harbor unit 5 in compliance, repowered without OTC | LADWP | 12/31/2029 |
| 41 | Haynes unit 8 in compliance, repowered without OTC | LADWP | 12/31/2029 |

4. Track 2 Monitoring Provisions

A. Impingement Impacts: The following impingement studies are required to comply with Section 2.A.(2)(a)(ii):

(1) A baseline impingement study shall be performed, unless the discharger demonstrates, to the Regional Water Board's satisfaction, that prior studies accurately reflect current impacts. Baseline impingement shall be measured on-site and shall include sampling for all species impinged. The impingement study shall be designed to accurately characterize the species currently impinged and their seasonal abundance to the satisfaction of the Regional Water Board.

(a) The study period shall be at least 36 consecutive months.

(b) Impingement shall be measured during different seasons when the cooling system is in operation and over 24-hour sampling periods.

(c) When applicable, impingement shall be sampled under differing representative operational conditions (e.g., differing levels of power production, heat treatments, etc.).

(d) The study shall not result in any additional mortality above typical operating conditions.

(2) After the Track 2 controls are implemented, to confirm the level of impingement controls, another impingement study, consistent with Section 4.A(1)(a) to (d), above, shall be performed and reported to the Regional Water Board.

(3) The need for additional impingement studies shall be evaluated at the end of each permit period. Impingement studies shall be required when changing operational or environmental conditions indicate that new studies are needed, at the discretion of the Regional Water Board.

B. Entrainment Impacts: The following entrainment studies are required to comply with Section 2.A.(2)(b)(ii):

(1) A baseline entrainment study shall be performed, unless the discharger demonstrates, to the Regional Water Board's satisfaction, that prior studies accurately reflect current impacts. Prior studies that may have used a mesh size of 333 or 335 microns for sampling are acceptable for compliance with the review and approval of the Regional Water Board. If the Regional Water Board determines that a new baseline entrainment study shall be performed to determine larval composition and abundance in the source water, representative of water that is being entrained, then samples must be collected using a mesh size no

larger than 335 microns. Additional samples shall also be collected using a 200 micron mesh to provide a broader characterization of other *meroplankton** entrained. The source water shall be determined based on oceanographic conditions reasonably expected after Track 2 controls are implemented. Baseline entrainment sampling shall provide an unbiased estimate of larvae entrained at the intake prior to the implementation of Track 2 controls.

(a) Entrainment impacts shall be based on sampling for all *ichthyoplankton** and invertebrate *meroplankton** species. Individuals collected shall be identified to the lowest taxonomical level practicable. When practicable, genetic identification through molecular biological techniques may be used to assist in compliance with this requirement. Samples shall be preserved and archived such that genetic identification is possible at a later date.

(b) The study period shall be at least 36 consecutive months, and shall occur during different seasons, including periods of peak use when the cooling system is in operation (such as the summer months when energy is in high demand). Sampling shall be designed to account for variation in oceanographic conditions and larval abundance and behavior such that abundance estimates are reasonably accurate.

(2) After the Track 2 controls are implemented, to confirm the level of entrainment controls, another entrainment study (with a study design to the Regional Water Board's satisfaction, with samples collected using a mesh size no larger than 335 microns, and with additional samples also collected using a 200 micron mesh) shall be performed and reported to the Regional Water Board.

(3) The need for additional entrainment studies shall be evaluated at the end of each permit period. Entrainment studies shall be required when changing operational or environmental conditions indicate that new studies are needed, at the discretion of the Regional Water Board.

5. Definition of Terms

*Closed-cycle wet cooling system* – Refers to a cooling system, which functions by transferring waste heat to the surrounding air through the evaporation of water, thus enabling the reuse of a smaller amount of water several times to achieve the desired cooling effect. The only discharge of wastewater is from periodic blowdown for the purpose of limiting the buildup of concentrations of materials in excess of desirable limits established by best engineering practice.

*Combined-cycle power-generating units* - Refers to units within a power plant which combined generate electricity through a two-stage process involving combustion and steam. Hot exhaust gas from combustion turbines is passed through a heat recovery steam generator to produce steam for a steam turbine. The turbine exhaust steam is condensed in the cooling system and may or may not be returned to the power cycle. Combined cycle power- generating units are generally more fuel-efficient and use less cooling water than steam boiler units with the same generating capacity.

*Critical system maintenance* – are activities that are critical for maintenance of a plant's physical machinery and absolutely cannot be postponed until the unit is operating to generate electricity.

*Existing power plant(s)* – Refers to any power plant that is not a *new power plant**.

*Habitat production foregone* – Refers to the product of the average annual *proportional mortality** and the estimated area of the water body that is habitat for the species' source population. Habitat production foregone is an estimate of habitat area production that is lost to all entrained species on an annual basis.

*Ichthyoplankton* – Refers to the planktonic early life stages of fish (i.e., the pelagic eggs and larval forms of fishes).

*Intake flow rate* – Refers to the instantaneous rate at which water is withdrawn through the intake structure, expressed as gallons per minute.

*Meroplankton* – For purposes of this Policy, refers to that component of the *zooplankton** community composed of squid paralarvae and the pelagic larvae of benthic invertebrates.

*Mitigation project* – Projects to restore marine life lost through impingement mortality and entrainment. Restoration of marine life may include projects to restore and/or enhance coastal marine or estuarine habitat, and may also include protection of marine life in existing marine habitat, for example through the funding of implementation and/or management of Marine Protected Areas.

*New power plant* – Refers to any plant that is a "new facility", as defined in

40 C.F.R. § 125.83 (revised as of July 1, 2007), and that is subject to Subpart I, Part 125 of the Code of Federal Regulations (revised as of July 1, 2007) (referred to as "Phase I regulations").

*Not Feasible* – Cannot be accomplished because of space constraints or the inability to obtain necessary permits due to public safety considerations, unacceptable environmental impacts, local ordinances, regulations, etc. Cost is not a factor to be considered when determining feasibility under Track 1.

*Nuclear-fueled power plant(s)* – Refers to Diablo Canyon Power Plant and/or San Onofre Nuclear Generating Station.

*Offshore intake* –refers to any submerged intake structure that is not located at the shoreline, and includes such intakes that are located in ocean, bay and estuary environments.

*Power-generating activities* – Refers to activities directly related the generation of electrical power, including start-up and shut-down procedures, contractual obligations (hot stand-by), hot bypasses, and *critical system maintenance** regulated by the Nuclear Regulatory Commission. Activities that are not considered directly related to the generation of electricity include (but are not limited to) dilution for in-plant wastes, maintenance of source-and receiving water quality strictly for monitoring purposes, and running pumps strictly to prevent fouling of condensers and other power plant equipment.

*Proportional mortality* – the proportion of larvae killed from entrainment to the larvae in the source population, as determined by an Empirical Transport Model.

*Zooplankton* – For purposes of this Policy, refers to those planktonic invertebrates larger than 200 microns.

# Exhibit 8

# 2021 Report of the Statewide Advisory Committee on Cooling Water Intake Structures

# FINAL

## March 26, 2021

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# Acronyms and Abbreviations

| | |
|---|---|
| AFC | Application for Certification |
| BAA | Balancing Authority Area |
| BARCT | Best Available Retrofit Control Technology |
| CAISO | California Independent System Operator |
| CARB | California Air Resources Board |
| CCGT | Combined Cycle Gas Turbine |
| CEC | California Energy Commission |
| CPUC | California Public Utilities Commission |
| HE | Hour Ending |
| IEPR | Integrated Energy Policy Report |
| IOU | Investor-Owned Utility |
| IRP | Integrated Resource Planning |
| LADWP | Los Angeles Department of Water and Power |
| LCR | Local Capacity Requirement |
| LTPP | Long-Term Procurement Plan |
| MGD | Million Gallons per Day |
| MVAR | Mega Volt, Ampere, Reactive |
| MW | Megawatt |
| NPDES | National Pollutant Discharge Elimination System |
| NQC | Net Qualifying Capacity |
| OTC | Once-Through Cooling |
| PDT | Pacific Daylight Time |
| PPA | Power Purchase Agreement |
| PRM | Planning Reserve Margin |
| PTA | Petition to Amend |
| PTC | Permit to Construct |
| PTO | Participating Transmission Owner |
| RECLAIM | Regional Clean Air Initiatives Market |

| | |
|---|---|
| RMR | Reliability Must Run |
| SACCWIS | Statewide Advisory Committee on Cooling Water Intake Structures |
| SCAQMD | South Coast Air Quality Management District |
| SCE | Southern California Edison |
| SCGT | Single Cycle Gas Turbine |
| SDG&E | San Diego Gas & Electric |
| SLC | State Lands Commission |
| SONGS | San Onofre Nuclear Generating Station |
| State Water Board | State Water Resources Control Board |
| TMDL | Total Maximum Daily Load |
| TSO | Time Schedule Order |

## I. Introduction

The Statewide Advisory Committee on Cooling Water Intake Structures (SACCWIS) has prepared this report to the State Water Resources Control Board (State Water Board) to summarize the State of California's current electrical grid reliability needs and to recommend a two-year extension to the compliance schedule for Redondo Beach Generating Station (Redondo Beach) to address system-wide grid reliability needs.

The SACCWIS includes representatives from the California Energy Commission (CEC), California Public Utilities Commission (CPUC), California Coastal Commission (CCC), California State Lands Commission (SLC), California Air Resources Board (CARB), the California Independent System Operator Corporation (CAISO), and the State Water Board. The State Water Board, in adopting the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling, also known as the Once-Through Cooling (OTC) Policy,[1] impaneled the SACCWIS to advise the State Water Board on the implementation of the OTC Policy. The SACCWIS provides recommendations to ensure the compliance schedule takes into account the reliability of California's electricity supply, including local area reliability, statewide grid reliability, and permitting constraints. Section 3.B(4) of the OTC Policy provides that the SACCWIS will report to the State Water Board with recommendations on modifications to the compliance schedule each year.

Since 2010, the OTC Policy has reduced marine and estuarine water use by electric generators in California and lessened entrainment and impingement mortality of marine life. The SACCWIS is committed to realizing full compliance with the OTC Policy in the coming years, while maintaining the reliability of California's electric system and meeting the state's environmental and energy goals.

This report primarily focuses on power generating facilities within the California Independent System Operator (CAISO) balancing authority area (BAA). It does not focus on facilities owned or operated by the Los Angeles Department of Water and Power

[1] The most recent version of the OTC Policy is available on the State Water Board's website.

(LADWP), as those compliance dates were reviewed and modified by the State Water Board in July 2011.

On November 7, 2019, the CPUC adopted Decision (D.) 19-11-016, which directed load serving entities under its jurisdiction to procure 3,300 MW of capacity by August 1, 2023, and also recommended extensions of OTC Policy compliance dates for four OTC generators while procurement is underway. On January 23, 2020, the SACCWIS recommended a slightly modified extension schedule for the same four generators. On September 1, 2020, the State Water Board amended the OTC Policy under Resolution No. 2020-0029, which extended the compliance dates of four power plants to address system-wide grid reliability in the CAISO BAA. This OTC Policy amendment was approved by the Office of Administrative Law on November 30, 2020. The OTC Policy amendment extended the compliance dates as follows:

- Alamitos Generating Station Units 3, 4, and 5 for three years until December 31, 2023;
- Huntington Beach Generating Station Unit 2 for three years until December 31, 2023;
- Ormond Beach Generating Station Units 1 and 2 for three years until December 31, 2023; and
- Redondo Beach Generating Station Units 5, 6, and 8 for one year until December 31, 2021.

In August 2020, swaths of the western United States encountered a prolonged and extreme heat storm. This led to a series of circumstances that ultimately required the CAISO to initiate rotating outages in its BAA to prevent wide-spread service interruptions. Since that time, critical uncertainties have sparked efforts from the CPUC, CAISO, and CEC to revise their forecasting models and have highlighted the need for additional capacity.

On November 19, 2020, the CPUC adopted Rulemaking (R.) 20-11-003, which directs the CPUC to consider short-term procurement to address potential grid reliability issues starting in summer 2021. The CPUC adopted D.21-02-028 on February 11, 2021, which

directed the three investor-owned utilities to undertake expedited procurement for capacity that will be available to serve demand in the summer of 2021. D.21-02-028 also anticipates a subsequent decision in R.20-11-003 to address 2022 capacity needs. While this proceeding and other CPUC procurement efforts are still ongoing, a comprehensive stack analysis conducted by the CPUC, CAISO, and CEC indicates that additional procurement is needed to mitigate grid reliability concerns. The power generated by Redondo Beach will help offset projected system-wide shortfalls during periods of high energy demand.

As a result, the SACCWIS recommends the State Water Board extend the OTC Policy compliance date of Redondo Beach Units 5, 6, and 8 for two years through December 31, 2023.

## II. Status of Compliance and Once-Through Cooling Water Use

Since the OTC Policy was adopted in 2010, several power generating units have retired, repowered, or come into compliance. The closure of the San Onofre Nuclear Generating Station (SONGS) resulted in a significant reduction in projected ocean or estuarine water use for power plant cooling. Table 1 shows the power plants in the CAISO and LADWP BAAs that have achieved compliance, several of which did so well in advance of their mandated compliance deadlines.

**Table 1: OTC Compliance Achievement**

| Facility & Units | NQC (MW)[2] | OTC Policy Scheduled Compliance Date | Actual Compliance Date |
|---|---|---|---|
| Humboldt Bay 1, 2 | 135 | Dec. 31, 2010 | Retired Sept. 30, 2010 |
| South Bay | 296 | Dec. 31, 2011 | Retired Dec. 31, 2010 |
| Potrero 3 | 206 | Oct. 1, 2011 | Retired Feb. 28, 2011 |

[2] Net Qualifying Capacity (NQC) in Mega Watts (MW). NQC is the net amount of capacity available from a resource that can be counted towards meeting Resource Adequacy Requirements.

| Facility & Units | NQC (MW)[2] | OTC Policy Scheduled Compliance Date | Actual Compliance Date |
|---|---|---|---|
| Huntington Beach 3, 4 | 452 | Dec. 31, 2020 | Retired Nov. 1, 2012[3] |
| Contra Costa 6, 7 | 674 | Dec. 31, 2017 | Retired Apr. 30, 2013[4] |
| San Onofre 2, 3 | 2,246 | Dec. 31, 2022 | Retired June 7, 2013[5] |
| Haynes 5, 6 | 535 | Dec. 31, 2013 | Retired June 13, 2013[6] |
| El Segundo 3 | 335 | Dec. 31, 2015 | Retired July 27, 2013[7] |
| Morro Bay 3, 4 | 650 | Dec. 31, 2015 | Retired Feb. 5, 2014 |
| El Segundo 4 | 335 | Dec. 31, 2015 | Retired Dec. 31, 2015 |
| Scattergood 3 | 497 | Dec. 31, 2015 | Retired Dec. 31, 2015 |
| Pittsburg | 1,159 | Dec. 31, 2017 | Operations ceased Dec. 31, 2016 |
| Moss Landing 6, 7 | 1,509 | Dec. 31, 2020 | Retired Jan. 1, 2017 |
| Encina 1 | 106 | Dec. 31, 2017 | Retired Mar. 1, 2017 |
| Mandalay 1, 2 | 430 | Dec. 31, 2020 | Retired Feb. 5, 2018 |
| Encina 2-5 | 844 | Dec. 31, 2018 | Retired Dec. 11, 2018 |
| Redondo Beach 7 | 493 | Dec. 31, 2020 | Retired Oct. 1, 2019 |
| Alamitos 1, 2, 6 | 848 | Dec. 31, 2020 | Retired Dec. 31, 2019 |
| Huntington Beach 1 | 215 | Dec. 31, 2020 | Retired Dec. 31, 2019 |
| Moss Landing 1, 2 | 1,020 | Dec. 31, 2020 | Complied Oct. 23, 2020[8] |
| **Total Capacity (MW)** | 12,985 | -- | -- |

[3] Huntington Beach Units 3 and 4 were converted to synchronous condensers in 2013. Once-through cooling water was used in a limited capacity until September 30, 2018.
[4] Although NRG retired Contra Costa Units 6-7, the Marsh Landing facility was constructed immediately next to the retired facility. The Marsh Landing Generating Station is a non-OTC generating facility.
[5] SONGS Units 2 and 3 were officially retired June 7, 2013, but they ceased power generation on Jan. 31, 2012.
[6] LADWP retired Haynes Units 5-6 and replaced them with Haynes Units 11-16, which do not use OTC technology.
[7] NRG retired El Segundo Unit 3 and replaced it with El Segundo Units 5-8, which do not use OTC technology.
[8] Dynegy Moss Landing complied with Track 2 of the OTC Policy.

Table 2 reflects the current compliance plans for the remaining power generating units that use ocean water for once-through cooling. Table 3 presents recent performance of the OTC units in percent of annual capacity factors. The annual capacity factor is defined as the ratio of the electrical energy produced by a generating unit for the year divided by the maximum energy that could have been produced at continuous full power operation. The capacity factor provides one indication of how a generating unit is utilized. Generating units used to meet peak power needs typically have lower capacity factors. The capacity of most of the remaining OTC plants is only used a small percentage of the time, but this capacity helps serve demand during peak hours and stressed operating conditions. Some of the capacity at these plants will need to be replaced to ensure system and local reliability.

**Table 2: OTC Compliance Plans for Remaining Units**

| **Facilities and Units** | **NQC (MW) as of 12/2020** | **OTC Policy Scheduled Compliance Date** | **Owner Proposed Compliance Method** |
|---|---|---|---|
| Alamitos 3, 4, 5 | 1,137 | Dec. 31, 2023 | Plans to retire and replace units by compliance date |
| Harbor 5 | 229 | Dec. 31, 2029 | Plans to comply by Dec. 31, 2029[9] |
| Haynes 1, 2 | 444 | Dec. 31, 2029 | Plans to comply by Dec. 31, 2029 |
| Haynes 8 | 575 | Dec. 31, 2029 | Plans to comply by Dec. 31, 2029 |
| Huntington Beach 2 | 226 | Dec. 31, 2023 | Plans to retire and replace unit by compliance date |
| Ormond Beach 1, 2 | 1,491 | Dec. 31, 2023 | Plans to retire units by compliance date |
| Redondo Beach 5, 6, 8 | 834 | Dec. 31, 2021 | Plans to retire units by compliance date |
| Scattergood 1, 2 | 367 | Dec. 31, 2024 | Project pending |
| **Total Capacity (MW)** | 5,303 | -- | -- |

[9] In February 2019, the City of Los Angeles Mayor Eric Garcetti announced that LADWP will replace the OTC units with alternative renewable alternatives and LADWP has embarked on studies to assist in the determination of alternative(s) for future repower to replace the remaining OTC units at the Harbor, Haynes, and Scattergood Generating Stations.

**Table 3: Recent Performance of OTC Generating Units**

| CAISO Balancing Authority Area Facilities and Units | OTC Policy Scheduled Compliance Date | NQC (MW) | Annual Capacity Factors (Percent) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| Alamitos 1 | Dec. 31, 2020 | 175 | 1.40 | 3.00 | 2.00 | 2.70 | 2.09 | 1.81 |
| Alamitos 2 | Dec. 31, 2020 | 175 | 5.40 | 6.10 | 3.40 | 4.17 | 5.71 | 2.72 |
| Alamitos 3 | Dec. 31, 2023 | 321 | 16.60 | 10.80 | 10.40 | 6.67 | 10.13 | 5.58 |
| Alamitos 4 | Dec. 31, 2023 | 336 | 18.70 | 7.00 | 9.90 | 8.78 | 9.60 | 5.59 |
| Alamitos 5 | Dec. 31, 2023 | 480 | 1.70 | 3.40 | 1.90 | 3.06 | 2.93 | 1.24 |
| Alamitos 6 | Dec. 31, 2020 | 485 | 4.50 | 6.20 | 2.70 | 4.23 | 3.58 | 3.32 |
| Huntington Beach 2 | Dec. 31, 2023 | 226 | 26.20 | 19.40 | 12.40 | 9.03 | 6.99 | 4.12 |
| Moss Landing 1 | Dec. 31, 2020 | 510 | 39.20 | 35.50 | 24.60 | 24.73 | 44.64 | 56.80 |
| Moss Landing 2 | Dec. 31, 2020 | 510 | 47.00 | 37.00 | 26.10 | 24.83 | 43.46 | 53.57 |
| Ormond Beach 1 | Dec. 31, 2023 | 741 | 0.80 | 2.50 | 0.70 | 1.64 | 1.31 | 0.55 |
| Ormond Beach 2 | Dec. 31, 2023 | 750 | 2.40 | 3.20 | 0.80 | 1.75 | 1.28 | 1.63 |
| Redondo Beach 5 | Dec. 31, 2021 | 179 | 2.30 | 3.50 | 1.40 | 2.52 | 2.04 | 1.94 |
| Redondo Beach 6 | Dec. 31, 2021 | 175 | 2.10 | 4.20 | 3.10 | 4.18 | 1.67 | 2.50 |
| Redondo Beach 8 | Dec. 31, 2021 | 480 | 3.30 | 3.90 | 1.70 | 3.99 | 2.79 | 1.88 |
| **LADWP Balancing Authority Area Facilities and Units** | | | | | | | | |
| Harbor 5 | Dec. 31, 2029 | 75 | 3.30 | 2.40 | 4.00 | 2.29 | 1.01 | 3.40 |

| CAISO Balancing Authority Area Facilities and Units | OTC Policy Scheduled Compliance Date | NQC (MW) | Annual Capacity Factors (Percent) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| Haynes 1 | Dec. 31, 2029 | 230 | 12.70 | 6.50 | 12.30 | 3.45 | 1.64 | 4.05 |
| Haynes 2 | Dec. 31, 2029 | 230 | 13.10 | 8.00 | 16.00 | 5.34 | 1.13 | 1.18 |
| Haynes 8 | Dec. 31, 2029 | 264 | 34.20 | 38.00 | 40.90 | 39.56 | 45.39 | 39.22 |
| Scattergood 1 | Dec. 31, 2024 | 163 | 24.50 | 8.30 | 22.90 | 5.32 | 4.47 | 3.62 |
| Scattergood 2 | Dec. 31, 2024 | 163 | 6.60 | 21.20 | 5.90 | 2.09 | 2.38 | 6.62 |

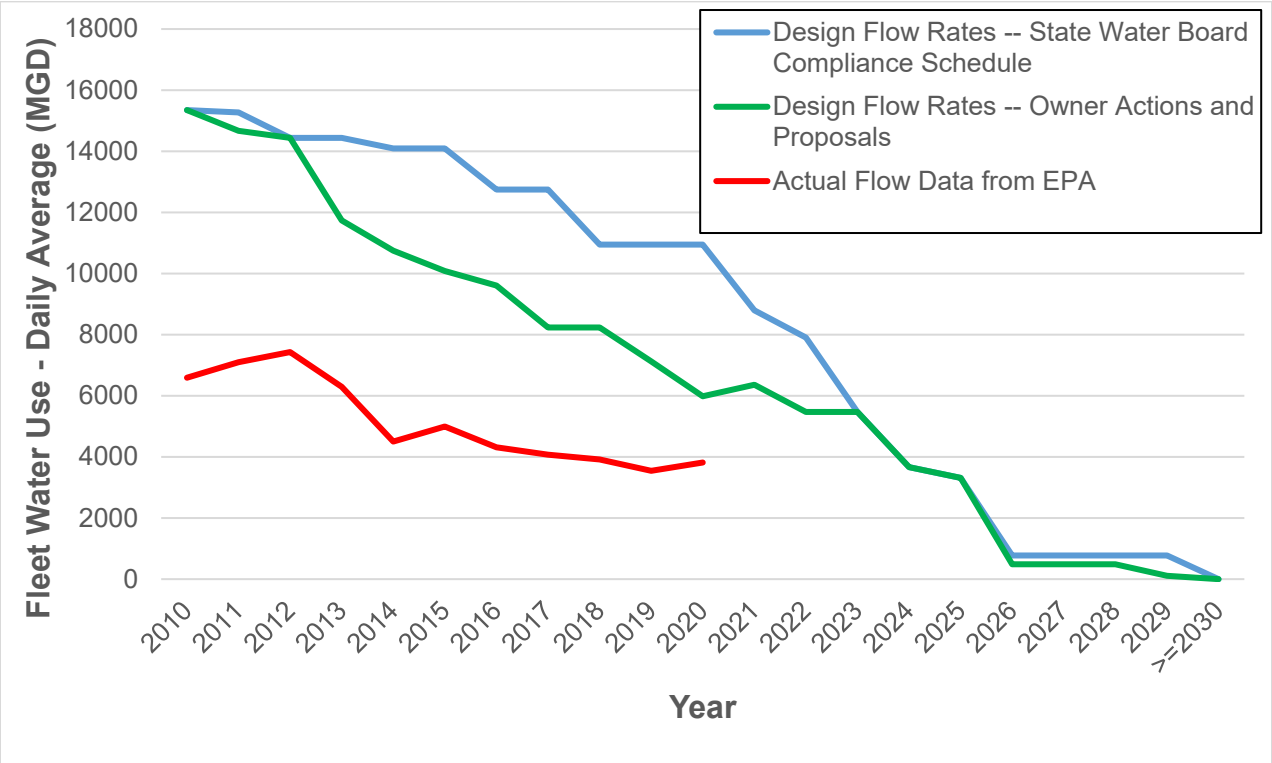
Source: California Energy Commission, Quarterly Fuel and Energy Report, December 2019.

**Once-Through Cooling Water Use**

There are a number of perspectives from which to assess the impact of the OTC power generating plants (OTC fleet) on impingement and entrainment of marine and estuarine aquatic life. All direct biological measures are beyond the scope of the SACCWIS' responsibility. However, Figures 1 and 2 offer an indicator of environmental impact using ocean or estuarine water flow rates as the metric through time, where Figure 1 shows flow without an extension of Redondo Beach and Figure 2 shows flow with an extension of Redondo Beach. The uppermost line in blue shows the reduction in design water flow based on the OTC Policy compliance schedule as most recently amended and adopted by the State Water Board. The green line shows the aggregate water flow using design flow rates based on the actual retirement dates and expected retirement dates. The red line shows actual flow rates from the OTC fleet. See Appendix A for actual flow rate data.

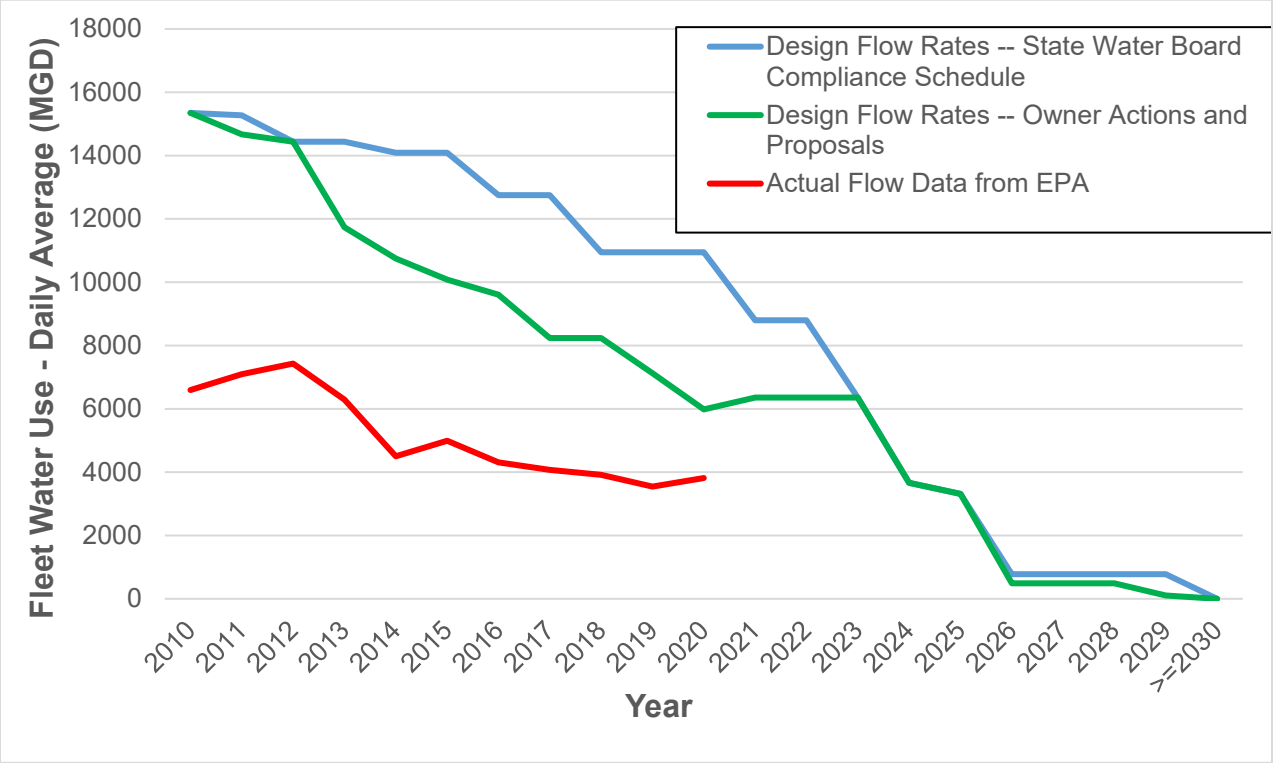
The red line is far below the two upper lines because virtually all fossil fuel OTC facilities are operating with annual capacity factors far below power plant permit expectations (the source of the design condition flow rates). In addition, SONGS and several other OTC facilities retired well before their OTC compliance date, thus creating accelerated environmental benefits compared to the original compliance schedule.

**Figure 1: Historic and Projected Water Usage by the Combined OTC Fleet Without a Redondo Beach Extension**




Source: CEC and State Water Board Staff, Updated February 17, 2021

**Figure 2: Historic and Projected Water Usage by the Combined OTC Fleet With a Redondo Beach Extension**




Source: CEC and State Water Board Staff, Updated March 3, 2021

## III. Grid Resource and Infrastructure Planning and Status

The CPUC's Long-Term Procurement Plan (LTPP) proceeding evaluated generation resources in the CAISO system every two years, most recently in 2015. The intent was to evaluate whether existing and projected resources are sufficient to meet future demand, and to authorize procurement of additional resources in the event that they are insufficient. Retirement schedules for OTC generating facilities were incorporated into this analysis and updated according to progress towards or changes in retirement deadlines. In addition to system-wide analyses, the LTPP also evaluated capacity requirements in localized, high-demand areas. The CPUC has now implemented its Integrated Resource Planning (IRP) process in response to the legislative requirements of Senate Bill 350 (De Leon, Chapter 547, Statutes of 2015), which serves as a successor to LTPP and includes the function of periodically evaluating generation resources in the CAISO system.[10]

The CEC is the lead agency for licensing fossil fuel power plants 50 MW and larger and has a regulatory certification process under the California Environmental Quality Act. Under this process, the CEC conducts an environmental analysis of each project's Application for Certification (AFC) including an analysis of alternatives and mitigation measures to minimize any significant adverse effect the project may have on the environment. These requirements do not apply to the repowering or replacement of an existing power plant wherein the net increase in capacity is less than 50 MW.

Tables 4 through 7 show the different authorizations and approvals of electric capacity procurement for the Southern California Area. The different tracks reflect the separate procurement authorizations under the CPUC's most recent full LTPP proceeding, R.12-03-014. Track 1 procurement stems from D.13-02-015, which outlined requirements in the West Los Angeles Basin and Big Creek/Ventura local reliability areas. Track 8 procurement stems from D.14-03-004, which outlined additional requirements in the West Los Angeles Basin and San Diego/Imperial Valley local reliability areas in response to the

[10] The combined IRP-LTPP proceeding is R.16-02-007.

retirement of the SONGS. The use of the term "track" in this context is different from the two tracks for compliance with the OTC Policy.

**Table 4: Southern California Edison Current Authorizations**

| Resource Type | Track 1 LCR[11] (West LA Basin) MW | Track 1 LCR (Big Creek/ Ventura) MW | Additional Track 4 Authorization (West LA Basin) MW | Total Authorization MW | Approved Applications MW |
|---|---|---|---|---|---|
| **Preferred Resources[12] & Energy Storage (Minimum)** | 200 | -- | 400 | 600 | 565[13] |
| **Gas-fired Generation (Minimum)** | 1,000 | -- | -- | 1,000 | 1,000 |
| **Optional: Preferred Resources/ Storage** | Up to 400 | -- | -- | Up to 400 | 0 |
| **Optional: Any Resource** | 200 | -- | 100 to 300 | 300 to 500 | 382 |
| **Required: Any Resource** | -- | 215 (minimum) to 290 | -- | 215 (minimum) to 290 | 207[14] |
| **Total** | 1,400 to 1,800 | 215 to 290 | 500 to 700 | 2,115 to 2,790 | 2,154 |

[11] Local Capacity Requirement (LCR)
[12] Preferred resources are those used for energy efficiency, demand response, renewable resources, and distributed generation. Preferred resources are described in the 2005 State Energy Action Plan II.
[13] Includes roughly 27 MW of storage capacity authorized by Resolution E-4804 to alleviate constraints in Southern California due to the Aliso Canyon gas storage facility outage.
[14] Includes the 100 MW Strata Saticoy storage project approved in D.19-12-055 and 95 MW of storage and demand response resources (with the option for an additional 20 MW from one storage resource) approved in Resolution E-5033, which replaced the 262 MW Puente Power Project that was approved in D.16-05-050 and subsequently cancelled.

**Table 5: Southern California Edison Approved Applications**[15]

| Resource Type | Location | Capacity MW | Status |
|---|---|---|---|
| **Demand Response** | Big Creek/Ventura | 14 | Approved[16] |
| **Demand Response** | West LA Basin | 5 | Approved |
| **Distributed Generation** | Big Creek/Ventura | 6 | Approved |
| **Distributed Solar Generation** | Johanna/Santiago | 12 | Approved |
| **Distributed Solar Generation** | West LA Basin | 28 | Approved |
| **Energy Efficiency** | Big Creek/Ventura | 6 | Approved |
| **Energy Efficiency** | Johanna/Santiago | 23 | Approved |
| **Energy Efficiency** | West LA Basin | 101 | Approved |
| **Energy Storage** | Big Creek/Ventura | 186 | Approved |
| **Energy Storage** | Johanna/Santiago | 153 | Approved |
| **Energy Storage** | Long Beach | 100 | Operational |
| **Energy Storage** | West LA Basin | 138 | Approved |
| **Combined Cycle Gas Turbine** | Alamitos | 640 | Operational |
| **Combined Cycle Gas Turbine** | Huntington Beach | 644 | Operational |
| **Gas Combustion Turbine** | Stanton | 98 | Operational |

[15] For additional details, see Southern California Edison application A.14-11-012, A.14-11-016, A.15-12-013, A.16-11-002, Resolution E-4804, and Resolution E-5033.
[16] Approved status indicates that the project has been approved, or that a portion of the capacity (MW) of the associated facility may be operational.

**Table 6: San Diego Gas & Electric Current Authorizations**

| Resource Type | D.13-03-029/ D.14-02-016 MW | Additional Track 4 Authorization MW | Total Authorization MW | Pending & Approved Applications MW |
|---|---|---|---|---|
| **Preferred Resources & Energy Storage** | -- | 200 (Minimum) | 300 | 144.5[17] |
| **Optional: Any Resource** | 300 (Pio Pico, CA) | 300 to 600 | 600 to 900 | 800 |
| **Total** | 300 | 500 to 800 | 800 to 1,100 | 944.5 |

**Table 7: San Diego Gas & Electric Approved Applications**[18]

| Resource Type | Location | Capacity in MW | Status |
|---|---|---|---|
| **Demand Response** | San Diego/Imperial Valley | 4.5 | Approved[19] |
| **Energy Efficiency** | San Diego/Imperial Valley | 19 | Approved |
| **Energy Storage** | San Diego/Imperial Valley | 121 | Approved |
| **Gas Combustion Turbine** | Carlsbad (Encina site) | 500 | Operational |
| **Gas Turbine** | Pio Pico | 300 | Operational |

[17] Includes roughly 38 MW of storage capacity authorized by Resolution E-4798 to alleviate constraints in Southern California due to the Aliso Canyon gas storage facility outage.

[18] For additional details on approved projects, see San Diego Gas & Electric application A.14-07-009, A.16-03-014, A.17-04-017, and Resolution E-4798.

[19] Approved status indicates that the project has been approved, or that a portion of the capacity (MW) of the associated facility may be operational.

The Alamitos AFC and Huntington Beach Petition to Amend (PTA) Certifications were approved on April 12, 2017, and the projects reached commercial operation in February 2020. The Stanton Energy Reliability Center is one of the projects selected by Southern California Edison (SCE) to meet the Western Los Angeles Basin local capacity requirements, and reached commercial operation in July 2020. The Redondo Beach AFC was withdrawn by AES on April 7, 2020, and on June 3, 2020, the Energy Commission's Presiding Member terminated the proceeding for the Redondo Beach AFC. The NRG Puente Power Project AFC was withdrawn by NRG on December 7, 2018, and will now be replaced with a suite of alternatives.[20] On December 11, 2018, the Energy Commission's Presiding Member terminated the proceeding for the NRG Puente Power Project AFC.[21] Following solicitations by SCE to replace the Puente Power Project, the CPUC approved 195 MW of storage and demand response capacity in D.19-12-055 and Resolution E-5033.

In addition to its work supporting the CPUC LTPP and now the IRP proceeding, the CAISO expanded its transmission planning process to explore transmission alternatives for improving reliability to the local capacity areas affected by the retirements of OTC generating units. The CAISO approved several transmission upgrades and additions in its 2013-2014 transmission planning process to help address Local Capacity Requirements (LCR) issues associated with the compliance schedule under the OTC Policy and the closure of SONGS. The timing of the CAISO-approved transmission projects and CPUC projects, as well as authorized procurement levels for SCE and San Diego Gas & Electric (SDG&E), facilitate attainment of the compliance schedule of the OTC Policy.

The CAISO's analysis in the 2019-2020 Transmission Plan[22] indicated that the authorized resources and previously-approved transmission projects are working together to meet

[20] The Puente Power Project was a replacement project for the Mandalay Power Plant. The suite of alternatives includes: transmission upgrades, additional energy efficiency, demand response, and battery storage.
[21] The 2018-2019 Transmission Plan is available on CAISO's website.
[22] Draft plans and appendices of the 2018-2019 Transmission Plan are available on CAISO's website.

the reliability needs in the Los Angeles Basin and San Diego areas. Due to the delay of the Carlsbad Energy Center Project, the CAISO conducted a 2018 summer reliability study to assess risk to the Los Angeles Basin and San Diego-Imperial Valley local reliability areas. The assessment culminated in the Encina Power Station 2018 Reliability Study.[23] This study was completed at the end of 2016 and was the basis for amending the OTC Policy to defer the compliance date for Encina Units 2, 3, 4, and 5 by one year to 2018.

The following provides a summary of the reliability transmission projects approved by the CAISO Board of Governors in the 2012-2013, 2013-2014, 2014-2015, 2015-2016, and 2016-2017 Transmission Plans[24] to address reliability concerns related to the retirement of SONGS and OTC generating facilities in the Los Angeles Basin and San Diego local areas. In Table 8, the target in-service date and responsible Participating Transmission Owner (PTO) are identified.

**Table 8: In-Service Dates for CAISO Board Approved Transmission Projects**

| | **Transmission Projects** | **PTO Service Territory** | **Target In-Service Dates** |
|---|---|---|---|
| 1 | Talega Synchronous Condensers (2x225 MVAR) | SDG&E | In-Service (8/7/2015) |
| 2 | San Luis Rey Synchronous Condensers (2x225 MVAR) | SDG&E | In-Service (12/29/2017) |
| 3 | Imperial Valley Phase Shifting Transformers (2x400 MVAR) | SDG&E | In-Service (5/1/2017) |
| 4 | Sycamore – Peñasquitos 230kV Line | SDG&E | In-Service (8/29/2018) |
| 5 | San Onofre Synchronous Condensers (1x225 MVAR) | SDG&E | In-Service (10/16/2018) |

[23] The SACCWIS' Encina Power Station 2018 Reliability Study is available on the State Water Board's website.
[24] Transmission plans are found on the CAISO's website as follows: 2012-2013 Transmission Plan; 2013-2014 Transmission Plan; 2014-2015 Transmission Plan; 2015-2016 Transmission Plan; 2016-2017 Transmission Plan.

| | Transmission Projects | PTO Service Territory | Target In-Service Dates |
|---|---|---|---|
| 6 | Miguel VAR Support (450 MVAR) | SDG&E | In-Service (4/28/2017) |
| 7 | Santiago Synchronous Condensers (3x81 MVAR) | SCE | In-Service (12/8/2017) |
| 8 | Mesa Loop-In Project and South of Mesa 230kV Line Upgrades | SCE | 3/31/2022 |
| 9 | Extension of Huntington Beach Unit 3 Synchronous Condenser (140 MVAR) | SCE | RMR contract extended and expired on 12/31/2017[25] |

**Mesa Loop-In Substation Project**

The Mesa Loop-In Substation Project operational date is delayed until 2022. SCE filed an application for a Permit to Construct (PTC) the Mesa Loop-In Substation Project with the CPUC on March 13, 2015. On February 9, 2017, SCE received the PTC from the CPUC. SCE received the first Notice to Proceed from the CPUC on September 27, 2017, and the second Notice to Proceed for the remaining scope of work (remaining substation, satellite substation work, telecom scope of work) on November 15, 2017. Construction of the project commenced on October 2, 2017. The current schedule forecasts a March 2022 in-service date as noted in the SCE 10Q and Federal Energy Regulatory Commission (FERC) form 730.

The Mesa 230 kV loop-in portion of the Mesa Loop-In Project has been completed, bringing new power sources to Mesa substation. The 230 kV bus tie breaker is operated in the closed position (while 500kV portion is constructed) to help mitigate loading concerns. Therefore, at this time, the SACCWIS is not recommending an amendment to the OTC Policy to extend compliance dates to provide grid reliability associated with the Mesa Loop-In Substation Project.

[25] The contract for the synchronous condensers expired on Dec. 31, 2017, and they are no longer operating.

**CPUC Incremental Capacity Procurement Pursuant to D.19-11-016**

On November 7, 2019, the CPUC adopted D.19-11-016 directing procurement of 3,300 MW from load serving entities under the CPUC's jurisdiction to ensure system-wide electric reliability. The decision also recommended 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. Ultimately the SACCWIS recommended a slight modification to the State Water Board to 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. The modification was in recognition of comments the State Water Board received. The State Water Board received comments regarding impacts from the continued operation of Redondo Beach. The State Water Board also received comments 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. An amendment to the OTC Policy compliance dates for Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach consistent with recommendation of the SACCWIS was adopted by the State Water Board on September 1, 2020.

The CPUC continues to monitor procurement under D.19-11-016.[26] That decision required 50 percent of the required procurement to be online by August 1, 2021; 75 percent to be online by August 1, 2022; and 100 percent to be online by August 1, 2023. In D.20-12-044, the CPUC established interim milestones and reporting deadlines (September 1, February 1, and August 1) for each procurement tranche.[27]

[26] CPUC D.19-11-016 can be found on the CPUC's website.
[27] CPUC D.20-12-044 can be found on the CPUC's website.

## IV. Local Air District Permitting and Rulemaking Activity Affecting Power Plants

In accordance with their 2016 Air Quality Management Plan, the SCAQMD has been working to transition from their local market-based pollutant trading Regional Clean Air Incentives Market (RECLAIM) program back to source-specific command-and-control rules that reflect Best Available Retrofit Control Technology (BARCT). All of the OTC power plants in SCAQMD participate in RECLAIM.[28]

Amendments to Rule 1135 for electric generating facilities were adopted in 2018 to reflect BARCT. The rule currently exempts OTC power plants from the BARCT standards through their OTC Policy compliance dates, including approved extensions, as long as other applicable air quality rule requirements are satisfied. Presently, emission offset requirements for OTC power plants undergoing repower are satisfied through access to SCAQMD's internal offset bank on a fee basis through provisions in Rules 1304 and 1304.1. Although RECLAIM program transition work is ongoing, SCAQMD currently does not have plans to change the eligibility of these plants' access to the internal offset bank, and to date U.S. EPA has not requested any changes with respect to power plants.

SCAQMD plans to amend Rule 1135 in the summer/fall 2021 timeframe, primarily for alignment with U.S. EPA's review of the rule and to update monitoring, recordkeeping, and reporting requirements. Stakeholders could recommend rule changes that may impact OTC repowers at that time. CARB staff will continue to monitor rulemaking activity that could affect power plant operation.

## V. Review of Generating Facility Compliance Dates

This section identifies specific issues associated with generating facilities in the CAISO's BAA. These facilities include: Moss Landing, Ormond Beach, Huntington Beach, Alamitos, and Redondo Beach.

[28] Includes AES Alamitos, AES Huntington Beach, AES Redondo Beach, El Segundo Power, LADWP Harbor Generating Station, LADWP Haynes Generating Station, LADWP Scattergood Generating Station.

**Moss Landing**

Dynegy's Moss Landing facility consists of two types of units – older steam boiler units and new combined cycle units. Units 6 and 7 are steam boilers with a capacity of roughly 750 MW each for a total of 1,510 MW. Units 1 and 2 are combined cycle units. Each 510 MW unit consists of two combustion turbines and a heat recovery steam generator. The final compliance date for Moss Landing under the original OTC Policy was December 31, 2017. In a signed settlement agreement on October 9, 2014, between Dynegy and the State Water Board, staff committed to seek an OTC compliance date extension through December 31, 2020, for Units 1, 2, 6, and 7. On April 7, 2015, the State Water Board adopted the OTC Policy amendment (Resolution No. 2015-0018) to extend the compliance date to December 31, 2020.

In its November 25, 2013, letter to the State Water Board, Dynegy stated its intent to implement Track 2 for Units 1 and 2 as well as Units 6 and 7. In its November 2014 updated implementation plan, Dynegy again stated its intent to implement Track 2 for Units 1 and 2 and identified its plans to achieve Track 2 compliance through prior flow reduction credits, use of operational controls, and installation of technology controls. Dynegy also stated its intent to implement Track 2 for Units 6 and 7 by December 31, 2020, or to cease operation until compliance was achieved. In its January 5, 2017, letter to the State Water Board, Dynegy indicated that it no longer intended to achieve Track 2 compliance for Units 6 and 7 and instead retired both units. Dynegy subsequently sent an updated implementation plan to the State Water Board and confirmed that Units 6 and 7 were shut down on January 1, 2017.[29]

On August 27, 2020, the CPUC issued Resolution E-5097, which approved a contract with SCE for portions of the energy produced by Moss Landing Units 1 and 2 through 2022.[30] On October 23, 2020, the State Water Board confirmed that Moss Landing

[29] The Dynegy Settlement updated Implementation Plan is available on the State Water Board's website.
[30] CPUC Resolution E-5097 is available on the CPUC's website.

Power Plant was in compliance with the OTC Policy via Track 2 and the terms of the 2014 Settlement entered into by the State Water Board and Dynegy Moss Landing, LLC.

The SACCWIS does not recommend a change in compliance dates for the units at the Moss Landing facility.

**Ormond Beach**

NRG's Ormond Beach Generating Station consists of two steam boiler units using once-through cooling with a combined capacity of 1,486 MW. An October 9, 2014 settlement agreement between the State Water Board and NRG determined Track 1 to be infeasible. NRG confirmed its intent to retire the facility by its OTC Policy compliance date in its implementation plan update sent to the State Water Board on January 19, 2018. On February 28, 2018, NRG notified the CPUC of its intention to shut down and retire Ormond Beach by October 1, 2018.

However, on September 28, 2018, NRG sent a letter to the CAISO to withdraw the earlier shutdown notice to meet local area reliability needs in 2019 pursuant to D.18-06-030. The CAISO's 2019 Local Capacity Technical Analysis Final Report (released May 15, 2018) identified that at least one Ormond Beach unit is needed to meet local capacity requirements, and this need cannot be addressed with other alternatives in time to meet the 2019 calendar year. As a result, CPUC decision D.18-06-030 required SCE to attempt to sign a contract with NRG for power from Ormond Beach for 2019 and 2020 to meet local capacity requirements. SCE filed an Advice Letter with the CPUC on September 4, 2018, seeking approval of a contract with NRG for power from Ormond Beach Unit 2 from January 1, 2019, through November 30, 2019; this contract was approved by the CPUC on September 26, 2018. On November 5, 2018, SCE filed another Advice Letter seeking approval of a contract with Ormond Beach Unit 2 from December 1, 2019, through December 31, 2020. This contract was approved by the CPUC on March 28, 2019, in Resolution E-4986. Based on the CPUC's decision D.19-11-016, the SACCWIS published a final report on January 23, 2020, recommending an extension of Ormond Beach's compliance date by three years. On August 27, 2020, the CPUC issued Resolution E-5099, which approved a contract with SCE for Ormond Beach

Units 1 and 2 through 2023. On September 1, 2020, the State Water Board amended the OTC Policy, which extended the compliance date for Ormond Beach Units 1 and 2 until December 31, 2023. The National Pollutant Discharge Elimination System (NPDES) permit for this facility was amended to reflect this change, effective January 1, 2021.

At this time, the SACCWIS does not recommend a change in compliance dates for the Ormond Beach facility.

**Huntington Beach**

AES Huntington Beach consists of four units. Units 3 and 4 retired on October 31, 2012, and were converted to synchronous condensers to provide voltage support in 2013. The synchronous condensers ceased the use of once-through cooling and permanently retired in September 2018. Unit 1 ceased the use of once-through cooling and retired on December 31, 2019. Unit 2 uses once-through cooling and has a capacity of 226 MW.

The Huntington Beach PTA was approved by the CEC on April 12, 2017. AES submitted an application for a 939 MW Combined Cycle Gas Turbine (CCGT) power plant, which was approved by the CEC on October 29, 2014. Subsequently, AES was selected for a Power Purchase Agreement (PPA) for a 644 MW power plant by SCE for the Huntington Beach facility, with different equipment configurations than had been approved by the CEC. The CPUC approved SCE procurement selection of the Huntington Beach repowering project for the Western Los Angeles Basin local capacity needs per D.15-11-041 at the November 19, 2015 CPUC voting meeting. On September 14, 2015, AES submitted a PTA for an 844 MW power plant, comprised of a 644MW CCGT in phase 1 and a 200 MW Single Cycle Gas Turbine (SCGT) in phase 2. The CEC approved the revised project on April 12, 2017.

Huntington Beach was awarded a PPA for 644 MW capacity with an initial date of May 1, 2020. This required the shutdown of one Huntington Beach unit prior to the OTC Policy compliance date due to limited interconnection capacity and to satisfy the SCAQMD rules for new emission sources. Huntington Beach Unit 1 complied with the OTC Policy on December 31, 2019, and the 644 MW CCGT began commercial operation in May 2020. AES does not plan to retrofit any of the existing units with alternate cooling technologies

to comply with Track 1 or utilize any operational or technical measures to comply with Track 2.

In its 2019-2020 transmission planning process reliability studies, the CAISO modeled the proposed 644 MW Huntington Beach repowering to replace the Huntington Beach generating facility after 2020.

In its December 18, 2020 implementation plan update to the State Water Board, AES confirmed its intention to comply with the OTC Policy compliance dates for the Huntington Beach generating unit that uses once-through cooling. A power purchase agreement has been executed with a non-utility Load Serving Entity that would extend the operation of Huntington Beach Unit 2 through December 31, 2023. Units 1, 3, and 4 have shut down to enable the new combined-cycle gas turbine (CCGT) at Huntington Beach to be placed in service. The Huntington Beach Phase 1 CCGT completed construction and began commercial operations as of February 4, 2020. On September 1, 2020, the State Water Board amended the OTC Policy, which extended the compliance date for Huntington Beach Unit 2 until December 31, 2023.

At this time, the SACCWIS does not recommend a change in compliance dates for the Huntington Beach facility.

**Alamitos**

Alamitos consists of six units using once-through cooling. Total capacity of these units is approximately 2,000 MW. In its December 18, 2020 update to their implementation plan, AES confirmed its intention to comply with the OTC compliance dates for the Alamitos generating units that utilize once-through cooling by utilizing Track 1 and shutting down and permanently retiring these units.

On December 27, 2013, AES filed an AFC with the CEC to repower the facility with four 3-on-1 CCGTs with a net generating capacity of 1,936 MW. On October 26, 2015, AES submitted a Supplemental Application for Certification, replacing the prior application, for a 1,040 MW power plant, comprised of a 640 MW CCGT in phase 1 and a 400 MW SCGT in phase 2. The CEC approved the project on April 12, 2017.

AES Alamitos was awarded a PPA for 640 MW of CCGT and 100 MW of energy storage capacity, and commercial operation began on June 1, 2020, and January 1, 2021, respectively. AES continues to pursue contracts and approvals for the additional 200 MW of storage and 400 MW of gas peakers. In its December 18, 2020, update to the State Water Board, AES stated there are currently no plans to proceed with the Phase 2 SCGT at Alamitos.

Alamitos generating units 1, 2, and 6 retired on December 31, 2019, to provide emission offsets for the new 640 MW CCGT, which began commercial operations as of February 4, 2020. AES does not plan to retrofit any of the existing units with alternate cooling technologies to comply with Track 1 or utilize any operational or technical measures to comply with Track 2. A resource adequacy contract has been executed with SCE that would extend the operation of Alamitos Units 3, 4, and 5 through December 31, 2023. The contract received final approval from the CPUC on August 27, 2020.[31] On September 1, 2020, the OTC Policy was amended to continue the operations of Alamitos Units 3, 4, and 5 until December 31, 2023. The NPDES Permit was amended and Time Schedule Order (TSO) approved to reflect this change, effective January 1, 2021. Further, the San Gabriel River Metals Total Maximum Daily Load has been amended and a contract with SCE has been approved to allow for continued operation of Alamitos Units 3, 4, or 5 until their compliance date of December 31, 2023 (see Resolution E-5098).[32]

In its 2019-2020 transmission planning studies, the CAISO modeled the proposed 640 MW Alamitos Energy Center to replace Alamitos OTC generation after 2020. An extension of the compliance date has been approved to meet local capacity needs in the Western LA Basin due to the delay of the Mesa Loop-In Project as well as CAISO system capacity needs.

At this time, the SACCWIS does not recommend a change in compliance dates for the Alamitos facility.

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[31] The resource adequacy contracts for the Alamitos units received CPUC approval on September 28, 2017.
[32] CPUC Resolution E-5098 is available on the CPUC's website.

**Redondo Beach**

Redondo Beach consists of four units using once-through cooling. The total capacity of these units is approximately 1,300 MW. In its December 18, 2020, update to their implementation plan, AES reaffirmed its intent to comply with Track 1 of the OTC Policy and to shut down and permanently retire all generating units at Redondo Beach per the compliance dates included in the OTC Policy.

Unit 7 was shut down on September 30, 2019, in advance of the OTC Policy compliance date to accommodate the provision of SCAQMD Rule 1304(a)(2) for offset exemptions for the new Huntington Beach CCGT. Redondo Beach has executed power purchase agreements with 16 non-utility Load Serving Entities for Units 5, 6 and 8 through December 31, 2021.

In 2013, AES proposed to repower the Redondo Beach facility in order to comply with the OTC Policy. The proposed repowering project is a natural-gas fired, combined-cycle, air-cooled electrical generating facility with a net generating capacity of 496 MW. As detailed later in this report, AES' AFC at the CEC is suspended. AES proposed alternative land use of the site, the CEC suspended the application on September 2, 2014, and a ballot initiative with the City of Redondo Beach to rezone the property to allow commercial and residential usage including a hotel occurred on March 3, 2015. The voters of the City of Redondo Beach rejected the ballot initiative to redevelop the property, resulting in AES resuming permitting efforts to repower the facility. On November 6, 2015, AES and the City of Redondo Beach filed a petition with the CEC requesting that the AFC proceeding be suspended until August 1, 2016. On November 25, 2015, the CEC suspended the proceedings, but stated that the suspension will remain in place until the applicant or other party makes a motion to reopen the proceeding and the CPUC grants the requested reopening. In early 2016, AES placed the power plant and its 51-acre site on the commercial real estate market. On August 12, 2016, AES and the City of Redondo Beach submitted a notice of agreement to continue the suspension until February 1, 2017. On March 30, 2020, AES closed on the sale of the Redondo Beach site, and AES withdrew the AFC on April 7, 2020.

On September 1, 2020, the OTC Policy was amended to continue the operations of Redondo Beach Units 5, 6, and 8 until December 31, 2021. The NPDES Permit was amended and TSO approved, effective January 1, 2021.

Previously, the CPUC, CAISO, and CEC indicated that a request for extending Redondo Beach's compliance date may be necessary depending on the pace and success of incremental procurement authorized by the CPUC. Additionally, in amending the OTC Policy on September 1, 2020, the State Water Board recognized in finding twenty of the adopting resolution (Resolution No. 2020-0029) that the CPUC, CAISO, and CEC may be revising their forecasting models to account for unexpectedly high peak energy demands during widespread extreme high temperatures, and may determine that there is a need to request additional extensions of compliance dates to maintain grid reliability and avoid rolling blackouts in the future.

At this time, the SACCWIS recommends an OTC Policy compliance date extension for Redondo Beach for two years, through December 31, 2023, to address system-wide grid reliability needs as described below.

## VI. System-Wide Grid Reliability Concerns and Need for Redondo Beach Generating Stations' Operation Through 2023

The CPUC, CAISO, and CEC all have critical roles in ensuring reliability for California's electrical system. The three agencies continue to collaborate to study electric reliability issues associated with the compliance schedule under the OTC Policy. The CPUC considers procurement authorizations for its jurisdictional load serving entities; the CAISO conducts reliability analysis and examines infrastructure upgrades and additions in its transmission planning process; and the CEC evaluates and, when necessary, issues licenses to site new generation resources.

### Final Root Cause Analysis and Recent Backstop Actions

In August 2020, swaths of the western United States encountered a prolonged and extreme heat storm. This led to a series of circumstances that ultimately required the CAISO to initiate rotating outages in its BAA to prevent wide-spread service interruptions. Subsequent to these outages, Governor Gavin Newsom directed the CPUC, CAISO, and

CEC to publish a report identifying the root cause of the events leading to these outages. Consistent with this directive, the CPUC, CAISO, and CEC published a Final Root Cause Analysis report on January 13, 2021.[33] The Final Root Cause Analysis points to three main factors that led to these outages, which are discussed in greater detail below along with recent backstop actions.

1. **"The climate change-induced extreme heat wave across the western United States resulted in demand for electricity exceeding existing electricity resource adequacy (RA) and planning targets.** Taking into account 35 years of weather data, the extreme heat wave experienced in August was a 1-in-30 year weather event in California. In addition, this climate change-induced extreme heat wave extended across the western United States. The resulting demand for electricity exceeded the existing electricity resource planning targets and resources in neighboring areas were also strained."[34]

   Although future weather conditions are not known today, climate change-induced impacts could result in a variety of outcomes, including: extreme and prolonged heat waves that drive up demand and cause generator-forced outages; droughts that reduce hydroelectric generation in California and nearby states that export electricity to California; altered weather patterns that reduce wind and solar generation; and wildfires that threaten transmission lines.

   The current 15 percent planning reserve margin (PRM) was not designed to capture the uncertainties related to these scenarios. As a result, increasing the PRM is being considered. The CAISO has proposed for consideration to the CPUC a higher interim PRM of 17.5 percent that would apply both at system peak and at a critical hour after the peak while more substantive reforms are considered. A recent ruling in the

[33] The Final Root Cause Analysis for the Mid-August 2020 Extreme Heat Wave can be found on CAISO's website.
[34] CAISO, CPUC, and CEC, *Final Root Cause Analysis: Mid-August 2020 Extreme Heat Wave*, January 13, 2021, pp. 3-4.

CPUC's IRP proceeding proposes using a 20.7 percent PRM at system peak for reliability planning purposes.[35]

The CEC will focus on additional reliability-related actions in the 2021 Integrated Energy Policy Report (IEPR).[36] The general scope of the IEPR addresses both electric reliability and natural gas reliability issues, as well as the development of an electric reliability Contingency Plan.[37] The Contingency Plan is being prepared by the CEC in coordination with the Governor's Office, CPUC, CAISO, and other appropriate state agencies and stakeholders. It will lay out a process to sequence emergency measures in rank order to minimize the potential for outages, while considering environmental, equity, and safety impacts.

2. **"In transitioning to a reliable, clean, and affordable resource mix, resource planning targets have not kept pace to ensure sufficient resources that can be relied upon to meet demand in the early evening hours. This made balancing demand and supply more challenging during the extreme heat wave.** The rotating outages both occurred after the period of gross peak demand, during the "net demand peak," which is the peak of demand net of solar and wind generation resources. With today's new resource mix, behind-the-meter and front-of-meter (utility-scale) solar generation declines in the late afternoon at a faster rate than demand decreases. These changes in the resource mix and the timing of the net peak have increased the challenge of maintaining system reliability, and this challenge is amplified during an extreme heat wave."[38]

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[35] CPUC, Administrative Law Judge's Ruling Seeking Feedback on Mid-Term Reliability Analysis and Proposed Procurement Requirement, Order Instituting Rulemaking to Continue Electric Integrated Resource Planning and Related Procurement Processes, Rulemaking 20-05-003, February 22, 2021.
[36] Additional details are available on the CEC's website.
[37] CAISO, CPUC, and CEC, *Final Root Cause Analysis: Mid-August 2020 Extreme Heat Wave*, January 13, 2021, p. 73.
[38] CAISO, CPUC, and CEC, *Final Root Cause Analysis: Mid-August 2020 Extreme Heat Wave*, January 13, 2021, p. 4.

The Final Root Cause Analysis lists several actions that will address the contributing factors that caused the August 2020 rotating outages, including "expedit[ing] the regulatory and procurement processes to develop additional resources that can be online by 2021" and to ensure resources are effective during the net demand peak. The CPUC specifically opened R.20-11-003 in November 2020 to establish policies, processes, and rules to ensure reliable electric service in California in the event of an extreme weather event in 2021.[39]

On February 11, 2021, the CPUC adopted D.21-02-028, which directs Pacific Gas and Electric Company, SCE, and SDG&E to procure additional capacity that is effective during the net demand peak for summer 2021.[40] Specifically, the investor-owned utilities (IOUs) were authorized to seek incremental capacity from existing plants, capacity that is at risk of retirement, incremental energy storage, and firm forward imported energy. The CPUC has also solicited party proposals for securing additional demand-side resources that can be available during the net demand peak period for summer 2021 and summer 2022. A subsequent CPUC decision addressing these measures is expected in the coming months.

These resource additions are on top of prior directives from the CPUC that will result in an increase of over 2,200 MW of new battery storage that can help meet the net peak demand by 2022. Most recently, the CPUC released a ruling seeking party comments on whether another 1,800 MW of procurement should be accelerated to be online by August 2023; comments from parties on the feasibility of that expedited procurement are due on March 19, 2021.[41]

3. **"Some practices in the day-ahead energy market exacerbated the supply challenges under highly stressed conditions.** A subset of energy market practices

[39] Documents pertaining to CPUC proceeding R.20-11-003 can be found on CPUC's website.
[40] Additional details are available on the CPUC's website.
[41] CPUC, Administrative Law Judge's Ruling Seeking Feedback on Mid-Term Reliability Analysis and Proposed Procurement Requirement, Order Instituting Rulemaking to Continue Electric Integrated Resource Planning and Related Procurement Processes, Rulemaking 20-05-003, February 22, 2021.

contributed to the inability to obtain or prioritize energy to serve CAISO load in the day-ahead market that could have otherwise relieved the strained conditions on the CAISO grid on August 14 and 15."[42]

In addition, the combination of existing real-time scheduling priorities and a previously implemented market enhancement inadvertently caused the CAISO's markets to fail to account for the obscuring effects of under-scheduling and convergence bidding during August's stressed operating conditions.[43] The CAISO has conducted a market enhancements stakeholder initiative to address the market-related factors identified in the Final Root Cause Analysis and plans to bring the proposals to its Board of Governors for approval in March 2021, with targeted implementation of changes by June 2021.[44]

The CPUC, CAISO, and CEC have been taking decisive action to address each of the above three factors. Although the proposals from each agency have not yet been fully implemented, they continue to collaborate towards the implementation of identified and potential solutions to support system-wide grid reliability; however, a great deal of uncertainty remains. At this point in time it is unclear whether authorized or proposed procurement will be realized and whether such procurement will adequately address the net demand peak period; whether an average level of imports can be delivered, whether actual operating conditions stay within planning targets for load, forced outages and needed operating reserves; whether all existing resources stay online and load serving entities are able to contract for all necessary resources in the CAISO BAA; and whether new and untested programs will perform as anticipated.

In addition to actions taken to address the findings and recommendations of the Final Root Cause Analysis, in 2020 almost 400 MW of resources announced their intent to

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[42] CAISO, CPUC, and CEC, *Final Root Cause Analysis: Mid-August 2020 Extreme Heat Wave*, January 13, 2021, p. 5.
[43] CAISO, CPUC, and CEC, *Final Root Cause Analysis: Mid-August 2020 Extreme Heat Wave*, January 13, 2021, p. 5.
[44] Details regarding this market enhancements stakeholder initiative are available on the CAISO's website.

retire or mothball from the CAISO system. The first group of announced retirements included approximately 150 MW of cogeneration resources in local capacity areas.[45] Since these resources were needed in their respective local areas for reliability, the CAISO was authorized by its Board of Governors to retain these resources under a cost-based contract to designate these resources as "reliability must run" (RMR) backstop resources. In December 2020, the CAISO Board of Governors approved the first ever system RMR for a 248 MW cogeneration power plant, which is needed to support system-wide reliability needs.[46] Unlike a local RMR, a resource needed for system-level reliability signals that all resources are equally needed to maintain reliability.

**System-wide Grid Reliability Analysis**

Following the Final Root Cause Analysis, the CPUC, CAISO, and CEC conducted a stack analysis to compare the forecasted demand in 2022 to all of the existing energy producing and load reduction resources and energy producing resources expected to come online by 2022. This analysis was completed by "stacking up" resource capacity values and comparing them to the forecasted demand plus two PRM alternatives. The analysis was conducted based on publicly available data at the time of publication of this report or using average or expected values.

Demand Analysis at the Most Critical Hour

To ensure the stack analysis considered the periods of greatest need, the analysis focused on the most critical hour after peak of the forecasted demand for each month June through October 2022. Demand is typically the highest during these months.

Traditionally, stack analyses focus on the gross demand peak hour. However, with the proliferation of solar resources, both behind-the-meter and grid-connected, the most critical hours the grid typically experiences are now after the peak load period. This period is when load is still relatively high, but intermittent resource generation (such as

[45] See CAISO's website for additional details.
[46] See CAISO's website for additional details.

solar) is below its capacity value and output is rapidly declining, otherwise known as the "net demand peak period" between 4 p.m. and 9 p.m.

To account for this pattern, the CPUC, CAISO and CEC created a stack analysis that addresses declining intermittent generation in the evening hours. For ease of comparison, the hour that ends (hour ending, HE) at 8 p.m. Pacific Daylight Time (PDT) was selected because solar generation is at or near zero by the end of the hour, but the demand remains relatively high compared to the peak. Table 9 shows this relationship. In July and August, the load for HE 8 p.m. PDT is over 600 MW lower than the peak of the month, which occurs an hour or two earlier. For June, September, and October, the difference is much smaller.

**Table 9: Comparison of June-October 2022 Peak Demand and Load for HE 8 p.m. PDT (MW)**

| Month | Peak demand | Peak demand hour ending (PDT) | Load for HE 8 p.m. PDT | Peak demand minus HE 8 p.m. PDT load ([B] - [D]) |
|---|---|---|---|---|
| [A] | [B] | [C] | [D] | [E] |
| June | 41,255 | 7 p.m. | 41,204 | 51 |
| July | 44,424 | 6 p.m. | 43,603 | 822 |
| August | 44,684 | 6 p.m. | 44,009 | 675 |
| September | 45,448 | 7 p.m. | 45,343 | 105 |
| October | 37,036 | 8 p.m. | 37,036 | 0 |

Source: California Energy Commission, 2020 Integrated Energy and Policy Report, California Energy Demand Update 2020 Hourly Forecast for CAISO footprint, mid-demand and mid additional achievable energy efficiency case.

Figures 3 through 7 show five illustrative snapshots of renewable generation in the CAISO market during the middle of each month from June through October 2020. Each figure shows that solar generation declines from a peak of approximately 10,000 MW or more to less than 300 MW by 8:00 p.m. PDT (shown in military time 20:00).

**Figure 3: Illustrative Snapshot of Renewable Generation in CAISO Footprint mid-June**

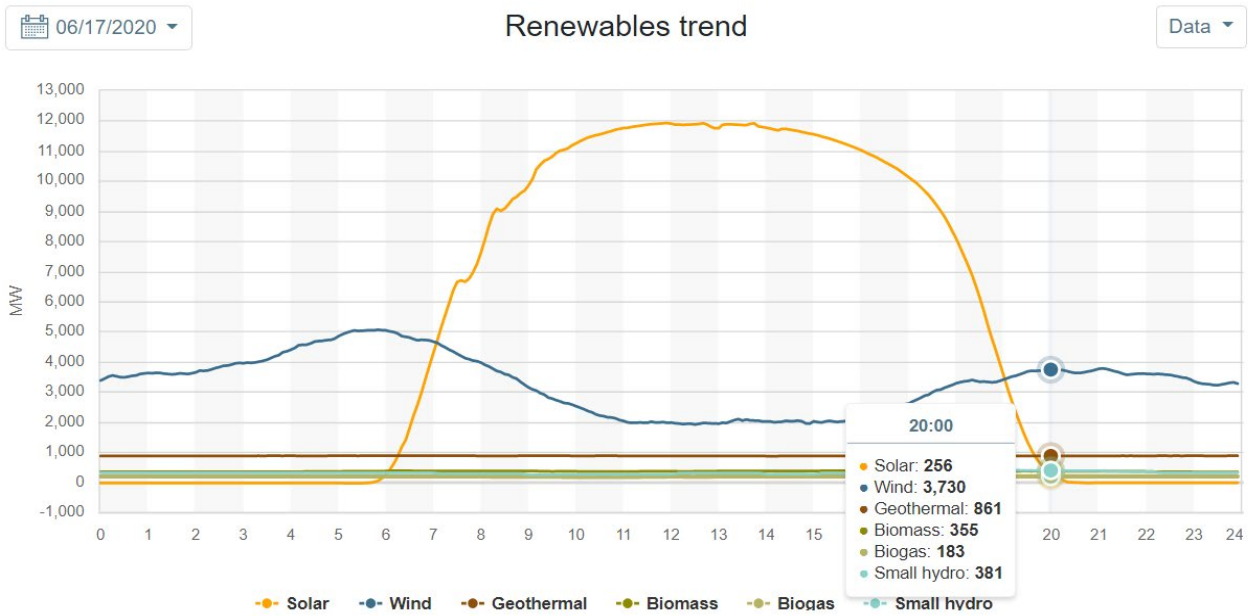



**Figure 4: Illustrative Snapshot of Renewable Generation in CAISO Footprint mid-July**

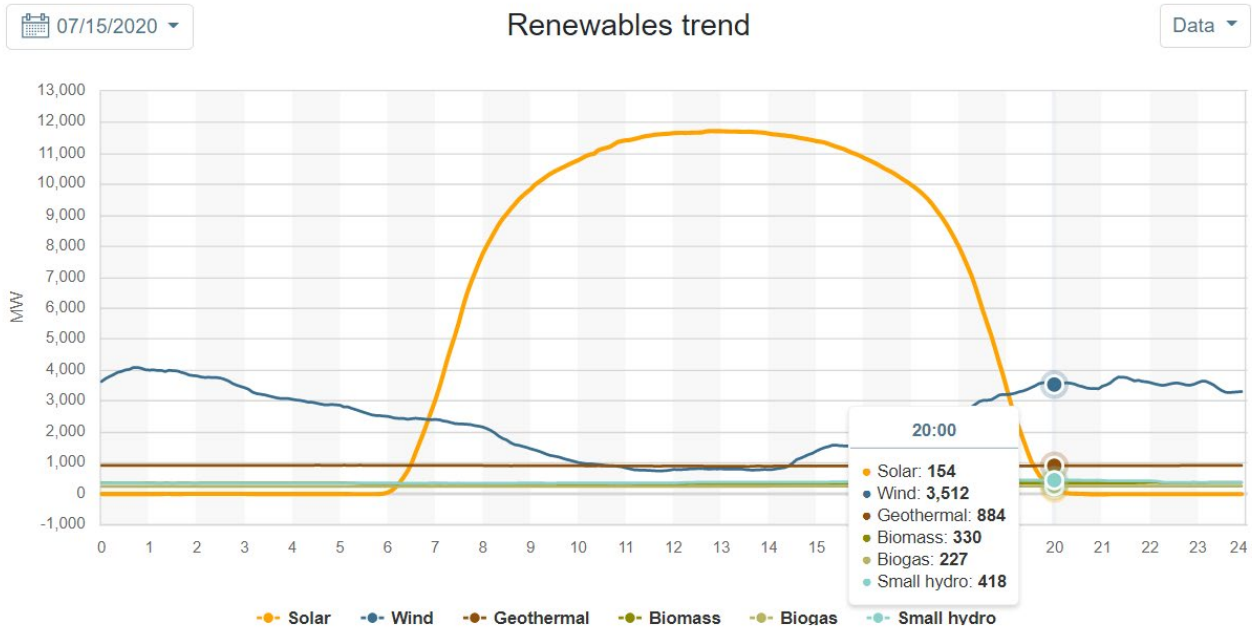


**Figure 5: Illustrative Snapshot of Renewable Generation in CAISO Footprint mid-August**

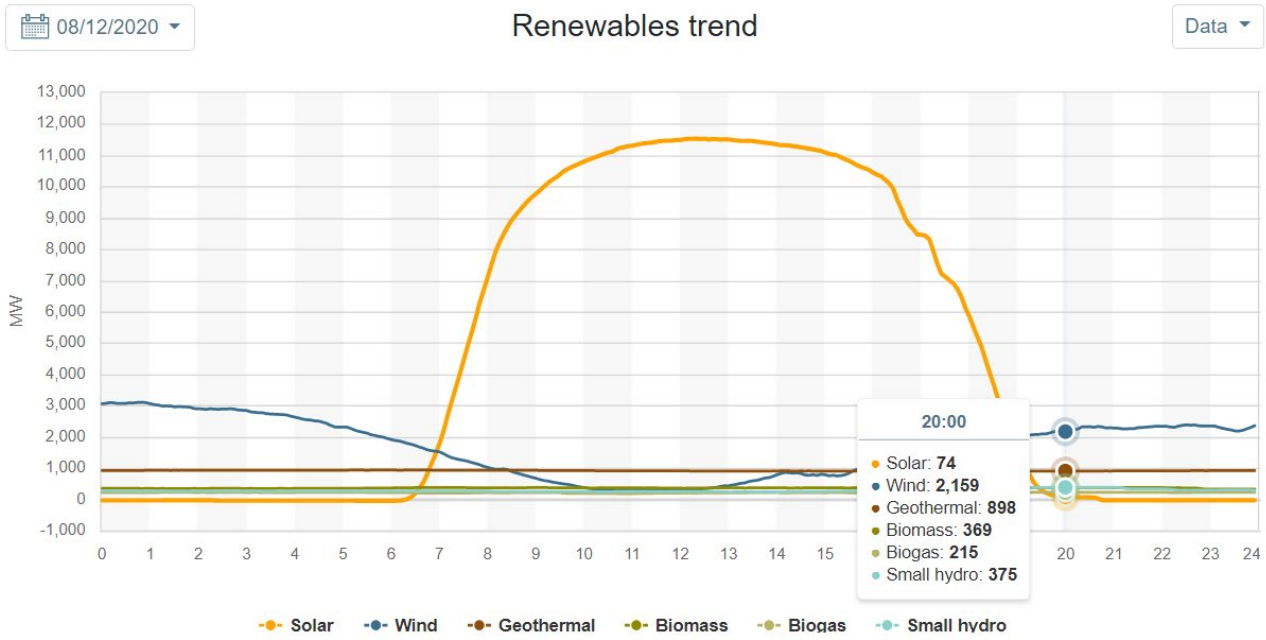



**Figure 6: Illustrative Snapshot of Renewable Generation in CAISO Footprint mid-September**

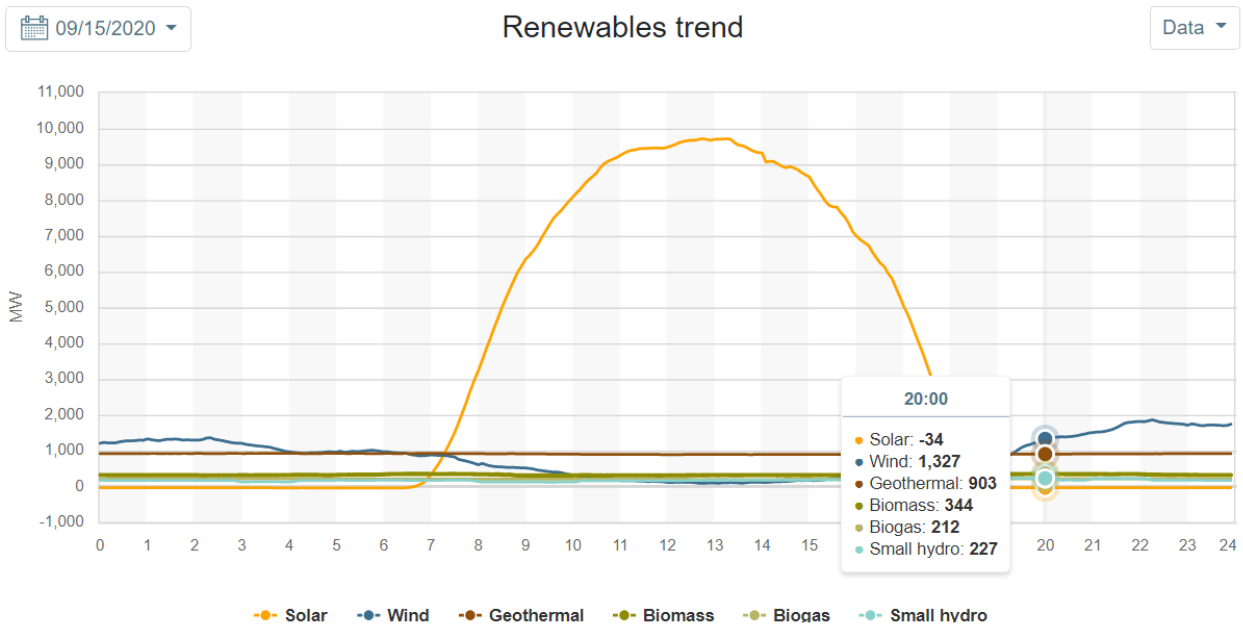
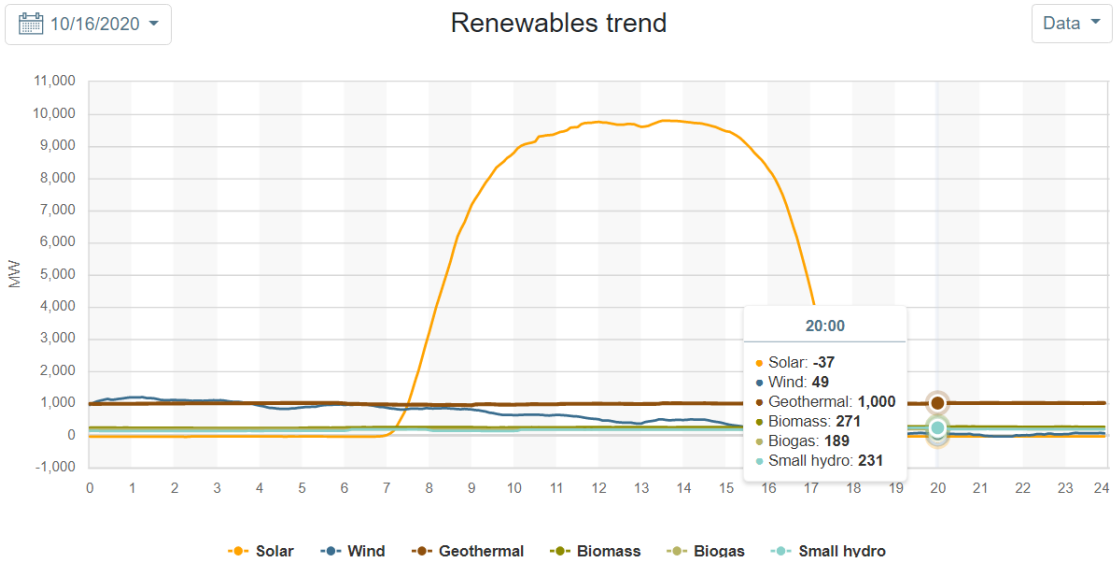


**Figure 7: Illustrative Snapshot of Renewable Generation in CAISO Footprint mid-October**




Resource Stack Analysis

Detailed assumptions and sources of data for the resource stack analysis described herein are provided in Appendix B.

The stack analysis employed for this exercise reflects zero solar generation recognizing the minimal solar output at the end of the hour, if not over the whole hour, for the HE 8 p.m. PDT in each of the summer months.

For all other existing resources, the analysis used as a starting point the 2021 net qualifying capacity (NQC) values available for each month and assumed the same resources with these NQC values will be available in 2022, except for Redondo Beach. The NQC values reflect the amount of capacity that can be counted towards meeting the load plus PRM. They are based on counting methodologies established by the CPUC and tested for deliverability by the CAISO.

For demand response resources, the Final Root Cause Analysis showed that approximately 50 percent of the demand response procured by the CPUC's jurisdictional

load serving entities was effective during the mid-August rotating outages.[47] The stack analysis assumed an improvement in overall performance to 60 percent of the 2021 NQC value by 2022. For imports, the stack analysis assumed procurement of resource adequacy imports based on the historical average from 2015 through 2020 for each month. This assumption does not consider whether tightening supply conditions in the rest of the west could decrease imports into the CAISO footprint. Imports may decrease due to west-wide heat waves like those experienced during mid-August 2020, drought conditions in neighboring states that reduce the amount of surplus hydroelectric energy available for export, or the retirement of major resources in the rest of the west.

For incremental resources, the stack analysis relied on the CPUC's list of new resources expected to be online by August each year through 2022 (both contracted and uncontracted) to reflect potential supply.[48] This list of resources was developed from a variety of CPUC proceedings. Not all resources were explicitly procured to address the Final Root Cause Analysis findings, and not all of the resources can be counted-on to be effective during the net demand peak period. To address this concern, the stack analysis removed stand-alone solar capacity to reflect little to no generation at HE 8 p.m. PDT, although solar paired with storage is included at its NQC value. All other resources were also assumed to be effective later in the day.

Forecasted Demand and Planning Reserve Margin

All of the existing and incremental resource capacity is "stacked up" and compared to the demand at HE 8 p.m. PDT, plus a PRM. The forecasted demand contained in the stack analysis is based on the 1-in-2 average hourly forecast for June through October 2022, which is derived from the mid-demand and mid-additional achievable energy efficiency scenario from the CEC's 2020 IEPR Update.

[47] CAISO, CPUC, and CEC, *Final Root Cause Analysis: Mid-August 2020 Extreme Heat Wave*, January 13, 2021, p. 56.
[48] CPUC Energy Division, *Status of New Resources Expected*, November 2020. See CPUC's website for additional details.

This stack analysis compared two PRM levels. The first is the current 15 percent PRM, comprised of a 6 percent margin for required operating reserves plus a 9 percent margin for the combination of above average load and generation forced outage rates. The second PRM is the CAISO's proposed 17.5 percent PRM, comprised of a 6 percent margin for required operating reserves, 4 percent margin for the difference between a forecasted 1-in-2 and 1-in-5 system demand, and 7.5 percent margin for forced outages based on North American Electric Reliability Corporation Generator Availability Data System data.[49] The 17.5 percent PRM is based on the CAISO's analysis that the current PRM does not fully address the findings in the Final Root Cause Analysis noted above.

Table 10 below provides the numerical comparison between the total resource stack versus the load for HE 8 p.m. PDT, plus a 15 percent and 17.5 percent PRM.

[49] CAISO, Legal and Policy Brief of the California Independent System Operator, CPUC Rulemaking 20-11-003, February 5, 2021. A 1-in-2 forecast reflects a 50 percent probability that the forecasted peak will be less than actual peak load, and a 50 percent probability that the forecasted peak will be greater than actual peak load. A 1-in-5 forecast reflects a 20 percent probability that the forecasted peak load will be greater than actual peak load and reflects an above average load level.

**Table 10: Surplus and Shortfall of 2022 Existing and Expected Online Resource Stack Without Redondo Beach as Compared to Load for HE 8 p.m. PDT Plus 15 percent and 17.5 percent PRM (MW)**

| Month | Existing and expected online resource stack without Redondo Beach | Load for HE 8 p.m. PDT | 15% PRM plus load for HE 8 p.m. PDT | 17.5% PRM plus load for HE 8 p.m. PDT | Resource stack minus 15% PRM plus load ([B] - [D]) | Resource stack minus 17.5% PRM plus load ([B] - [E]) |
|---|---|---|---|---|---|---|
| [A] | [B] | [C] | [D] | [E] | [F] | [G] |
| June | 49,466 | 41,204 | 47,385 | 48,415 | 2,082 | 1,051 |
| July | 50,819 | 43,603 | 50,143 | 51,233 | 676 | (414) |
| August | 52,073 | 44,009 | 50,610 | 51,711 | 1,463 | 363 |
| September | 50,715 | 45,343 | 52,145 | 53,278 | (1,430) | (2,563) |
| October | 47,537 | 37,036 | 42,591 | 43,517 | 4,946 | 4,020 |

*Note: In columns [F] and [G], a surplus is shown in black font and a shortfall is shown in red font within parentheses.*

Based on only the existing and expected online incremental resources, the results showed shortfalls in September 2022 under both the current 15 percent PRM and the proposed 17.5 percent PRM of 1,430 MW and 2,563 MW, respectively, as well as a smaller 414 MW shortfall in July under the proposed 17.5 percent PRM. This projected shortfall is conservative, as it assumes load serving entities will contract with all existing and incremental resources known today. This assumption also assumes all existing resources today (except Redondo Beach) remain operational through summer 2022, incremental resources come online as expected, and load serving entities are able to contract for all resources within the CAISO BAA plus at least the historical average level of resource adequacy imports.

For all other months, the stack analysis signaled that there may be sufficient NQC available for procurement to satisfy both current and proposed PRM levels if contracted by load serving entities. However, because the resource adequacy program is designed to give load serving entities additional time during the year to layer in additional

procurement for the summer months, the total level of procurement is not known at this time.[50]

Resource Stack Analysis Projections for 2022

Table 11 compares stack analysis projections for September 2022, the month with the largest anticipated shortfall, to CPUC staff estimates for expedited procurement that is effective at the 8 p.m. hour. Assuming the expedited procurement results in 1,500 MW of additional capacity that can effectively address energy needs during the net demand peak, the shortfall in September is potentially reduced to a 70 MW surplus under a 15 percent PRM but still a 1,063 MW shortfall under a 17.5 percent PRM. Note that at the time of publication of this report, the CPUC has not yet voted on additional expedited procurement, and once adopted some of the proposed programs are likely to be new and untested. In addition, some of the resources targeted in that proceeding—such as contracting with resources at risk of retirement and securing contracts for imported energy—overlap with resources that are already counted in other categories of the resource stack. Consequently, the incremental resources that will result from that procurement are estimates only, and there is likely to be a non-trivial level of risk and uncertainty associated with the resources being proposed in that effort.

Table 11 also includes the capacity from Redondo Beach Units 5, 6, and 8 that would be available should the OTC Policy compliance deadline be extended through December 31, 2023. The combination of the capacity potentially available from expedited procurement and from Redondo Beach results in a 900 MW surplus for September 2022 under the current 15 percent PRM. However, there is a 229 MW deficit under the 17.5 percent PRM.

[50] Annual resource adequacy filings are due every October for the following program year to meet 90 percent of the total requirement. 100 percent of the requirement is not due until 45 days before the operating month. In order other words, total procurement for September 2022 will not be fully known until mid-July 2022.

**Table 11: Surplus and Shortfall for September 2022 Total Resource Stack as Compared to Load for HE 8 p.m. PDT Plus 15 percent and 17.5 percent PRM (MW)**

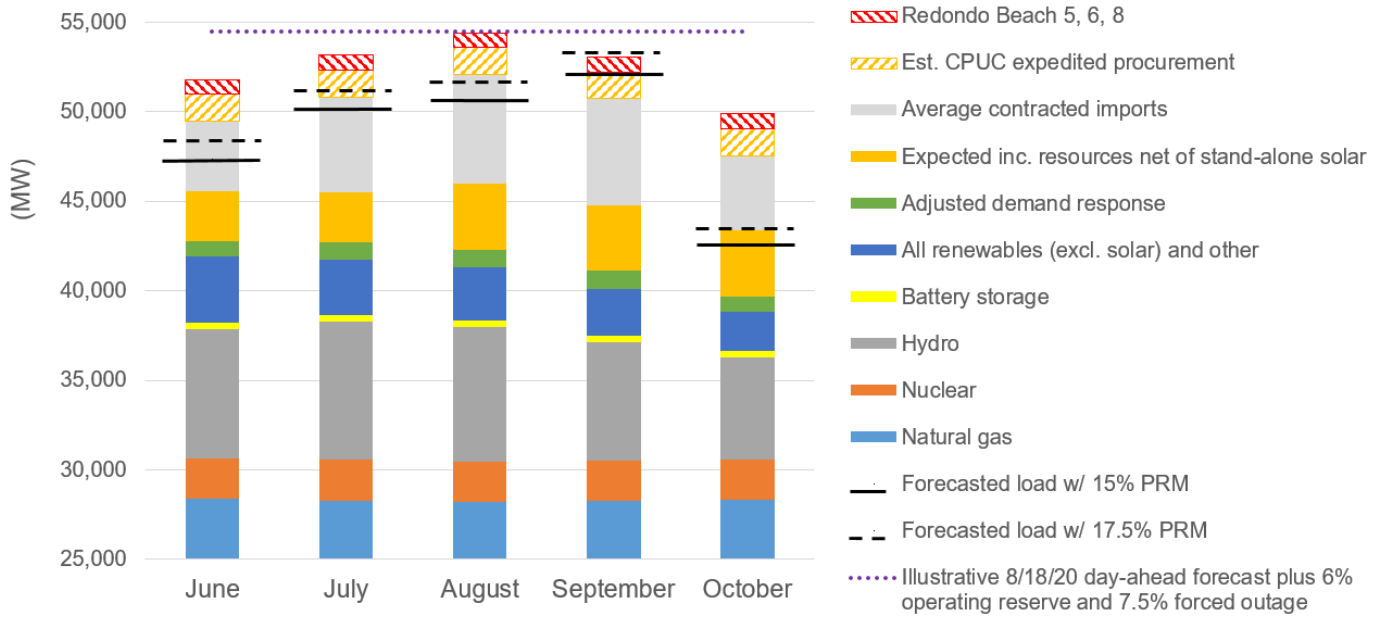
| | | 15% PRM | 17.5% PRM |
|---|---|---|---|
| [1] | Existing and expected online resource stack | (1,430) | (2,563) |
| [2] | Estimated CPUC expedited procurement | 1,500 | 1,500 |
| [3] | Sub-total with only expedited procurement | 70 | (1,063) |
| [4] | Redondo Beach Units 5, 6, and 8 (RB) | 834 | 834 |
| [5] | Total with expedited procurement and RB | 904 | (229) |

*Note: A surplus is shown in black font and a shortfall is shown in red font within parentheses.*

Figure 8 shows stacked resource columns for June through October 2022 compared with the forecasted load for HE 8 p.m. PDT, plus a 15 percent and 17.5 percent PRM for each stack. The figure includes both the estimated CPUC expedited procurement as well as the extension of Redondo Beach Units 5, 6, and 8.

In addition to the projected 2022 stack analysis, Figure 8 also includes a historical comparison based on an actual weather event. On August 18, during the mid-August 2020 heat wave, the day-ahead forecast was projected to be 48,000 MW at HE 8 p.m. PDT. This is over 4,000 MW higher than the projected August 2022 forecast at HE 8 p.m. PDT. Adding in the required 6 percent operating reserves and the CAISO's recommended forced outage rate of 7.5 percent results in a total requirement of 54,480 MW. This requirement is illustrated with a horizontal dotted line. The conditions surrounding this event and level of demand—extended high temperatures and stressed grid conditions throughout the western United States—are representative of the circumstances in which the capacity of Redondo Beach would be most needed.

**Figure 8: June – October 2022 Resource Stack vs. Load for HE 8 p.m. PDT Plus 15 percent and 17.5 percent PRM**




Projections for 2023

There are several uncertainties in developing a 2023 stack analysis, as neither the 2022 nor 2023 NQC lists are available, current procurement authorizations are either still in progress or not yet approved, and the resource adequacy program continues to evolve. At this time, the CEC's demand forecast is showing approximately 500 MW of load increase at HE 8 p.m. PDT between 2022 and 2023, as shown in Table 12 below.

**Table 12: Increase in Forecasted 2023 Load for HE 8 p.m. PDT**

| Month | 2022 Load for HE 8 p.m. PDT | 2023 Load for HE 8 p.m. PDT | Increase in 2023 Load ([C] - [B]) |
|---|---|---|---|
| [A] | [B] | [C] | [D] |
| June | 41,204 | 41,610 | 406 |
| July | 43,603 | 44,031 | 428 |
| August | 44,009 | 44,406 | 397 |
| September | 45,343 | 45,826 | 483 |
| October | 37,036 | 37,589 | 554 |

Should the demand for energy increase in 2023 as projected, the power generated by Redondo Beach will be critical to offset system-wide grid shortfalls.

## VII. SACCWIS Recommendation and Alternatives

SACCWIS considered the following alternatives to address grid reliability and makes the following recommendation.

### Alternative 1 & Recommendation – Extend OTC Compliance Date for Redondo Beach for Two Years

The SACCWIS recommends the State Water Board amend the OTC Policy to extend the compliance date of Redondo Beach Units 5, 6, and 8 for two years from December 31, 2021, to December 31, 2023.

The extension would help meet system reliability needs for September 2022 at HE 8 p.m. PDT as demonstrated by the system-wide grid shortfalls in the 2022 stack analysis. The second year of the extension is necessary to address the uncertainty in the 2023 resource supply stack and the CEC's forecasted 500 MW increase in demand between 2022 and 2023. The stack analysis indicates shortfalls of 1,430 MW under a 15 percent PRM and 2,563 MW under a 17.5 percent PRM, with the only resources online in 2022 being those that currently exist (not including Redondo) and those expected to come online by 2022. Assuming 1,500 MW of additional, expedited procurement comes online on schedule, the power generated by Redondo Beach would help offset a remaining shortfall of 1,063 MW, based on a 17.5 percent PRM. The 17.5 percent PRM is a more conservative reserve margin, in part intended to reduce the risk of power outages when demand is high during west coast-wide heat waves. The addition of 834 MW from Redondo Beach would help meet the demand and significantly offset system-wide grid shortfalls.

Even with an extension of the Redondo Beach compliance date, 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 BAAs, such as during extreme and prolonged heat waves. However, this risk would be significantly decreased due to the availability of additional power from Redondo Beach.

Furthermore, a two-year extension would minimize the regulatory risk of returning to the State Water Board should the power generated by Redondo Beach be needed in 2023. Should it be determined that there is no need for Redondo Beach in 2023, the unit may retire earlier than its compliance date deadline.

This recommendation follows indications from the CPUC, CAISO, and CEC that a request for extending Redondo Beach's compliance date may be necessary depending on the pace and success of incremental procurement authorized by the CPUC.[51] Additionally, in amending the OTC Policy on September 1, 2020, the State Water Board recognized that "portions of California were subject to rotating power outages during mid-August 2020 due largely to unexpectedly high peak energy demands during widespread extreme high temperatures. The CPUC, CAISO, and CEC may be revising their forecasting models to account for this scenario, and may determine that there is a need to request additional extensions of final compliance dates to maintain grid reliability and avoid similar blackouts in the future."[52]

Since September 1, 2020, critical uncertainties discussed both in this report and in the Final Root Cause Analysis have sparked efforts from the CPUC, CAISO, and CEC to revise their forecasting models and have highlighted the need for additional capacity. Specifically, these uncertainties include:

1. Whether authorized or proposed procurement will adequately address the net demand peak period;
2. Whether imports can be successfully contracted for up to at least the historical average resource adequacy levels despite tightening supply conditions in the rest of the west;
3. Whether resources assumed online today will remain so beyond 2021 and perform as expected;
4. Planning processes have not entirely changed to address high loads and the net demand peak but expedited actions seek to provide a stop-gap;

[51] Additional details are available on the State Water Board's website.
[52] The Resolution is found on the State Water Board's website.

5. Processes that address additional procurement and market changes are still in progress, and once implemented a fair amount of uncertainty regarding their effectiveness will remain; and
6. Lastly, there are a variety of climate-change and real-time conditions that could negatively impact the operation of the fleet but are unknown until much closer to the operational period, such as drought, wildfires threatening generation and transmission infrastructure, and cloud cover which reduces solar output and battery storage charging capability.

The CPUC has authorized new electric resources to replace a portion of the OTC fleet's capacity subject to the OTC Policy, and will continue to monitor this procurement, as well as incremental procurement under D.19-11-016 and R.20-11-003. As part of this process, and pursuant to a request by the State Water Resources Control Board, the CPUC submitted its first quarterly report on D.19-11-016 procurement on March 16, 2021. Additionally, efforts are underway to address the recommendations of the Final Root Cause Analysis of the mid-August rotating outages. Though incremental procurement is in progress or soon to be authorized, not all of the new resources can address the critical grid needs later in the evening.

Extending the compliance date for Redondo Beach would be responsive to supporting system-wide grid reliability concerns in summer 2022 and 2023 due to extreme and prolonged climate-change induced weather conditions and would ensure that the electrical power needs essential for the welfare of the citizens of the State of California are met. Furthermore, the extension would also provide a necessary "bridge" as new procurement comes online, some of which will specifically address critical grid needs during the net demand peak period.

**Alternative 2 – Extend OTC Compliance Date for Redondo Beach for One Year**

In this alternative, SACCWIS would recommend the State Water Board extend the OTC Policy compliance date for Redondo Beach Units 5, 6, and 8 for one year, until December 31, 2022.

This alternative would help meet system reliability needs for September 2022 at HE 8 p.m. PDT. The need for an extension of Redondo Beach is demonstrated by the stack analysis, which shows shortfalls of 1,430 MW under a 15 percent PRM and 2,563 MW under a 17.5 percent PRM, with the only resources online in 2022 being those that currently exist (not including Redondo Beach) and those expected to come online by 2022. Assuming 1,500 MW of additional expedited procurement comes online on schedule, the power generated by Redondo Beach would help offset a remaining shortfall of 1,063 MW, based on a 17.5 percent PRM.

Even with an extension of the Redondo Beach compliance date, 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 BAAs, such as during extreme and prolonged heat waves. However, this risk would be significantly decreased due to the availability of an additional 834 MW from Redondo Beach to help meet the high demand in 2022.

This alternative would not help meet system reliability needs in 2023 due to the high level of uncertainty around resource supply. If a need is subsequently identified for 2023, there may not be enough time to conduct regulatory processes to amend the OTC Policy and further extend the compliance date. Similarly, depending on when a need is identified, the resource owner may not be capable of keeping the plant in service for an additional year.

**Alternative 3 – No Action**

In this alternative, SACCWIS would recommend no change to the OTC Policy compliance date. Redondo Beach would stop using ocean water for once-through cooling on or before December 31, 2021. 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 BAAs.

## VIII. Regulatory Requirements

The following section describes water quality and air quality regulatory requirements and procedures related to a compliance date extension for Redondo Beach. These actions are separate and distinct from the contracting process for the power plant. If the State Water Board approves an OTC Policy compliance date extension, contracting for the power plant would occur separately and through other processes. The procurement process will identify the specific capacity needed to meet reliability requirements.

### Water Quality

Following the SACCWIS' recommendation to extend the compliance date for Redondo Beach, the State Water Board would consider adopting an amendment to the OTC Policy to extend the compliance date. The most likely process will be for the State Water Board to consider the amendment in fall 2021 with sufficient time for the California Office of Administrative Law to review the amendment prior to December 31, 2021.

An alternative suspension process involves the CAISO sending letters to SACCWIS, the State Water Board, and the Los Angeles Regional Water Board notifying them that continued operation of Redondo Beach is deemed necessary to maintain grid reliability beyond December 31, 2021, and requesting suspension of Redondo Beach's compliance date for more than 90 days per Section 2.B.(2)(b) of the OTC Policy. Executive directors of the CEC and CPUC have ten days to submit letters stating any opposition to the suspension. If there is no opposition from the other energy agencies, the State Water Board shall conduct a hearing during the 90-day suspension or within 90 days of receiving the notification to determine whether to suspend the compliance date for more than 90 days. Per the OTC Policy, the State Water Board will afford significant weight to the recommendations of the CAISO. If suspended, the State Water Board would need to amend the OTC Policy on or before the end of the suspension period granted by the State Water Board.

Additionally, the NPDES permit and associated TSO issued to Redondo Beach by the Los Angeles Regional Water Quality Control Board (Los Angeles Regional Water Board) will expire on September 30, 2021, and December 31, 2021, respectively. Upon

submission of a complete Report of Waste Discharge, the NPDES permit may be administratively extended until the adoption of a new order; however, no additional time could be given to Redondo Beach to comply with certain final effluent limitations in this NPDES permit unless a revised TSO is adopted by the Los Angeles Regional Water Board. The Los Angeles Regional Water Board can develop a revised TSO for Redondo Beach concurrently with the OTC Policy amendment.

### Air Quality

Stationary source permitting in California is the shared responsibility of CARB, the State's 35 local air pollution control agencies (air districts or districts), and U.S. EPA Region 9. CARB does not issue any preconstruction or operating permits for stationary sources, but plays an oversight role over district permitting programs. In California, a new or modified stationary source that will emit air pollutants typically must meet certain emission control requirements and obtain preconstruction and operating permits from the district where the source is located. The district prepares an engineering analysis and places conditions in the preconstruction permits to ensure compliance with the requirements of federal, State, and local air pollution regulations. Once construction is complete and compliance with preconstruction permit conditions is verified, an operating permit is issued. Title V is a federal Clean Air Act program, implemented by the states, designed to standardize operating permits and the permitting process for major sources of emissions.

Redondo Beach is located in the jurisdiction of the South Coast Air Quality Management District (SCAQMD) and has a valid Title V permit (expires on February 4, 2024). Generating Units 5, 6, and 8 can continue operating as long as the facility maintains compliance with its permit and any future applicable federal, state, and local air regulatory requirements.

## IX. Conclusions

The SACCWIS recommends that the State Water Board extend the OTC Policy compliance date for Redondo Beach Units 5, 6, and 8 for two years through December 31, 2023, to help offset system-wide grid shortfalls projected during periods of high energy demand during the net demand peak period. Demand is projected to be highest

in September 2022 and 2023 during the 8:00 p.m. hour, with highest needs during extreme and prolonged west coast-wide heat waves induced by climate change. Extending the compliance date for Redondo Beach would be responsive to supporting system-wide grid reliability concerns in summer 2022 and 2023 and would ensure that the electrical power needs essential for the welfare of the residents of the State of California are met.

## APPENDIX A

## AVERAGE ANNUAL FLOW RATE DATA FOR ONCE-THROUGH COOLING FACILITIES

| | Average Annual Flow Rate (MGD) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Power Plant Name** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** |
| Humboldt Bay Power Plant Units 1&2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Potrero Power Plant | 152 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Contra Costa Generating Station | 15.4 | 33 | 53 | 17 | 0 | 0 | 0 | 0 | 0 |
| Pittsburg Power Plant | 18.8 | 16.9 | 79 | 48.8 | 26 | 67 | 32 | 0.07 | 0 |
| Moss Landing Power Plant | 289.9 | 212.3 | 396.4 | 353.6 | 244.9 | 312.5 | 231 | 135.2 | 200.3 |
| Diablo Canyon Nuclear Power Plant | 2,347 | 2,368 | 2,277 | 2,311 | 2,242 | 2,360 | 2,372 | 2,286.4 | 2,338 |
| Morro Bay Power Plant | 21.5 | 41.7 | 50.2 | 22.7 | 0.2 | 0 | 0 | 0 | 0 |
| El Segundo Generating Station | 112.9 | 97 | 197 | 217 | 107 | 135 | 7 | 4.58 | 0 |
| Haynes Generating Station Units 1&2 | 720 | 812 | 886 | 725 | 471 | 506 | 448 | 355.5 | 441 |
| Scattergood Generating Station | 276.4 | 299 | 296.8 | 272 | 244 | 311 | 151 | 109.8 | 108 |
| Harbor Generating Station | 45.5 | 44.0 | 47.3 | 46.8 | 49.6 | 49.1 | 47 | 50.07 | 46 |
| Alamitos Generating Station | 2.9 | 106 | 375 | 496 | 332 | 324 | 317 | 316.21 | 114.74* |
| Redondo Beach Generating Station | 59 | 180 | 178 | 95 | 107 | 142 | 95 | 156.95 | 75.3* |
| Mandalay Generating Station | 39.7 | 56 | 77 | 109 | 63 | 78 | 56 | 48.4 | 3 |
| Ormond Beach Generating Station | 12 | 18 | 71 | 133 | 68 | 98 | 60 | 86.6 | 117.9 |
| Huntington Beach Generating Station | 202.9 | 242.6 | 238.5 | 178 | 169 | 159.6 | 134 | 134.2 | 114.5 |
| South Bay Power Plant | 34.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | Average Annual Flow Rate (MGD) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Power Plant Name** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** |
| Encina Power Plant | 211.9 | 314.5 | 531.1 | 264.0 | 338.6 | 410.2 | 325 | 387.8 | 356.1 |
| San Onofre Nuclear Generating Station | 2,030 | 2,256 | 1,677 | 1,003 | 42 | 42 | 37 | 0 | 0 |
| **Total** | **6,592.3** | **7,097** | **7,430.3** | **6,291.9** | **4,504.3** | **4,994.4** | **4,312** | **4,071.8** | **3,915.9** |

Source: EPA Flow Data, (Intergraded Compliance Information System [ICIS] Database) Julie Johnson and Jonathan Dolan. Updated on February 16, 2021.

*Previous 2018 values for Alamitos and Redondo Beach Generating Stations were not calculated properly. These values have been updated and are now displayed correctly.

## AVERAGE ANNUAL FLOW RATE DATA FOR ONCE-THROUGH COOLING FACILIITES (CONTINUED)

| | Average Annual Flow Rate (MGD) | |
|---|---|---|
| **Power Plant Name** | **2019** | **2020** |
| Humboldt Bay Power Plant Units 1&2 | 0 | 0 |
| Potrero Power Plant | 0 | 0 |
| Contra Costa Generating Station | 0 | 0 |
| Pittsburg Power Plant | 0 | 0 |
| Moss Landing Power Plant | 236.2 | 241.2 |
| Diablo Canyon Nuclear Power Plant | 2,067 | 2,282 |
| Morro Bay Power Plant | 0 | 0 |
| El Segundo Generating Station | 0 | 0 |
| Haynes Generating Station Units 1&2 | 398.7 | 467.0 |
| Scattergood Generating Station | 98.1 | 124.0 |
| Harbor Generating Station | 48.1 | 45.0 |
| Alamitos Generating Station | 101.8 | 126.7 |
| Redondo Beach Generating Station | 72.4 | 80.2 |
| Mandalay Generating Station | 0 | 0 |
| Ormond Beach Generating Station | 146.9 | 227.5 |
| Huntington Beach Generating Station | 113.4 | 82.1 |
| South Bay Power Plant | 0 | 0 |

| | Average Annual Flow Rate (MGD) | |
|---|---|---|
| **Power Plant Name** | **2019** | **2020** |
| Encina Power Plant | 262.1 | 0 |
| San Onofre Nuclear Generating Station | 0 | 0 |
| **Total** | **3,545** | **3,814** |

Source: EPA Flow Data, (Intergraded Compliance Information System [ICIS] Database) Jonathan Dolan. Updated on February 16, 2021.

## APPENDIX B

## INPUTS, ASSUMPTIONS, AND METHODOLOGY FOR RESOURCE STACK ANALYSIS

The table below summarizes the input assumptions for Tables 9 through 12 and Figure 8 for June through October 2022.

| **Resource supply stack** | |
|---|---|
| PRM | Current PRM – 15 percent. *See CPUC's website for details.*<br><br>CAISO proposed PRM - 17.5 percent comprised of:<br><br>• 6 percent for operating reserves<br>  ○ Glossary of Terms Used in the North American Electric Reliability Corporation's Reliability Standards<br>  ○ North American Electric Reliability Corporation Contingency Reserve<br>• 4 percent for load above 1-in-2 system demand<br>  ○ Reflects the approximate difference between a 1-in-2 and 1-in-5 peak forecast. For example, the CAISO footprint coincident peak for 2022 is 45,448 MW for the 1-in-2 forecast. The 1-in-5 forecast from the same data set is 47,383 MW, or 4.3 percent higher. An increase from the 1-in-2 to the 1-in-10 forecast reflects a 6.6 percent increase in the peak demand.<br>  ○ Load Serving Entity and Balancing Authority Tables<br>• 7.5 percent for forced outages<br>  ○ Based on the weighted equivalent forced outage rate from the North American Electric Reliability Corporation Generator Availability Data System. |
| Load | • CEC 2020 2020 IEPR 1-in-2 system peak Mid-Mid Load.<br>• Used 2022 forecast for HE 8 p.m. PDT which is HE19 Pacific Standard Time (HE19 PST) in 2020 IEPR data. IEPR dataset is entirely in PST, which does not consider daylight saving. |

| | |
|---|---|
| **Existing generation** | |
| NQC | Final NQC Report for Compliance Year 2021 (Version dated November 13, 2020.)<br><br>Resource IDs from the NQC list were cross-referenced with CAISO Master Control Area Generating Capability List for resource category verification. The Master Control Area Generating Capability List is available on CAISO's website. |
| **Gas Generation** | |
| Existing gas generation | Existing generators from 2021 NQC list based on values for each month of analysis. Includes OTC units: Alamitos Units 3, 4, and 5; Huntington Beach Unit 2; and Ormond Beach Units 1 and 2. Includes RMR generators: Oakland Unit 2 and 3, Channel Island Power, Greenleaf II Cogen. Note: Midway Sunset Cogeneration was included on the 2021 NQC list.<br><br>Includes announced retirements. Does not include new units. Dynamic scheduled generators included in Imports. |
| **Nuclear** | |
| Existing nuclear | Diablo Canyon Unit 1 and 2. Qualifying capacity based on 2021 NQC list based on monthly values.<br><br>Dynamic scheduled generators included in Imports. |
| **Existing hydro (including Pumped Storage)** | |
| Large Hydro | >30 MW hydro resources within the CAISO footprint. Qualifying capacity based on 2021 NQC list based on monthly values.<br><br>Dynamic scheduled generators included in Imports. |
| Small Hydro | ≤30MW, renewable portfolio standard eligible resources within the CAISO footprint. Qualifying capacity based on 2021 NQC list based on monthly values. |
| Pumps with NQC | Pumps designated to provide ancillary services with an NQC value. Qualifying capacity based on 2021 NQC list based on monthly values. |
| Pumped Storage | Includes: Eastwood; Helms Units 1, 2, and 3; Lake Hodges Unit 1 and 2; and San Luis. |

| | |
|---|---|
| **Existing battery** | |
| Existing batteries | Total installed values from 2021 NQC list based on monthly values. |
| **Existing renewables and other resources** | |
| Existing wind | Total installed values from 2021 NQC list based on monthly values.<br><br>Qualifying capacity based on effective load carrying capability for each month from D.19-06-026. |
| Existing other renewables | Includes Biomass, Biogas, Geothermal, Heat Recovery, and Waste to Power. Qualifying capacity based on 2021 NQC list based on monthly values. |
| Existing other resources | Includes coal and miscellaneous resources. Qualifying capacity based on 2021 NQC list based on monthly values. |
| **Demand Response** | |
| Adjusted demand response | Demand response assumed to be the sum of two sources (1) IOU programs registered in the CAISO market plus (2) third-party demand response programs in the CPUC-jurisdictional footprint typically shown as resource adequacy.<br><br><u>Demand response from IOU programs</u>:<br><br>Individual IOU demand response totals spreadsheets for Pacific Gas & Electric, SCE, and SDG&E. Based on the monthly values from June through October for 2022 Total Event-Based/Supply-Side Programs (inclusive of transmission and distribution loss factor gross up). Monthly totals are further grossed up for 15 percent PRM per current practice.<br><br><u>Demand response from third-party providers</u>:<br><br>Assumed 250 MW per month, equivalent to the current monthly shown resource adequacy levels of demand response.<br><br>Adjusted Demand Response assumes a 60 percent success response rate of the total Demand Response for each month based on summer 2020 performance of 50 percent with a slight improvement expected by summer 2022. See also *Final Root Cause Analysis: Mid-August 2020 Extreme Heat Wave*, January 13, 2021, "Table 4.3: Comparison of Demand Response Performance During August Stage 3 Events," p. 56. |
| **Incremental resources net of stand-alone solar** | |

| | |
|---|---|
| Incremental resources net of stand-alone solar | Incremental resources are new resources expected to be online by August 2022 (both contracted and uncontracted).<br><br>Source: *Status of New Resources Expected*, November 2020, CPUC Energy Division, page 7.<br><br>Reporting method: Analysis only reports online dates by August 1 of each year. Therefore, data for June and July 2022 reflect values for all new resources expected online by August 1, 2021. August through October 2022 reflect values for all new resources expected online by August 1, 2022.<br><br>Stand-alone solar NQC values are subtracted from the incremental resource values by month, using the same reporting method above. |
| **Imports** (based on total maximum import capability of 10,805 MW) | |
| Contracted resource adequacy imports | Based on average of historical contracted imports from 2015 through 2020 for each month, which includes both drought and non-drought years. Includes Palo Verde and Hoover and dynamically scheduled resources. Average values are:<br><br>○ June: 3,922 MW<br>○ July: 5,340 MW<br>○ August: 6,095 MW<br>○ September: 5,921 MW<br>○ October: 4,171 MW |
| **Estimated CPUC expedited procurement** | |
| Estimated CPUC expedited procurement | 1,500 MW per month based on CPUC staff estimates of expedited procurement through the CPUC's *Order Instituting Rulemaking to Establish Policies, Processes, and Rules to Ensure Reliable Electric Service in California in the Event of an Extreme Weather Event in 2021* (R.20-11-003). |
| **Redondo Beach Generating Station** | |
| Redondo Beach Generating Station | Redondo Generating Station Unit 5, 6, and 8. Qualifying capacity based on 2021 NQC list based on monthly values. |